

The Tasmanian Curriculum

Information and Communication Technologies (ICT)

K–10 Cross Curricular Framework and support materials
Plus Skills Checklists



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Overview

What is ICT?

ICT stands for Information and Communication Technology. In schools, ICT is a set of tools for teaching and learning in all areas of the curriculum. ICT can improve motivation, thinking and achievement across all subjects so they should be used as learning tools in all subjects. ICT enables students to construct and represent their own knowledge from the vast amounts of information, real-world and virtual environments available to them. Students operate ICT to inquire, access, reflect on and manage information, to create, generate and test ideas and to evaluate and communicate their understanding with others. ICT enables students to manipulate and create information and information products, and communicate in diverse and creative ways across the globe.

As the knowledge society continues to grow at a rapid pace, emerging technologies continue to be introduced and refined. Many schools and communities are able to access a broader selection of ICT tools and so have increasing opportunities to promote quality education with and through ICT.

Why study ICT?

Existing and emerging technologies are central to modern societies and relevant to people's work, business, home and social lives. Schools need to prepare students for the world in which they live, a world characterised by rapid technological change and global communications. ICT is vital for economic growth and development. ICT skills are highly valued throughout business and society. ICT skills and understandings are necessary for a productive and rewarding life and can play a significant part in connecting people and enhancing their wellbeing.

Information literacy rich classrooms promote lifelong learning. They enable learners to be self-directed and to assume greater control over their learning. They build critical and reflective thinking. By promoting information literacy in schools, students can become actively engaged and informed citizens in local and global communities.

ICT can extend the range of learning experiences available and can be delivered in highly flexible ways. It plays an important role in forging links between schools and local and global communities. It can promote innovation, increase productivity and enrich quality of life.

Ethical use of ICT

It is important for students to use ICT ethically and to be aware of the ethical issues that ICT can present. Their ethical understandings and values should be developed from early childhood onwards, so that they can learn to use ICT responsibly and be aware of potential dangers and issues that can arise in the modern world.

Students learn about the role of ICT in society and its impact on themselves and others. They appreciate the roles and responsibilities of people working with ICT and become ethical, responsible and strategic users. They learn to use safe practices to protect people and information and develop strategies for handling unwanted communication. They reflect on past ICT issues and apply thinking strategies to explore the future impact of ICT. The ethical use of ICT is embedded across the four organising strands of ICT.

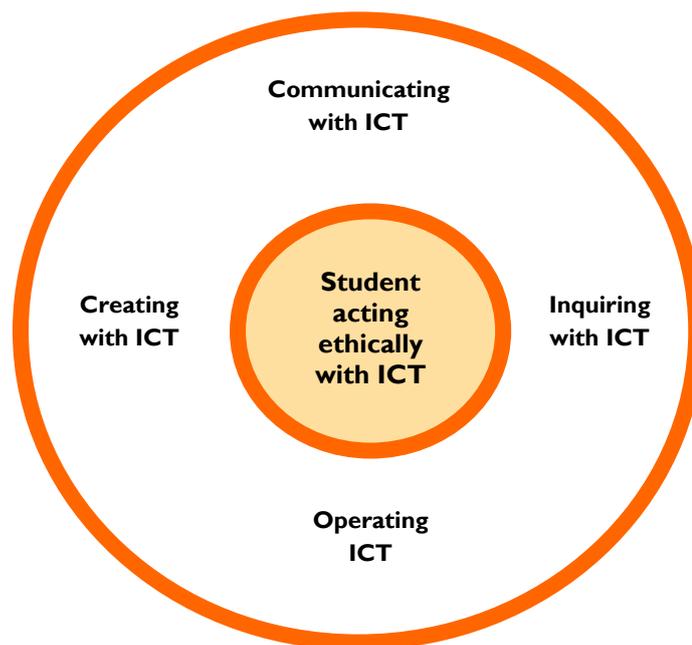
How is ICT structured? ICT is described in four strands.

Inquiring with ICT. Students use ICT for inquiry and research. They identify information needs, locate and access information. They organise, use and interpret information to improve their understanding.

Creating with ICT. Students create ICT products to extend their thinking skills. They analyse ICT problems and needs, develop strategies and evaluate solutions. They use design processes to select appropriate ICT, generate ideas and plans and to monitor and reflect on their learning.

Communicating with ICT. Students use ICT to enhance communication. They learn to communicate and apply ICT to present information, engage with diverse audiences and collaborate. They communicate face-to-face and remotely with individuals and networks. Students experience and share alternate views, construct new understanding and develop empathy with others.

Operating ICT. Students gain an understanding of the systems they are operating. Skills in operating one system can be transferred and built upon when operating other systems. They learn to apply ICT standards and conventions. They apply preventative strategies to protect systems and data and solve basic ICT-related problems.



Values, purposes and goals in the Tasmanian Curriculum

Extensive community consultation has led to values, purposes and goals that provide a firm foundation for providing Tasmanian students with a quality education. How schools enact these is guided by dialogue between the school and its community. They will be seen in the school's curriculum programs, philosophy, classrooms and relationships. Embedding ICT into the curriculum provides a sound basis for developing the values, purposes and goals of the Tasmanian Curriculum.

Values

Values guide decisions about curriculum and support students, teachers, parents, carers and the community. The shared values are:

- connectedness - developing a sense of community through friendship, care, compassion, cooperation, acceptance, belonging and sharing
- resilience - developing self-confidence and self-respect, optimism, perseverance and wellbeing
- achievement - attaining success, pursuing excellence and being proud of personal achievement
- creativity - valuing original ideas and demonstrating enterprise and innovation.
- integrity - acting honestly, ethically, and consistently
- responsibility - accepting individual and collective responsibility and contributing to sustainable community development
- equity - developing tolerance, respecting difference and encouraging distinctiveness.

Purposes

The shared purposes are that all Tasmanian students are learning to:

- learn
- live full, healthy lives
- relate, participate and care
- act ethically
- create purposeful futures, and
- think, know and understand.

Goals

The shared goals for Tasmanian students are that they:

- are able to reason, question, make decisions and solve complex problems
- are able to create, communicate and convey ideas clearly and confidently
- have a positive vision for themselves and their future
- are well prepared to participate actively in our democratic community and as global citizens
- can understand science and technology and make thoughtful decisions about their application.

Performance criteria

Performance criteria are the core assessable aspects of learning and identify the typical achievement expected by students at each standard. Each performance criteria is described in detail in the ICT standards.

Performance criteria describe what students can typically do at each standard.

There are a total of eight performance criteria for the ICT Cross Curricular Framework, with two for each strand as described in the table below:

Strand	Performance criteria
Inquiring with ICT	<ol style="list-style-type: none">1. Inquire and become critical information consumers2. Inquire using appropriate strategies and tools
Creating with ICT	<ol style="list-style-type: none">3. Create, edit and share information and ideas4. Follow recognised conventions to express ideas and information
Communicating with ICT	<ol style="list-style-type: none">5. Express identity, communicate appropriately and maintain safety and privacy6. Contribute to and learn from others
Operating ICT	<ol style="list-style-type: none">7. Use recognised procedures to maintain a secure, safe and efficient ICT environment8. Understand how ICT components and systems are used to store and retrieve information

Learning opportunities

The ICT Cross Curricular Framework describes learning by strands, performance criteria and learning opportunities. At each standard, students are provided with opportunities to learn ICT concepts, knowledge and skills that can be embedded in all curriculum areas.

ICT Cross Curricular Framework suggested content

The following four pages outline possible content focus for each strand.

Concepts and skills for Inquiring with ICT

Key focus areas	Suggested content focus
Searches	<ul style="list-style-type: none">• Accessing search engines• Conducting effective searches• Modifying searches• Collecting and organising social bookmarks• Customising search engines• Building web presence for business and enterprise
Research	<ul style="list-style-type: none">• Creating research proposals• Planning for research• Following effective steps for research• Summarising key content points of a website• Quoting and paraphrasing material• Synthesising information from various sources• Collaborating to share and compare ideas• Citing and referencing research sources• Creating bibliographies
Evaluation	<ul style="list-style-type: none">• Comparing content from different sources• Citing and referencing sources appropriately• Evaluating searched information• Validating information
Problem solving	<ul style="list-style-type: none">• Exploring ICT learning resources• Participating in online challenges• Investigating, analysing and problem solving with ICT learning resources• Using graphic organiser software to illustrate thinking and connect ideas• Selecting ICT tools for problem solving• Planning and following inquiry processes involving ICT
Reflecting on evolving content	<ul style="list-style-type: none">• Registering as a member of various websites; logging on for access• Establishing online identities• Personalising web content• Customising social content websites• Contributing to evolving websites• Providing feedback to others and reflecting on feedback received• Interacting within social networking spaces for learning• Reflecting on evolving web content
Simulation and virtual environments	<ul style="list-style-type: none">• Exploring virtual environments to test ideas• Designing with modelling software• Selecting and using simulation tools to model real-life scenarios• Creating and using simulations to model problem solving

Concepts and skills for Creating with ICT

Key focus areas	Suggested content focus
Creating learning solutions	<ul style="list-style-type: none">• Planning for creations and selecting appropriate ICT tools• Producing ICT creations for specific audiences and / or purposes• Considering audience feedback• Evaluating products• Attending to sequence and logical order in ICT creations• Collaborating online and offline to share ideas, create with others and provide peers with feedback• Integrating a variety of ICT tools to create products
Expression of ideas	<ul style="list-style-type: none">• Using software and online resources to create products• Using a broad range of ICT tools for products• Creating with imported materials• Using wizards• Using graphic organisers and storyboards for planning• Demonstrating production skills• Creating and presenting multi-media products• Share creative ideas in online forums or discussions
Evaluating learning solutions	<ul style="list-style-type: none">• Editing, refining and improving work• Formatting work• Collaborating online and offline to refine products• Using ICT editing tools• Assessing, monitoring and evaluating performance
Data analysis and manipulation	<ul style="list-style-type: none">• Exploring mathematical software packages and online games• Manipulating data• Collecting data and representing it using ICT• Creating graphs, survey instruments, spreadsheets and databases with ICT• Analysing data
Presenting products	<ul style="list-style-type: none">• Presenting text, sound and graphics suitable to product types• Manipulating text, sound and graphics• Logical sequence• Using a variety of word processing features and styles• Incorporating tables and graphics• Applying advanced formatting features to documents
Ownership	<ul style="list-style-type: none">• Respecting the creativity and property of others• Considering intellectual property and copyright laws• Creating while avoiding plagiarism and copyright breaches• Considering different forms of intellectual property

Concepts and skills for Communicating with ICT

Key focus areas	Suggested content focus
Netiquette	<ul style="list-style-type: none">• Respecting others• Applying netiquette to communications• Awareness of ethical and unethical ICT communications• Sharing materials responsibly• Recognising the ethical issues that emerging technologies present• Sharing netiquette protocols with others
Safety	<ul style="list-style-type: none">• Relating stranger danger to online environments• Using social utilities safely• Avoiding being a victim of cyber crime• Awareness of the different forms that cyber crime can take• Identifying safety strategies
Online Identity	<ul style="list-style-type: none">• Using usernames and passwords• Using appropriate online identities incorporating nick-names and avatars• Using privacy assured social networking tools• Expressing identity safely• Respecting the privacy of others• Awareness of privacy concerns regarding specific social networking tools
Online projects	<ul style="list-style-type: none">• Planning for online projects• Participating in class cultural exchanges• Collaborating and interacting with others• Working effectively in a team• Interacting in shared work spaces• Contributing to the learning of others• Learning from others beyond the classroom• Respecting others
Collaborative software (groupware) tools	<ul style="list-style-type: none">• Sending and receiving messages• Sending files to individuals and groups• Organising communications using tools such as address books and calendars• Trialling a range of collaborative software (groupware) tools for communication
Collecting and sharing data	<ul style="list-style-type: none">• Broadcasting to an audience, using tools such as podcasts• Using hand-held tools to create and share work• Comparing different devices for communication• Considering the ethical use of ICT devices

Concepts and skills for Operating with ICT

Key focus areas	Suggested content focus
Protecting systems and data	<ul style="list-style-type: none">• Saving work regularly• Adhering to backup protocols• Awareness of viruses and spyware and their consequences• Following download protocols• Protecting systems and data
Troubleshooting	<ul style="list-style-type: none">• Demonstrating patience and resilience• Seeking help when necessary• Troubleshooting some problems independently• Sharing problem solving strategies
Occupational Health and Safety (OH&S)	<ul style="list-style-type: none">• Demonstrating correct posture• Being aware of ergonomic principles• Identifying and following ICT safety procedures• Identifying health and safety risks as a result of misusing ICT• Awareness of what constitutes a safe and healthy ICT environment
Files	<ul style="list-style-type: none">• Accessing and updating files• Interpreting file addresses• Naming files• Filing work to hard drives, hand-held devices and online spaces• Organising folders into folders and sub-folders
Input, output, processing and storage devices	<ul style="list-style-type: none">• Classifying devices• Using various input, output and storage devices• Assessing which input, output and storage devices are most suited to tasks• Awareness of how input, output, processing and storage devices work together
System components	<ul style="list-style-type: none">• Identifying computer parts and being aware of the basic functions of these parts• Interpreting basic computer terminology• Considering software and hardware compatibility• Comparing different systems• Understanding basic networking concepts

Teaching ICT

Teaching for learning

High quality teaching has a significant impact on student learning and achievement.

Effective teachers of ICT:

- embed ICT into their daily routines, using the ICT cross curricular framework as a guide
- build student ICT skills as described in the *Assessment Evidence Guide*
- establish and maintain engaging, safe and challenging learning environments
- make learning fun, relevant and personal for all students
- understand the needs of learners and know how learning best occurs
- teach for understanding and make relevant connections across curriculum areas
- have high and achievable expectations of student achievement
- express clear values and purposes for education and learning in ICT
- design interesting, motivating and rewarding learning experiences
- build independent, self-regulated learners
- explicitly focus on thinking skills including inquiry and reflection
- explicitly teach literacy and numeracy skills
- use a diversity of teaching strategies
- critically reflect on their practice
- innovate in the classroom and collaborate with peers
- contribute to the learning of others beyond the classroom and school
- use ICT in their teaching, assessment and professional learning
- establish and nurture effective partnerships with parents and the school community
- use ICT as a set of tools for improving outcomes across the curriculum
- use assessment to improve student learning
- use assessment to inform their teaching
- establish and use networks for learning, teaching and assessing
- demonstrate a commitment to ongoing professional learning.

Teaching and learning are more effective when the key focus is on the student at the centre: acquiring the understanding, skills and attributes needed to achieve their individual potential and establishing a commitment to lifelong learning, and developing fulfilling personal and career pathways.

Learning, teaching and assessment principles

The following principles outline key beliefs about the role of learning, teaching and assessment in the Tasmanian Curriculum.

Learning	Teaching	Assessment
... involves making meaning of the world	... develops understanding and the acquisition of knowledge and skills	... focuses on students demonstrating understanding in a range of curriculum areas
... is innate and lifelong	... is based on high expectations and a passion for learning	... is designed to improve learning and achievement
... is a personal process	... recognises individual differences, is inclusive and based on a broad range of teaching strategies	... builds opportunities for students to self-assess and negotiate criteria and assessment tasks
... connects prior knowledge and experiences to new information and contexts	... determines what students know and makes connections to student needs, interests and future possibilities	... information is based on valid processes and directly used to plan effective teaching
... is profoundly influenced by social interactions	... builds purposeful, positive relationships between all those involved in the educational process	... is fair and inclusive of judgements from students, peers, teachers, parents and others
... is affected by emotions	... provides a safe and positive learning environment	... allows for the development of wellbeing of all partners in the learning and teaching process
... is strongly influenced by personal identity and motivation	... builds positive expectations and confidence in the student	... provides timely, accurate and constructive feedback to the student
... depends on meaningful information and experiences	... involves the student in setting goals and connects what is taught to life and further learning	... enables the student to be clear about what is being assessed and how this connects to life and further learning
... is enhanced when students are aware of how thinking and learning occur	... explicitly focuses on thinking skills in all curriculum areas	... encourages students to reflect on their learning and development of thinking skills
... enables students to demonstrate their understandings in new ways	... demonstrates planning and teaching that allows students to transfer their learning to new problems and situations	... explicitly tests students' ability to apply their learning in new contexts

Cross-curricular perspectives

ICT in curriculum areas

The goal of ICT in the curriculum in all but specialist IT courses is to use the technology as a key tool in all students' curriculum area-based learning. Most ICT knowledge, skills and understanding are developed and used in more than one curriculum area. For example, the knowledge and skills required to use spreadsheets to manipulate data is similar whether using it within Vocational and Applied Learning or Mathematics-numeracy. Common underlying principles are required for evaluating sources in a historical, literary or scientific inquiry. Skills that students develop in locating, accessing and evaluating appropriate resources in Society and History, Science or English-literacy are used in all areas of the curriculum and in students' everyday lives.

ICT in the Arts

Students use ICT to create, record and revisit arts products, events and performances. They express their own ideas and communicate with others. Students use ICT in all arts forms and increasingly in new arts forms such as multimedia.

ICT supports reflection and communication, the interpretation, appraisal, analysis and creation of arts works and deeper examination of the place of the Arts in society.

ICT in English-literacy and LOTE

ICT in English-literacy helps students understand how people communicate using different modes. They develop skills in communicating, accessing, organising and structuring information to refine ideas, collaborate and improve understanding.

ICT extension

Some ICT skills can be developed within ICT extension programs. Developing advanced ICT skills empowers students across the curriculum as their confident selection and use of tools means teachers can focus greater attention to subject content and important processes.

ICT in Health and wellbeing

In Health and wellbeing students use ICT to investigate issues and develop their understanding of physical, mental, emotional, social and spiritual health. They use ICT as tools to record practices such as movement, diet and behaviours, and to analyse, present and transform collected data and information. ICT are used as reflection and communication tools, to participate in local and global collaborative learning communities and are used to present and evaluate information to others.

ICT in Mathematics-numeracy

Students use ICT in Mathematics-numeracy to develop skills in problem solving, communication and reasoning. They identify information needs and access information; organise, manipulate and transform data; and develop personal interpretations. They apply mathematical and numerical skills and concepts and use ICT to generate and test hypotheses for accuracy and bias. They learn to communicate mathematical theories, findings and understanding.

ICT in Science

In Science, the use of ICT enables students to acquire, evaluate, record, manipulate, integrate and communicate data and information, collected from their own original investigations or inquiries and that are accessible in scientific or other texts. It also supports student collaboration and communication in local and global scientific communities.

ICT is of particular value in the acquisition of original scientific data. It allows measurements to be recorded and analysed more precisely. Specifically designed science software can support students in developing an understanding of science concepts (e.g. Learning Federation objects) or in carrying out modelling and simulations for situations that it are not feasible to investigate experimentally (e.g. change in a population over a number of generations).

In Science students use ICT to access an increasing range and quantity of data and information. They learn to evaluate information for authenticity, credibility, authority, validity, bias, accuracy and currency.

ICT in Society and History

Students use ICT in Society and History to examine and evaluate information, develop justifications for value positions and beliefs, discuss issues and deepen their interpretations of issues and events. Through information and networks, students inquire, think critically, collaborate, make decisions and take action on significant issues. ICT provide students with an increasing range of information to develop their knowledge of the chronology and meaning of particular events and issues.

Emerging geo-spatial technologies (e.g. GIS) enable highly systematic study of events, trends and issues.

ICT in Vocational and Applied Learning

Students in Vocational and Applied Learning use ICT to access an increasing range and quantity of data and information relevant to vocational and further learning.

They learn to evaluate vocational and applied learning data and sources for authenticity, accuracy and usefulness. Students use ICT to develop understanding and skills in areas including pathways planning and enterprise projects. They investigate issues such as the nature and role of technology in society and learn to design, make and appraise ICT products.

ICT and thinking skills

ICT supports the development of a wide range of thinking skills. Students use ICT to present and access information, as a tutor, as a tool and as a support for dialogue and collaboration. Effective use of ICT for improved thinking skills depends on appropriate selection of ICT for a learning purpose, careful planning and genuine opportunities for students to apply ICT in different contexts for learning in and beyond the classroom.

ICT Cross Curricular Framework planning

Contexts for planning

The ICT Cross Curricular Framework provides considerable support and opportunities for students to learn and achieve the highest possible outcomes across the Tasmanian Curriculum. Through the *Student at the Centre* plan, schools are empowered to make decisions about the learning needs of their students and develop school scope and sequences that best address their individual needs and make effective use of resources.

Embedded ICT can be delivered in a variety of ways in primary and secondary schools. Delivery of the ICT Cross Curricular Framework is flexible but it is important for all students to experience adequate coverage of all four strands. While ICT is cross curricular in nature, some schools may still choose to offer additional specialist ICT classes for students.

Scope and sequence

A scope and sequence is a curriculum plan describing teaching content and the order in which it is taught. When planning or mapping curriculum in ICT, consideration should be given to integrated learning sequences with ICT used as key teaching, learning and assessing tools. Planning or mapping curriculum in this way assists schools and teachers to:

- use ICT to enrich all subjects
- enable students to negotiate and personalise their learning
- enable students, parents and the community access to the ICT cross curricular framework
- create yearly plans for grades or classes according to school need
- build conceptual understanding across grades or classes
- ensure ICT skills are built
- avoid repetition of content and make learning contextual and personalised
- effectively organise time, resources and facilities.

Assessment

Effective assessment

The main purpose of assessment is to improve student learning. Assessment is an ongoing process of gathering and using evidence of student achievement.

Effective assessment enables

- students to better understand their progress towards goals and become more knowledgeable and self-directed in their learning
- teachers to make more informed judgements about student progress and design more effective teaching programs, and
- parents and carers to better understand and support student learning and achievement.

Effective assessment emphasises

- assessment *for* learning – teachers using evidence of student progress to inform their teaching
- assessment *as* learning – students reflecting on and evaluating their progress to inform future learning goals, and
- assessment *of* learning – teachers using evidence of student learning to make individual and collective judgements on student achievement against specific curriculum goals and standards.

Assessing ICT

The ICT cross curricular framework provides teachers with a broad range of opportunities for students to show what they know and can do. It provides scope for students to contribute diverse and valid evidence of their learning across the curriculum as well as within ICT. The use of ICT also helps to make assessing and reporting more efficient for students and teachers.

Effective assessment methods include:

- informal assessment – students and teachers making representative judgements about what they have learned on a regular basis
- formal assessment tasks – students demonstrating achievement against explicit criteria that are known prior to undertaking a learning task
- observations or anecdotal records – teachers taking informal notes while working with students
- checklists – teachers recording a snapshot of student knowledge, skills and understanding
- portfolios – students building up carefully selected collections of their work over time
- weblogs – students documenting their ongoing reflections about their thinking and understanding.

On-balance judgement

The year 6 and year 10 checklists are the formal assessment tools for ICT. These are consistent with the ICT cross curricular framework content. A final decision about whether students are rated as competent or not competent is made using an on-balance judgement. An accurate on-balance judgement considers:

- the consistency of student performance over a period of time
- clear indications of progress from first attempts to current performance
- demonstration of knowledge, processes and skills in different contexts
- the validity of the assessment task in relation to the intended outcomes

- whether there is evidence of achievement to rate a student as competent
- relative performance on similar tasks by peers
- teacher reflection and collaboration to increase consistency and validity of judgement

Standards and stages

Standards are markers at points along a learning continuum. There are five standards in the ICT Cross Curricular Framework that describe the years of schooling from Kindergarten to Year 10. There are fifteen stages of achievement. Each standard describes what students should know, understand and be able to do. The description of each standard assumes that earlier standards have been largely achieved and maintained. There is a descriptor of each standard for each of the strands of the ICT Cross Curricular Framework. Learning opportunities are described for each strand at each standard.

Standard	Standard 1			Standard 2			Standard 3			Standard 4			Standard 5		
Stage	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Learning, assessment and year levels

The Tasmanian Curriculum describes the range of learning opportunities for students as they progress from Kindergarten to Year 10.

So that students are challenged to improve their learning, they should be provided with opportunities to learn that are in advance of their expected assessment ratings. Teachers should plan learning opportunities across a range of stages for any year group. Students can take up to a year to consolidate ideas and to demonstrate understanding following the teaching of new concepts or skills. More able students will understand ideas quickly and for others it may take up to two years to reach a similar level of understanding.

Stages and learning opportunities

The table below provides guidance about the range of learning opportunities required within each year group. Few students in each year group will require opportunities to learn that fall outside the range described below.

Year level	Kinder – Prep	Years 1 and 2	Years 3 and 4	Years 5 and 6	Years 7 and 8	Years 9 and 10
Stages	Stages 1 – 4	Stages 3 – 6	Stages 5 – 9	Stages 7 – 11	Stages 9 – 13	Stages 11 – 15

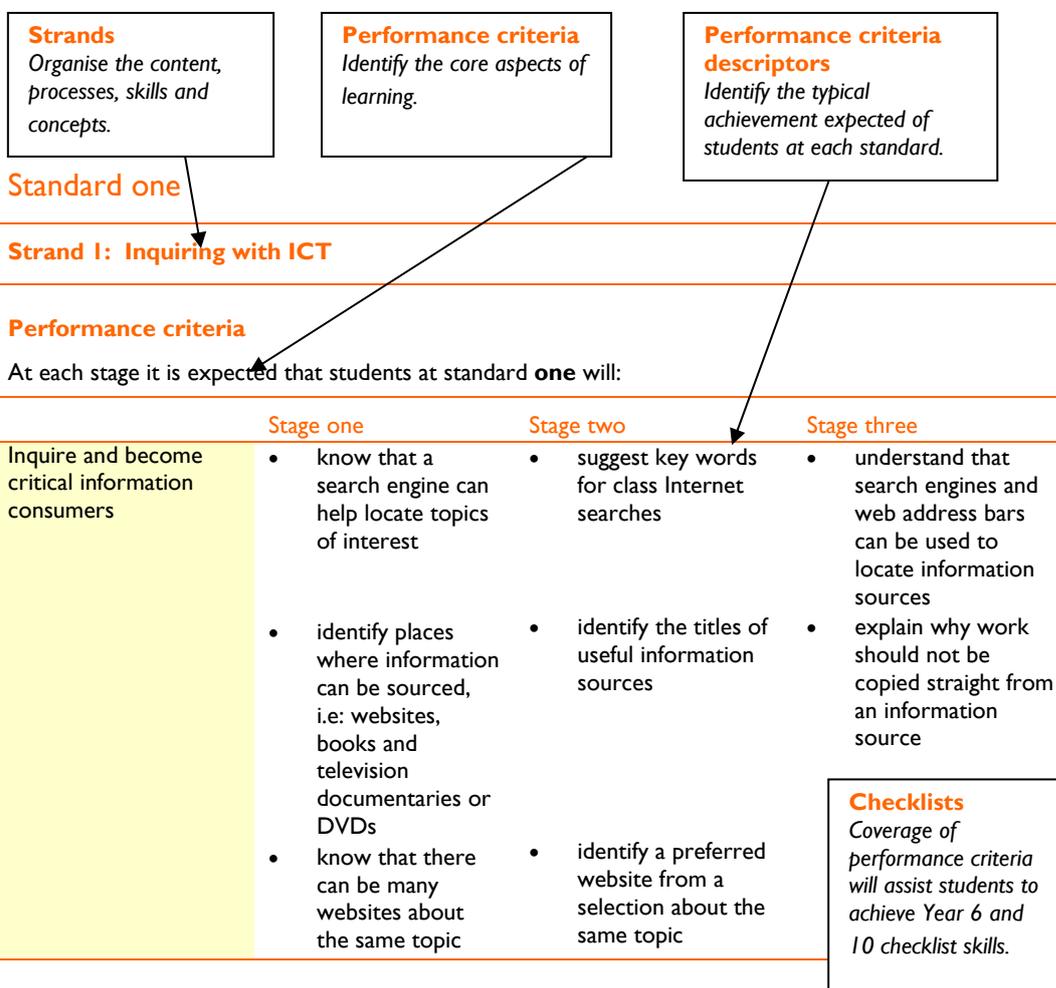
Stages and progression indicators

An assessment guide containing sample progression indicators is provided with this framework. They guide teachers to build student ICT skills, leading to and beyond achievement of the year 6 and 10 checklist skills.

Year level	Kinder - Prep	Years 1 and 2	Years 3 and 4	Years 5 and 6	Years 7 and 8	Years 9 and 10
Standards 1 – 5	1	1 – 2	2 – 3	2 – 4	3 – 4	4 – 5
Stages 1 – 15	1 – 3	2 – 5	4 – 8	6 – 10	8 – 12	10 – 15

Sample learning opportunities and resources

ICT cross curricular framework: Layout and terminology



Sample learning opportunities

Arts

- Sing-along with, dance to and accompany with body percussion, music from the ABC's Playground Radio (www.abc.net.au/children/playgroundradio). Observe the teacher customising the radio to suit the class, adding playlists and selecting preferred channels.

English-literacy

- Observe the teacher conducting an Internet search for and demonstrating how to play some 'alphabet games.' Select three favourite websites featuring alphabet games. Discuss why some games

Sample resources for standard one

- websites/learning objects
- software packages

Resources
Provide ideas for resources to use at a particular standard and in a particular strand.

Cross Curricular
ICT sample learning opportunities are described under specific subjects for all strands.

Learning Opportunities
Describe some examples of learning that enable students to achieve a strand and standard.

ICT

Standard one

Standard one

Inquiring with ICT

Standard one students are typically inquisitive and often ask why questions about everyday situations and events. They are also able to answer relatively simple why questions. Their explanations are often based on relatively limited personal understanding and are not always accurate or relevant. Students can respond to questions about their favourite ICT resources and the characters, facts or stories in them. They learn through play, exploration and first-hand experiences. The Internet and digital sources can provide students with a greater range of environments to explore and problem solve.

Students at standard one largely respond well when encouraged to answer simple questions about their online explorations. Similarly, when they are asked relevant probing questions about their off-line explorations this helps them to articulate their thoughts and make connections between simple concepts. Students benefit from discussing the content of websites after exploring them, in the same way that discussing a story after listening to it can increase comprehension.

Standard one students enjoy play with concrete materials, gaining confidence in manipulating them and using them to explain their thoughts and feelings. When using ICT they manipulate virtual materials, for example: dragging puzzle pieces onto a screen to complete a jigsaw. They also benefit from opportunities to guide characters through environments or to participate as a character, depending on the resources they use.

Modelling how the Internet can be used for inquiry helps students learn that the Internet can provide a vast source of information and experiences. They understand the purpose of search engines when searches are modelled for them. They compare information relating to the same topic from different sources and benefit from participating in class discussions where information sources are compared.

Although students at standard one are usually aware that there are different sources of information, they rarely question the validity of sources.

Creating with ICT

Students at standard one are learning to manipulate and explore ICT and are becoming skilled in using a relatively small range of familiar creative software. There is a vast range of software applications available for standard one learners but rather than introducing students to many of them, they benefit from becoming familiar and confident with a few basic programs. This enables them to express themselves imaginatively and to share expertise using specific software. They become familiar with particular online tools or software packages, using a broad range of creativity features within those packages and tools. They are then able to transfer these skills to other applications, increasing their confidence when they are introduced to new programs and tools.

Students contribute ideas for whole class products and benefit from the modelling that these experiences provide. They are learning how to manipulate ICT tools. They create products for people who are significant to them such as family and friends. They understand that their work can be changed as simple editing processes are modelled to them. They are able to make suggestions for further edits and are beginning to edit their own products.

Students explore mathematical software and online mathematics games as an introduction to exploring and manipulating data. They begin to manipulate and represent data using the examples provided by their teachers modelling familiar online games and software programs. Standard one learners generally prefer software programs and online games with eye-catching graphics and instructional sounds such as voice. Self-paced games offering in-built feedback and reward enable students to progress through concepts at a rate appropriate to their needs.

Students begin to explore basic word processing and representing messages. They experience how messages can be conveyed with text through observing modelled word processing. They explore and

use keyboard keys and voice recognition to create text. They are learning to respect the property and creativity of others.

Communicating with ICT

Standard one students are learning about being part of a class team and that the needs of both themselves and others are important. Students are becoming aware that they can help each other. They acknowledge that people have differences and similarities in areas including skill level and personal preference. They learn to listen to others during sharing and 'show and tell' sessions. Students are learning to respect the rights and opinions of others. They demonstrate simple cooperative social skills such as taking turns, sharing, listening to others and working and playing with them. They participate in class meetings expressing opinions and considering the opinions of others. They follow and participate in the development of simple, agreed classroom rules. Students become aware that good social skills can contribute to positive communication, both face to face and otherwise.

Students are learning to communicate through telling others about their experiences and understanding. They begin to use ICT to communicate in real-time to others beyond the classroom. They might for example communicate with a buddy class without face-to-face contact. Students communicate effectively without face to face encounters using back to back and telephone role-play and by using real-time communication tools such as walkie-talkies and skype™.

Students begin to participate in social exchanges with other classes. They contribute ideas, experiences and materials to online projects and to class emails. They are able to reflect on the contributions received from others. Initially teachers often model ICT communication, inviting students to participate in conversations. As students progress towards the end of standard one, the teacher can take a lesser role in these conversations and the students assume a greater role.

At the upper stages of standard one, many students can type simple whole sentences to communicate electronically with others. Through guided discussion they become aware that personal information should only be shared with trusted, known people. With support they are able to log on to classroom computers and eventually do this independently. They are learning that procedures such as logging on with usernames and passwords help keep information private.

Communication is regularly a focus for students' games. Students role-play and use forms of communication within games. They represent and transfer ideas with communication tools. They become aware that there is a broad range of devices that can be used for communication. They identify a small number of these and are beginning to note some similarities and differences between them.

Operating ICT

Standard one students use ICT systems regularly as part of their daily learning activities. They become familiar with the basic components of systems and their function. They begin to recognise common symbols associated with these components.

Students display increasing patience when confronted with ICT problems and often ask for assistance when required. They are able to wait for loading icons and understand that impatiently clicking around screens slows loading processes down.

As teachers offer assistance, students begin to understand some of the steps required to remedy simple problems. As a result, students start to identify some problem solving strategies. Through modelling and guided discussion students are beginning to understand and perform simple procedures such as saving work so that it can be accessed later.

Students at standard one need to be reminded of correct posture and demonstrate correct posture when sitting at work stations. They are learning that poor posture can affect physical wellbeing and concentration. They are learning to follow and understand agreed safety procedures for operating ICT.

ICT Standard one

At each stage it is expected that students will:

Performance criteria	Stage one	Stage two	Stage three	
Inquiring with ICT	Inquire and become critical information consumers	<ul style="list-style-type: none"> know that a search engine can help locate topics of interest identify places where information can be sourced, i.e: websites, books and television documentaries or DVDs know that there can be many websites about the same topic 	<ul style="list-style-type: none"> suggest key words for class Internet searches identify the titles of useful information sources identify a preferred website from a selection about the same topic 	<ul style="list-style-type: none"> understand that search engines and web address bars can be used to locate information sources explain why work should not be copied straight from an information source identify similarities and differences in content of websites relating to a similar theme
	Inquire using appropriate strategies and tools	<ul style="list-style-type: none"> navigate favourite ICT resources understand that some websites change with updates and others stay the same explore simulation environments 	<ul style="list-style-type: none"> navigate ICT resources relevant to an inquiry identify changes in websites with evolving content identify tasks undertaken when using simulation tools e.g: 'I am building a train track and then I will test it to see if the train can run on it.' 	<ul style="list-style-type: none"> navigate, interact with and discuss ICT resources that address an inquiry understand that owners can change web content or allow users to change or personalise it use simulation tools to test ideas
Creating with ICT	Create, edit and share information and ideas	<ul style="list-style-type: none"> role play making media such as movies, video clips and news reports produce representations with digital tools such as painting and drawing software be aware that digital creations can be changed 	<ul style="list-style-type: none"> contribute ideas for a class digital product such as a slideshow to entertain families demonstrate familiarity with specific creativity software suggest edits for class created digital products 	<ul style="list-style-type: none"> discuss the role of ICT in a class digital product to entertain families use a broad range of features within familiar creativity software contribute to using editing tools to improve class ICT creations
	Follow recognised conventions to express ideas and information	<ul style="list-style-type: none"> explore simple mathematical games in software packages or online type text to represent a message and interpret it show own digital products and view products created by others 	<ul style="list-style-type: none"> manipulate data in simple mathematical software packages or online explore and use a broad range of keys such as alphabet and number keys, delete, enter, backspace, shift and space bar demonstrate ownership of digital work by naming it, showing it and discussing it 	<ul style="list-style-type: none"> manipulate and represent data with mathematical software packages or online games use the scroll bar, arrow keys and enter key and understand that words wrap/ automatically move to the next line respect the digital products of others

ICT Standard one

At each stage it is expected that students will:

	Performance criteria	Stage one	Stage two	Stage three
Communicating with ICT	Express identity, communicate appropriately and maintain safety and privacy	<ul style="list-style-type: none"> role play using ICT with positive social skills understand that conversations with people such as friends can occur online know the purpose of usernames and passwords 	<ul style="list-style-type: none"> contribute to positive and considerate conversations using ICT. understand that people exchange information online for different purposes log onto classroom computers with class username and password 	<ul style="list-style-type: none"> communicate politely using ICT seek appropriate adult guidance before contributing information online understand why passwords need to be kept secret
	Contribute to and learn from others	<ul style="list-style-type: none"> contribute to a class-to-class ICT discussion identify different ways that messages can be sent identify some familiar communication devices 	<ul style="list-style-type: none"> participate in class-to-class online sharing projects suggest ideas for class messages such as emails connect with another person using a digital device or toy 	<ul style="list-style-type: none"> contribute ideas, experiences and materials to class-to-class online sharing projects reflect on class messages received and suggest ideas for replies gather responses to questions using a digital device
Operating ICT	Use recognised procedures to maintain a secure, safe and efficient ICT environment	<ul style="list-style-type: none"> know that work can be saved understand that some programs take longer to load than others demonstrate awareness of correct posture by sitting properly 	<ul style="list-style-type: none"> save work with support know when something has not worked as expected and seek help follow agreed rules for using tools 	<ul style="list-style-type: none"> understand the importance of saving work know how to use safe shut down procedures discuss the importance of following health and safety procedures
	Understand how ICT components and systems are used to store and retrieve information	<ul style="list-style-type: none"> understand that people use filing systems to store and retrieve data name and identify the function of some devices e.g. a camera takes and stores photos name some basic system components such as keyboard, screen and mouse 	<ul style="list-style-type: none"> understand that data can be saved in files and organised into folders identify some reasons for connecting different devices together name visible system components such as monitor, printer and connection ports 	<ul style="list-style-type: none"> retrieve work from own (teacher created) or class folder understand that data is can be exchanged between devices identify similarities and differences between different devices and interactive toys

Standard one

Strand I: Inquiring with ICT

Performance criteria

At each stage it is expected that students at standard **one** will:

	Stage one	Stage two	Stage three
Inquire and become critical information consumers	<ul style="list-style-type: none">know that a search engine can help locate topics of interestidentify places where information can be sourced, i.e: websites, books and television documentaries or DVDsknow that there can be many websites about the same topic	<ul style="list-style-type: none">suggest key words for class Internet searchesidentify the titles of useful information sourcesidentify a preferred website from a selection about the same topic	<ul style="list-style-type: none">understand that search engines and web address bars can be used to locate information sourcesexplain why work should not be copied straight from an information sourceidentify similarities and differences in content of websites relating to a similar theme
Inquire using appropriate strategies and tools	<ul style="list-style-type: none">navigate favourite ICT resourcesunderstand that some websites change with updates and others stay the sameexplore simulation environments	<ul style="list-style-type: none">navigate ICT resources relevant to an inquiryidentify changes in websites with evolving contentidentify tasks undertaken when using simulation tools e.g: 'I am building a train track and then I will test it to see if the train can run on it.'	<ul style="list-style-type: none">navigate, interact with and discuss ICT resources that address an inquiryunderstand that owners can change web content or allow users to change or personalise ituse simulation tools to test ideas

Sample learning opportunities

Arts

- Help Angelina Ballerina stage a ballet on the Angelina Ballerina website, after observing a teacher modelling the process (www.angelinaballerina.com/au/home.html) from the 'fun and games' link. As a class, learn about real ballet by clicking on the 'real ballet' link to view the video clips. Discuss what was learned from the website and try some ballet in the classroom.
- View clips on a video sharing website such as YouTube (www.youtube.com) to compare performances of well-known chants and rhymes such as 'We're going on a Bear Hunt'. Discuss which versions were favoured, with justifications. Participate in a class performance of the chant or rhyme.
- Sing-along with, dance to and accompany with body percussion, music from the ABC's Playground Radio (www.abc.net.au/children/playgroundradio). Observe the teacher customising the radio to suit the class, adding playlists and selecting preferred channels.

- Observe the teacher conducting an image search of favourite nursery rhymes (Note: Google® enables image searches). Compare pictures before selecting a favourite. Justify why the picture was selected before creating a personal picture of the nursery rhyme.
- Explore and compare some online painting tools and programs. Observe a teacher access a search engine and enter the phrase 'kids interactive paint activities'. The teacher will provide demonstrations of how a number of the online paint tools work. As a class select the preferred online art tool website that will be saved into the class 'favourites/bookmarks'. Create independently with the tool.

English-literacy

- Observe the teacher conducting an Internet search for and demonstrating how to play some 'alphabet games.' Select three favourite websites featuring alphabet games. Discuss why some games are preferred over others. The teacher will save the favoured games to the class favourites/bookmarks folder. Access them from the favourites/bookmarks folder to play.
- Access CBeebies- (www.bbc.co.uk/cbeebies/) 'Fun and Games' link. Click on a familiar favourite character. Play a game as this character. Draw a picture of the character in the game. Share the picture with the class, telling the story about what happened in the game and who the characters were.
- Observe a teacher accessing TALIS or other library cataloguing systems to search for a book in the school library and locate it on the library shelves. With support, use TALIS to locate a book on the shelves, leading to using it independently.
- Explore websites such as Starfall (www.starfall.com) that encourage children to build reading skills through play. Discuss how the website relates to learning in the classroom.
- Consider a favourite traditional tale or fairy tale. After comparing different book versions of it, find and compare different digital versions. Observe a teacher typing the name of the story followed by the word 'animation' into a search engine, for example: 'The little red hen animation.' View a number of versions of the same story. Compare what was similar and different about the different versions. Select a preferred version and give reasons for selection. Act out the story in small groups.

LOTE

- Observe teacher modelling how to access websites/ learning objects to reinforce language learning, e.g. explore a familiar song or story to identify simple words and phrases e.g. numbers, colours.
- Explore a CD Rom (e.g. Learn to Speak series) and interact with activities to imitate and produce words and phrases in the target language.

Health and wellbeing

- Complete the 'Make the Rules' *Learning Federation* object as modelled by the teacher. Contribute to making rules while engaged in a soccer-based computer game. Participate in a class discussion on fair play and rules.
- Explore 'Healthy Kids' (www.healthykids.org.uk/) with an older buddy who will read the text. Answer simple questions about the content of the website.
- Contribute ideas to mapping understandings about 'Being Healthy' using Kidspiration® software.
- Observe 'healthy recipes' being searched for. Discuss what makes a recipe a healthy one. The teacher will print out recipes suitable for the class to make.
- Type simple addresses into the web address bar such as www.google.com to access a search engine. Copy and type a simple word from a display such as 'teeth' to conduct a search to find out about keeping teeth healthy. Discuss the difference between accessing a website from the web address bar and accessing a website through a search.

ICT extension

- Research information about a class member's 'Show and Tell' item by conducting an Internet search. Observe a teacher accessing a search engine and typing the name of the object followed by the word 'kids'. Participate in class discussions about some of the websites viewed as a result of the search. After looking at a few websites discuss which were the most useful for finding out about the object.
- Observe a teacher accessing and personalising ABC's 'My Playground' (www.abc.net.au/children/myplayground/default.htm). With support, personalise 'My Playground'. Enter your name. Unlock the palette shown and click and drag pictures of preferred friends and games onto the palette. Then lock it to access your selections. Discuss the benefits of being able to personalise a website.
- Observe a teacher modelling how to type a URL (uniform resource locator) into a web address bar, after selecting a website from a children's magazine featuring recommended web links with matching URLs. The teacher will also type the name of the website into a search engine to model and compare the two ways of accessing websites.
- Participate as a favourite character in The Playground (www.abc.net.au/children/default.htm) and CBeebies games (www.bbc.co.uk/cbeebies/fun/). Respond to simple questions such as: 'What do you have to do in this game?'
- Show and Tell – 'My favourite website' - Demonstrate exploring the site and explain why it is a website you want to keep visiting.

Mathematics-numeracy

- Explore the 'Spinners' *Learning Federation* object to investigate basic concepts, language and reasoning relating to chance and data. Initially observe a teacher modelling this and contribute to sharing predictions.
- Play mathematical games at:- ABC's 'Count us in' website (www.abc.net.au/countusin), from Crickweb (www.crickweb.co.uk) and from the BBC school's website (<http://www.bbc.co.uk/schools/>) after having games modelled by the teacher so that the purpose of each has been identified.
- Observe a teacher conducting a search of 'Kids number games.' The teacher will write down the names of 4 of the websites containing suitable maths games as well as bookmarking them in the class 'favourites' folder. Explore the websites and play the games over a number of weeks. Vote for your favourite website. Compile the votes into a class bar graph. Interpret data and discuss why one website was voted as the most popular.
- Contribute ideas to mapping understandings about shapes on Kidspiration®.
- Explore Millie's Maths House® or other available mathematical software, solving mathematical problems and discussing the adventures along the way.

Science

- Observe a teacher modelling the 'River Journey' *Learning Federation* object as a virtual excursion. Participate by predicting what will happen along the way. Work through the learning object with a peer, listening to the vocal prompts and discussing what's happening. Complete the 'Water' and 'Water Use' series of learning objects in a similar way.
- Pair up with a buddy from an older class directing them through a *Learning Federation* object that you're familiar with such as one from the 'Under the Earth' series. Explain it to them while navigating it with the sound switched off. The older buddy then takes over control of the mouse, completing the learning object with sound and provides the younger buddy with positive feedback about how they helped them to understand the concepts within the learning object.

- Investigate the properties of natural soil environments through hands-on activities such as gardening and explore the 'Soil' series of *The Learning Federation's* learning objects.
- Watch the ABC series 'For the Juniors.' Undertake the activities provided on the ABC Schools website (www.abc.net.au/schoolstv/age/LOWERPRIMARY.htm) and as a class visit some of the 'Useful Websites' provided, discussing how they contribute to the collective knowledge of the class.
- Suggest key words for an Internet search relating to a science learning sequence e.g. when learning about Australian animals, suggest specific animals to conduct a search on.

Society and History

- Explore the 'Australian history' *Learning Federation* series of learning objects: The Golden Fleece, National Parks and The Cobb & Co Coach with teacher guidance to investigate and discuss unusual objects and their relationship to significant Australian environments and industries.
- Explore the 'Island Life' *Learning Federation* object and distinguish between needs and wants to ensure survival on a tropical island.
- View the animated short, 'I think.....that's not fair' accessed through *The Learning Federation*. View the animation, listening to other students discussing concepts of fairness and equality in relation to people and the environment. After viewing and listening to the clip, participate in a community of inquiry about fairness. Build on what was said in the clip using examples from it and your own experiences. Listen, respond to and develop each other's ideas as the students in the clip did. Use verbal reasoning skills to build on and synthesise ideas to increase understandings. (Students ideas can be recorded and compiled into a podcast. See www.mypodcast.com)
- Reflect on 'how we found out' discussions at the end of a history-based learning sequence. Discuss useful resources such as documentaries, books, guest speakers, excursions, websites and software. Consider how each contributed to the growing knowledge of the class.
- Participate in class discussions that introduce the concept of critical analysis, for example: 'Can you believe everything you see and hear on the computer/television?'

Vocational and Applied Learning

- Engage in entrepreneurial pursuits while exploring 'Buds' a *Learning Federation* object. Help a farmer find new markets and different opportunities for selling flowers.
- Explore the 'What's your job?' *Learning Federation* object and discuss jobs undertaken by different family members from different types of families from a range of cultures and geographical locations.
- Assist online games characters to do their jobs such as Bob the Builder (www.bobthebuilder.com) discussing the type of work being done and how it needs to be done.
- Search for 'fruit salad recipes' or 'vegetable soup recipes'. Discuss which are easiest to follow and which have the healthiest and readily available ingredients in them. Participate in preparing the selected recipe.
- Conduct a web search looking for suitable craft activities when a special occasion or season is approaching. Observe a teacher modelling how to type the name of the occasion + craft activities for kids into a search engine, for example: 'Spring craft activities for kids'. Browse some of the results as a class discussing which crafts could be made simply with materials already in the classroom. Print out a selected craft procedure and follow it.

Sample resources for standard one (Inquiring with ICT)

The Learning Federation <http://ecentre.education.tas.gov.au>

Learning Objects (Curriculum Corporation)

Water Series, Under the Earth series, The Soil Series, Australian History series, Make the Rules, Spinners, What's your Job? Buds, Island Life

Web Links

ABC's Playground Radio www.abc.net.au/children/playgroundradio/

ABC's The Playground www.abc.net.au/kids

ABC My Playground www.abc.net.au/children/myplayground/default.htm

Starfall www.starfall.com

Hello-World www.hello-world.com/children/index.php

Children's books online www.lonvig.dk/lucca.htm

ABC Count us In www.abc.net.au/countusin

ABC For the Juniors www.abc.net.au/juniors

Angelina Ballerina www.angelinaballerina.com/au/home.html

Youtube www.youtube.com

BBC CBeebies www.bbc.co.uk/cbeebies/

Crickweb www.crickweb.co.uk/ks1numeracy.html

BBC Schools-numeracy www.bbc.co.uk/schools/websites/4_11/site/numeracy.shtml

Healthy Kids www.healthykids.org.uk/

My Podcast www.mypodcast.com

Bob the Builder www.bobthebuilder.com

ABC Schools www.abc.net.au/schoolstv/age/LOWERPRIMARY.htm

All web links accessed January 2008

Software packages/TV shows/Shorts

Kidspiration®

Learn to Speak™ products (available in 35 languages)

Millie's Maths House®

For the Juniors (ABC TV)

'I think...that's not fair' (Children's Television Foundation) accessed through The Learning Federation

Standard one

Strand 2: Creating with ICT

Performance criteria

At each stage it is expected that students at standard **one** will:

	Stage one	Stage two	Stage three
Create, edit and share information and ideas	<ul style="list-style-type: none">• role play making media such as movies, video clips and news reports• produce representations with digital tools such as painting and drawing software• be aware that digital creations can be changed	<ul style="list-style-type: none">• contribute ideas for a class digital product such as a slideshow to entertain families• demonstrate familiarity with specific creativity software• suggest edits for class created digital products	<ul style="list-style-type: none">• discuss the role of ICT in a class digital product to entertain families• use a broad range of features within familiar creativity software• contribute to using editing tools to improve class ICT creations
Follow recognised conventions to express ideas and information	<ul style="list-style-type: none">• explore simple mathematical games in software packages or online• type text to represent a message and interpret it• show own digital products and view products created by others	<ul style="list-style-type: none">• manipulate data in simple mathematical software packages or online• explore and use a broad range of keys such as alphabet and number keys, delete, enter, backspace, shift and space bar• demonstrate ownership of digital work by naming it, showing it and discussing it	<ul style="list-style-type: none">• manipulate and represent data with mathematical software packages or online games• use the scroll bar, arrow keys and enter key and understand that words wrap/ automatically move to the next line• respect the digital creations of others

Sample learning opportunities

Arts

- Create music online using a tool such as a musical sketchpad (<http://www.creatingmusic.com/>).
- Use Kid Pix® to create a map of a scene from a favourite story.
- Explore the 'Mixing colours: paint' and 'Mixing colours: match'. *Learning Federation* objects and use a mixing machine to mix primary colours to form different colours. Select from a range of pictures and paint using own colour creations. Also use the mixing machine to create colours to match those in selected pictures.
- Explore software programs such as Art Rage®, Tux Paint® and Kid Pix®, creating with features of the programs.
- Complete a painting. Replicate it in TuxPaint®, ArtRage® and Kidpix®. Discuss which of the paint programs were most effective.

English-literacy

- Make a name-initial sounds design using Kid Pix®. Use letter stamps to type own name down the left side of the page. Next to letter stamps, stamp pictures that start with the corresponding letter.
- Type text to represent a message for posting in the class post box. Type the name of the intended class member in the document using a name tag to copy if necessary and insert an appropriate clipart picture for the person. The teacher will scribe what the message was meant to say underneath it. Hand written letters can also be posted.
- Observe the teacher modelling typing up a class blog. Contribute ideas to it. Discuss: Who might read the blog? Who owns the blog?
- Type a message, telling an adult the text that the message is meant to convey. The adult types the message correctly underneath. Type out the correct text below.
- Write a secret message or code word using Kid Pix®. Rather than typing the message in text, use picture stampers, where the initial sound of the picture is the mystery letter in the message. Interpret each others' messages.

LOTE

- Create images using Kid Pix and match modelled words and phrases to create a class book in the target language.
- View a video about the target culture and note the similarities and differences. Then use Kidspiration to make a mind map to express your ideas. Share and discuss.

Health and wellbeing

- Illustrate yourself being active using Kid Pix®. Depict an action that noone else has chosen. Observe the teacher compile these into a Kid Pix® slideshow. Suggest text to accompany own page e.g. 'Olivia is hopping'. View and discuss completed slideshow, performing each action while an adult controls and pauses each slide.
- Create a 'Be Healthy' presentation page using MaxShow®. Insert appropriate pictures. Record voice providing advice on how to be healthy. The teacher will compile all pages into a MaxShow® slideshow.
- Contribute ideas to compose a short class rhyme with a title such as: 'Get Fit' or 'Eat healthy food'. The teacher will write it out in large letters onto a board or piece of paper and model word processing it. Use the hand-written teacher poem to type it up as a MaxWrite® or Word® document. Experiment with font, layout and inserting relevant clipart with support.
- Vote for your favourite fruit. The teacher will model how to represent the class votes in a bar graph using MaxCount®.
- Insert three pictures of healthy food into a teacher created template with a suitable border and heading. Show it to a partner who will suggest possible edits. Insert and delete pictures, resize them and move them, until you are happy with the displayed pictures of healthy foods.

ICT extension

- Identify how to navigate to the 'Home' page of a website. Scroll down to the bottom of the website. Observe a teacher reading the information at the bottom of a website and explaining how the information informs the user who owns the site. Compare this to identifying authors with their stories.
- Open saved work rather than starting new pages for some creations, editing work and changing it to suit different purposes.

- Offer suggestions for how a word processed sentence can be improved, for example: enlarge the font, add clipart or a border. The teacher will edit the sentence, using student suggestions and will also offer suggestions to introduce new features.
- Insert clip art, a photo and your name in WordArt® into a document to create ‘A Placemat about Me.’
- Contribute to creating a slideshow for parents to describe an excursion undertaken. Provide ideas for text to match inserted photos and also provide ideas on design, style and layout. Contribute voice or assist in selecting appropriate sounds.

Mathematics–numeracy

- Explore the ‘Monster Choir’ *Learning Federation* object, creating and extending patterns.
- Explore the ‘Shape Overlay’ Series of *Learning Federation* objects, manipulating 2D shapes by sliding and overlapping to create new shapes.
- Stamp numbers 1-10 into a Kid Pix® document and underneath them select and use stamps to represent the quantities.
- Catch virtual bugs and create a bar graph with them at Cyberchase games (<http://pbskids.org/cyberchase/games/bargraphs/bargraphs.html>) Answer questions about how many bugs of each colour were caught and are represented in the graph.
- Explore MaxCount®, using modelled steps to create with and learn about numbers, charts and graphs.

Science

- Explore the ‘Day and Night’ *Learning Federation* object. Identify objects in the sky and then create a sky scene.
- Explore the ‘Food Chains’ series of *Learning Federation* objects. Investigate how plants and animals get the energy to live. Create food chains that illustrate the flow of energy from the sun to plants and then to animals.
- Play online games where users have to sort and classify living things such as those on ‘A Touch of Class’: www.sciencenetlinks.com/interactives/class.html
- Use creation software such as Artrage® or Tux Paint® to produce representations of mini beasts, ensuring correct body parts such as the number of legs are accurately represented.
- Contribute to creating a MaxShow® or Microsoft PowerPoint® class presentation on caring for a class pet. The presentation should incorporate photos, digital art and dialogue.

Society and History

- Observe the teacher typing classroom rules as a Word® document, changing the font, inserting WordArt, a picture and a border. View the work at a later date, with the teacher modelling how to make edits to it to refresh its content and look.
- Take a photo of a significant or prominent place in the community. An adult will model how to upload the photo into ArtRage® and model using the tracing feature of the program to represent the image in paints. Have a go at using the tracing tool independently and describe the features of the place represented.
- Create a slideshow page to describe ‘My special place’ with support. Include dialogue, text, and images. The teacher will combine all pages into a MaxShow® or Microsoft PowerPoint® class presentation.
- Retell cultural stories through artistic representations in Artrage®.
- Contribute to a Kidspiration® mapping of ideas to illustrate how families meet human needs with food, clothing, shelter, love and care.

Vocational and Applied Learning

- Make a 'When I grow up' MaxShow® or Microsoft PowerPoint® slideshow with support. Work with an older buddy to edit and improve the presentation.
- Observe a teacher modelling how to use Publisher® to create an invitation for parents to attend a class celebration. Offer suggestions for the design and message.
- Use Publisher® wizards to create cards for different people and occasions, with support.
- Open a previously created Publisher® document such as a card, with support and edit it to re-create it for a different person or audience.
- Type your own name using WordArt and in different fonts in Word®, experimenting to see your name represented differently, finally choosing a preferred representation to be printed out and used as a class name tag.

Sample resources for standard one (Creating with ICT)

The Learning Federation <http://ecentre.education.tas.gov.au>

Learning Objects (Curriculum Corporation)

Mixing Colours, Monster Choir, Shape Overlay series, Island Life

Web Links

Art Rage 2.5 www.ambientdesign.com/artrage.html

Tux Paint www.tuxpaint.org/

The KidzPage www.thekidzpage.com/freeclipart.htm

Creating Music www.creatingmusic.com/

PBS Cyberchase Games <http://pbskids.org/cyberchase/games/bargraphs/bargraphs.html>

A Touch of Class www.sciencenetlinks.com/interactives/class.html

All web links accessed January 2008

Software packages

Kidpix®

Artrage®

Tux Paint®

Inspiration®

Max's Toolbox®

Microsoft® -Word, Powerpoint, Excel and Publisher

Standard one

Strand 3: Communicating with ICT

Performance criteria

At each stage it is expected that students at standard **one** will:

	Stage one	Stage two	Stage three
Express identity, communicate appropriately and maintain safety and privacy	<ul style="list-style-type: none">• role play using ICT with positive social skills• understand that conversations with people such as friends can occur online• know the purpose of usernames and passwords	<ul style="list-style-type: none">• contribute to positive and considerate conversations using ICT.• understand that people exchange information online for different purposes• log onto classroom computers with class username and password	<ul style="list-style-type: none">• communicate politely using ICT• seek appropriate adult guidance before contributing information online• understand why passwords need to be kept secret
Contribute to and learn from others	<ul style="list-style-type: none">• contribute to a class-to-class ICT discussion• identify different ways that messages can be sent• identify some familiar communication devices	<ul style="list-style-type: none">• participate in class-to-class online sharing projects• suggest ideas for class messages such as emails• connect with another person using a digital device or toy	<ul style="list-style-type: none">• contribute ideas, experiences and materials to class-to-class online sharing projects• reflect on class messages received and suggest ideas for replies• gather responses to questions using a digital device

Sample learning opportunities

Arts

- Use an application such as Skype® (www.skype.com) to role play with a different class, talking in real-time as fairy tale characters, for example, a child in one class assumes the role of the big bad wolf and children in the other class assume the role of the three little pigs. Teachers provide narration between characters speaking. The remaining members of both classes are the audience.
- Use dummy mobile phones to have a conversation with a partner without face to face communication. Sit back to back without turning around to look at each other, imagining the other person is in a different building. Try to sustain a conversation.
- Participate in a musical concert which will be videoed. View the video and discuss how performances could be improved. Perform the music again until everybody is happy with the final product. An adult will model how to upload the video onto a video sharing website such as YouTube with private sharing settings selected to share with parents. (Teachers need to request parent email addresses and ensure that they understand that the general public can not access the broadcast.)

- Design a character such as a monster at Monster Exchange (<http://www.monsterexchange.org/>) to share with another class or school via email/postal mail
- Visit children's online galleries such as the one provided on ABC's The Playground. (www.abc.net.au/children/gallery/). Discuss preferences for particular artworks and the techniques children used to create them. With parental permission and teacher supervision, post some art work to an appropriate category for sharing with others.

English–literacy

- Listen to the blogs of students in other classes and schools as read aloud by a teacher. (www.blogger.com) Discuss blog entries and contribute ideas for providing the student writers with feedback.
- Get to know the members of an unfamiliar class through email contact with the teacher typing. Suggest questions and comments for sharing information 'about ourselves'. A website such as epals (www.epals.com) is useful for locating potential partner classes.
- Use the correct 'Password of the week' to enter the classroom each day:- a spelling word, magic word or learning sequence word. Through this routine, discuss the meaning of the word 'password'.
- Suggest ideas for communicating with a buddy class, locally or globally, for class-to-class emails and e-cards. Also suggest ideas for sending in postal letters and post cards. Share and discuss responses. Discuss the differences in communicating with email and postal mail.
- Listen to stories broadcast via the Internet such as those located on Story Nory (<http://storynory.com/>). Read, make up or tell by memory simple stories onto a voice recorder such as the free voice recorders provided by mypodcast.com (www.mypodcast.com) or Audacity (www.how-to-podcast-tutorial.com/17-audacity-tutorial.htm). The teacher can upload and save these as directed on mypodcast.com and similar websites. Invite parents to listen to recorded podcasts. Discuss the fact that stories can be broadcast over the Internet and listened to at anytime. (A teacher could also model downloading a podcast and allowing children to listen to it on an MP3 player or iPod.)

LOTE

- Make a class recording of songs, poems or rhymes to share with an audience.
- Using models, contribute to writing emails, e-cards, postal letters and post cards. Discuss whether messages will be all in English or if some of the language being studied will be used in shorter messages such as e-cards. Reflect on messages received as shared by the teacher.

Health and wellbeing

- View web content about staying safe on the Internet as the teacher guides the class through 'Netty's World' (www.nettysworld.com.au/index.html). Discuss the five 'forget-me-nots'. (Be Nice, Get Help, Think Again, Stay Safe and Secure and Protect What's Private)
- Use hand-held voice recorders to interview older buddies about how they keep fit. Take turns using the voice recorders in pairs. The teacher will compile these into a podcast using a resource such as My Podcast (www.mypodcast.com). Listen to the podcast as the teacher scribes the list of fitness routines. Develop own fitness routines.
- Watch a video of the class participating in an outdoor game. Use the video to reflect on being a good sport. Discuss what every class member needs to do to ensure a class game is fun for everybody. Continue to have class games videoed, later watching them and analysing own behaviour. When everybody agrees that a video demonstrates everybody being good sports, send the video to a buddy class overseas, for them to see what their buddies look like and behave like and for them to learn about the games played by Australian school children.

- In pairs interview a member of staff for a nutrition podcast. Decide on a number of questions that are easy to remember such as: ‘What is your favourite way to eat vegetables?’ or ‘What do you like to see students eating at recess time?’ Take turns asking a question each and gathering responses on a hand-held voice recorder. Each pair should interview a different member of staff. The teacher will upload interviews into a podcast for storing, sharing and discussing.
- Contribute to a class health blog as typed by a teacher using a tool such as blogger. (www.blogger.com/start) Document healthy recess and lunch choices and fitness activities undertaken by the class. Describe new activities undertaken. Compare with another class’s health blog to gain inspiration from one another. (A class in the school would be ideal). Contribute to providing the other class with feedback via posting comments to their blog.

ICT extension

- Participate and experiment with different ways of communicating with another class in the school. Use available communication tools such as: web cam, skype (www.skype.com), walkie talkies, string telephones, chat, email, postal mail and by exchanging class-made videos.
- Play password games to access different areas of the classroom and to further understand what a password is, for example ‘home corner’ could become a ‘spy den’. Passwords need to be whispered before entry into the den is permitted with only 4 children being allowed in at a time.
- Take turns assuming the role of being the person to logon to the computers at the start of the day with the class username and password and close them down at the end of the day.
- Make suggestions for a Venn diagram comparing two different types of communication devices, e.g. mobile phones and walkie-talkies. The teacher will scribe common features where the circles interlock and record features specific to only one device in the left or right outer circle.
- Brainstorm: ‘What can you do on the Internet?’ A teacher will scribe ideas. Add to the brainstorm after visiting favourite class websites and seeing what they allow users to do. Consider how the Internet allows people to connect with one another and work together.

Mathematics–numeracy

- View online videos of ‘learning to count’ (search phrase) on a video sharing website such as YouTube (www.youtube.com). Discuss the fact that anyone can share videos on the Internet and the user can watch them anytime not at a scheduled time.
- Arrange objects to make patterns. Photograph the patterns. Observe a teacher uploading the photos into a slideshow presentation. Whoever created the pattern matching the photo, contributes voice to the slideshow, explaining their pattern’s rule. Swap slideshows with a buddy class. View the patterns with the sound turned down. Guess the rules of each pattern. Then re-view the slideshow with sound to see if pattern rules were correctly identified.
- Go on a class walk. Take a photo showing a shape in the environment. The teacher will model uploading all class members’ photos into a slideshow presentation. Provide audio to go with your photo, identifying the shape and where you found it, e.g. “This is a circle. I found it on a road sign with the speed limit 40 inside it.” Share with a buddy class in a different location as instigated by the teacher to compare similarities and differences between the two slideshows.
- Take a digital photograph. Observe the teacher modelling how to upload the photo to a jigsaw maker such as Jigzone (www.jigzone.com/). Have a go at putting each other’s jigsaw photos together.
- Gather data for a survey, using a hand-held digital recording device. Questions should be simple such as: ‘What is your favourite colour?’ After data is gathered, listen to audio recordings placing ticks in a grid for interpreting the most and least popular responses.

Science

- Observe photos of specific animals by searching for them on photo sharing websites such as Flickr (www.flickr.com). Make a list of the features viewed of the animal in one photo. See if those features are the same or different in subsequent photos. Discuss reasons for similar and different features. Take your own photo of the animal (if possible) and a teacher will model uploading class photos to Flickr. (photos can be uploaded for private or public viewing)
- Participate in science online projects such as those advertised on Oz Projects (www.ozprojects.edna.edu.au/sibling/home) (Use the project search box to find age-appropriate projects relevant to science.)
- Talk in real-time using Skype® (www.skype.com) or a similar application to students in a different state of Australia. Contribute to telling them about the current weather and asking questions about their weather. This could be a once a week activity with different students taking a turn of reporting the weather. Teachers can register online projects such as this and invite partners on sites such as Oz Projects. (www.ozprojects.edna.edu.au/sibling/home)
- Participate in a 'My Environment' exchange with a partner class in a different country. Contribute to class emails describing different features of the local environment and describing activities undertaken in different environments, for example: at the beach, on top of the Mountain, at reserves and in the bush. Describe what people do to protect the environments. Swap digital photos that depict local environments. Listen to email responses received as they are read out and ask questions about information provided to compare environments here and there.
- Discuss ideas about 'Sharing our World.' Record ideas onto a voice recorder. (free voice recorder available on www.mypodcast.com) The teacher will upload the ideas into a podcast for sharing on a site such as mypodcast.com.

Society and History

- Participate in Society and History related online projects such as those advertised on Oz Projects (www.ozprojects.edna.edu.au/sibling/home) (Use the project search box to find age-appropriate projects relevant to Society and History.)
- Talk to other students beyond the classroom in real-time using Skype® (www.skype.com) to learn about their culture. Before talking to them, contribute to a brainstormed list of comments and questions for sharing.
- Talk about a shared experience e.g. an excursion. This will be recorded on video as an individual recount and compiled with other student's recounts to formulate 'Our excursion in our words.'
- Discuss and remember polite behaviour such as manners and greetings for communicating with others over the Internet.
- Contribute to completing Y charts about good manners. Complete different Y charts for using manners in different situations, for example: meal time, on excursions and on the Internet. Compare the types of manners required on the Internet with manners in other situations.

Vocational and Applied Learning

- Explore a photo sharing site such as Flickr (www.flickr.com) with a teacher modelling using the search facility to browse photos on specific subjects, for example: 'at work' and watching the results in slideshow mode. While viewing the photos discuss the fact that people all over the world have contributed photos to the slideshow and that anyone can share photos on the Internet.
- Discuss the results of a 'flickr' (www.flickr.com) search for 'communication devices' as typed by the teacher. Browse teacher-selected photos discussing the type of communication forms and devices photographed, who might use them and whether they make use of old or new technology.

- Contribute to a class email, questioning a person who will be visiting the classroom to talk about their occupation. After the visit contribute to a thankyou email, recounting what was learnt.
- Assist in planning to raise funds for a charitable cause. Consider a range of information sources to select a charitable organisation and find more out about their work. Participate in discussions such as: 'What do we want to know?' 'How will we find out?' 'How will we start fund raising?' 'Who will we invite to be involved?' 'How will we communicate with them?' and 'How will we raise awareness of the importance of raising the money?'
- Contribute to a list: 'Ways of communicating over a distance.' The list can be added to over time. Illustrate words that you suggest. Trial some forms of communication on the list. Discuss how specific ICT tools assist people at work.

Sample resources for standard one (Communicating with ICT)

Web Links

Monster Exchange www.monsterexchange.org/

ABC The Playground www.abc.net.au/children/gallery/

Skype www.skype.com

Youtube www.youtube.com

Audacity Tutorial www.how-to-podcast-tutorial.com/17-audacity-tutorial.htm

Netty's World www.nettysworld.com.au/index.html

Story Nory <http://storynory.com>

My Podcast www.mypodcast.com

How to Podcast www.how-to-podcast-tutorial.com/17-audacity-tutorial.htm

Blogger www.blogger.com/

Flickr www.flickr.com

Epals www.epals.com

Jigzone www.jigzone.com/

Oz Projects www.ozprojects.edna.edu.au/sibling/home

All web links accessed January 2008

Software packages

Max's Toolbox®

Standard one

Strand 4: Operating ICT

Performance criteria

At each stage it is expected that students at standard **one** will:

	Stage one	Stage two	Stage three
Use recognised procedures to maintain a secure, safe and efficient ICT environment	<ul style="list-style-type: none">• know that work can be saved• understand that some programs take longer to load than others• demonstrate awareness of correct posture by sitting properly	<ul style="list-style-type: none">• save work with support• know when something has not worked as expected and seek help• follow agreed rules for using tools	<ul style="list-style-type: none">• understand the importance of saving work• know how to use safe shut down procedures• discuss the importance of following health and safety procedure
Understand how ICT components and systems are used to store and retrieve information	<ul style="list-style-type: none">• understand that people use filing systems to store and retrieve data• name and identify the function of some devices e.g. a camera takes and stores photos• name some basic system components such as keyboard, screen and mouse	<ul style="list-style-type: none">• understand that data can be saved in files and organised into folders• identify some reasons for connecting different devices together• name visible system components such as monitor, keyboard, printer and connection ports	<ul style="list-style-type: none">• retrieve work from own (teacher created) or class folder• understand that data is exchanged between devices• identify similarities and differences between different devices and interactive toys

Sample learning opportunities

Arts

- Role play working in an office environment with play work stations set up in a suitable area such as Home Corner.
- Preview favourite children's songs on a music download site such as 'iTunes.' (www.apple.com/au/itunes/) Vote for favourite songs for downloading. (Amount selected will depend on class budget) Observe a teacher modelling downloading the selected songs and making a playlist from them. Sing along and dance to the music when played. The teacher can also model how to save the playlist to a peripheral device.
- Follow modelled steps to scan a piece of artwork. The teacher will model how to upload the artwork into a slideshow, to be compiled into a slideshow gallery of student work. Provide an audio recording to accompany your artwork and describe what it represents and what was used to create it.
- Create a computer out of boxes, using sticky Velcro dots to stick labels onto the correct parts of the computer.
- Design new gadgets for ICT using construction materials. Explain the features of the gadgets to an adult, e.g.-"Here is the screen for taking photos and here is the speaker for recording people's voices and this is the button that plays music. This cord connects it to the computer."

English–literacy

- Contribute ideas and illustrations to class big books ‘What is a computer?’ and ‘Computer Components.’ A resource such as Growing with Technology’ (www.growing.course.com/index.html) level K, will assist.
- Share the content of your computer folder in a student-teacher interview in front of the class. Answer simple questions to describe the contents of the folder and how each piece of work was created.
- Open a saved word processed document with support and make changes, editing the work, saving it regularly by clicking on the disk icon.
- Publish teacher-corrected hand-written stories on the computer using MaxWrite® or Microsoft Word®. Have a teacher conference before printing the work. Discuss: ‘What can I do to improve the look of what is on the screen?’
- Play interactive literacy games, such as ‘Phonics Alive®’ learning valuable literacy skills. Access and close resources independently.

LOTE

- Play LOTE interactive games, such as those found in the languages syllabus resource list. Access and close resources independently.
- Print online resources relating to the language being studied, such as activity sheets from websites and software packages to complete offline. Observe where the printer plugs into the computer enabling the computer to connect with the printer, and send it information.

Health and wellbeing

- Listen to a doctor or nurse explain why good posture is necessary at the computer and in general for good health. Consider the content in (www.cyh.com/HealthTopics/HealthTopicDetailsKids.aspx?p=335&np=285&id=2505) as read aloud by a teacher. After listening, describe some ways of looking after your spine and having a strong healthy back.
- Contribute to completing a Y chart (looks like, feels like and sounds like) about ‘Correct posture when working at a computer work station.’
- Assume correct posture when working at a computer work station. Photos demonstrating good posture will be taken by the teacher and displayed near the computers as a guide.
- Contribute to a list of things to do when confronted with slow loading icons, e.g. get up and have a stretch, blink eyes, count, open second window...
- Display patience and resilience when confronted with computer problems and politely request assistance.

ICT extension

- Observe an adult opening a new document and saving it with an appropriate name into a class or student folder, working towards performing these steps without support. Independently save work during its creation by clicking on the disk icon. Ensure work is saved before closing the screen.
- Recognise your own folder saved in the class drive. With support save documents into own named folder and access them later. (Thumbnail view assists students to access their work.)
- Contribute possible solutions for solving common computer problems as outlined to the class by the teacher. Identify the solution. Apply the solution independently when confronted with the problem in the future.

- Seek help when dialogue windows appear. Listen as the teacher describes why the dialogue box has appeared and observe as the teacher or another student models how to remedy the problem. Consider that some problems are easy to solve and others need experts such as a computer technician to fix them.
- Access programs relevant to learning by selecting from desktop icons, recognising specific icons as symbols for associated applications.

Mathematics–numeracy

- Sort named paper work into matching named manila or other folders. Discuss the advantages of creating digital products and saving them to the correct folder regularly throughout the creation process.
- Cut out pictures from magazines and sort them into manila or other folders. Create labels by writing or sticking representative pictures on the front of the folders. Folders can be kept in a dummy or real filing cabinet.
- Access a mathematics/numeracy interactive game which has been pre-loaded by recognising its icon on the desktop and clicking on it. Explore it, navigate around it and problem solve to complete the challenges within it.
- Be aware that what is seen on the screen can be printed out. Observe that many childrens' websites contain a link to printables, either called 'printables' or 'Activities'. Access favourite childrens' websites, checking to see if they have 'printables.' With permission print out maths printables such as dot-to-dots, mazes and puzzles. Complete the sheets produced.
- Observe a teacher downloading free maths games such as those found on Kaboose (www.kidsdomain.com/download/pc/_math-index.html) and storing them on an external device such as a CD-Rom or DVD. Access and play the games.

Science

- Observe the ports of a computer. Acknowledge that the ports allow devices to be plugged into the computer. Discuss what devices might be plugged into the computer and why.
- Contribute cut out pictures to a class poster: 'Things you plug in.' Browse catalogues and cut out items and sort them into those with cords and those without cords such as USB devices.
- Consider an unfamiliar ICT tool. Discuss what you know about it by looking at it. Discuss possibilities for what it might be able to do and what it might connect with, relating suggestions to the design of the tool. Observe the device being used. Reflect on initial predictions.
- Sort pictures of toys into interactive and non-interactive. Observe the interactive toys to see which ones can work with other devices. Discuss what types of devices they work together with.
- Play inclusive online games for switch users such as those found on CBeebies. (www.inclusive.co.uk/reports/2006/cbeebies.shtml) Consider the fact that not all children can control a mouse so these games are ideal for all children. Discuss: Why might someone not be able to control a mouse? What types of technologies help them?

Society and History

- Play games such as those provided in CBeebies (www.bbc.co.uk/cbeebies/drilldown/fun/3/1/1/) that use different controls such as mouse, keyboard, a combination of mouse and keyboard and a switch. Discuss: 'What types of controls suit toddlers?' 'What types of controls suit children with limited mobility?' 'What types of controls suit older children and adults?' 'What controls do you prefer?' Justify responses.
- Discuss the fact that people lived without ICT devices for years. Discuss specific ICT devices and why people find them useful.

- Draw a classroom computer. Label it, copying a list of labels from the board and ensuring they point at the correct part. Discuss: Who uses computers? Where can computers be found? How do computers help people?
- Discuss ways to ask for and give help to others when computer problems occur.
- Demonstrate personal responsibility for shutting down computers safely, handling peripheral devices carefully and respecting all ICT resources.

Vocational and Applied Learning

- Role-play using home corner or another area of the classroom as a doctor's surgery. Both the reception/waiting room and doctor's room should be equipped with model filing cabinets, computers, phones, doctor's kit and working clocks, pens, paper and folders. Take turns role playing doctor, receptionist and patients.
- Operate available equipment following modelled procedures and agreed safety rules with adult supervision. Equipment could include tools such as: voice recorder, CD player, switches on various devices, calculators, TVs, remote controls, digital cameras (still and video), interactive toys, computer, printer, scanner, phones and web cams.
- Use a resource such as 'Growing with Technology' level K-Katie's Room (<http://www.growing.course.com/index.html>) to learn about the basic parts of a computer. Discuss the types of careers where computer knowledge is necessary.
- View teacher selected videos from a video sharing site such as YouTube (www.youtube.com) from a search on 'parts of a computer.'
- Observe a teacher modelling how to upload photos from a camera to a computer using software such as picasa®, (<http://picasa.google.com.au/>) and downloading the same photos onto a memory stick (thumb drive). Discuss the advantages of using memory sticks.

Sample resources for standard one (Operating ICT)

Web Links

Growing with Technology www.growing.course.com/index.html

Picasa <http://picasa.google.com/>

itunes www.apple.com/au/itunes/

CBeebies Inclusive www.inclusive.co.uk/reports/2006/cbeebies.shtml

CBeebies Drill-down www.bbc.co.uk/cbeebies/drilldown/fun/3/1/1/

Kids Domain downloads www.kidsdomain.com/download/pc/_math-index.html

Kids Health www.cyh.com/HealthTopics/HealthTopicDetailsKids.aspx?p=335&np=285&id=2505

All web links accessed January 2008

Software packages

Picasa®

itunes®

Max's Toolbox®

Microsoft®- PowerPoint and Word

Phonics Alive®

ICT

Standard two

Standard two

Inquiring with ICT

Students at standard two often express their opinions about issues and ask questions to seek more information about topics of interest. They understand that it is acceptable for others to have different beliefs and opinions and start to justify their own opinions. They use thinking tools such as graphic organisers to connect and share ideas and views.

Students begin to reflect on their preferred thinking processes and strategies. They participate in inquiries with considerable teacher support. Students can share ideas with others beyond their classroom, influencing their thinking and having their own thinking influenced by a broader group. They are able to test ideas in virtual environments and reflect on their real-life implications. Standard two students pursue online challenges and participate in self-paced problem solving. They are able to reflect on how their learning has increased after exploring websites relevant to learning. They visit favoured websites frequently, logging onto them and personalising their content. They are able to reflect on the changing content of evolving websites.

Standard two students are becoming skilled in conducting Internet searches. They access search engines and apply useful key words and phrases for seeking information relevant to an inquiry. They consider the content of searched information and can represent important information by summarising, quoting or paraphrasing. They use quotation marks when appropriate and cite sources. They understand that some search results retrieve more useful information than others. They consider various sources of information relating to the same topic, including online sources and decide on preferred sources. They justify their reasons for their preferences. They are becoming aware that not all web sources are reliable.

Creating with ICT

Standard two students use ICT to create work for a variety of purposes. They can word process and experiment with stylistic features, for example changing font and inserting graphics into their documents. They collect data and represent it in different ways. They use an increasing range of tools including hand-held devices such as digital cameras. They develop basic skills in uploading material to incorporate into digital products. They apply a range of effects such as animations to their work. They are becoming more selective and intentional in their work. They become more consistent with their ability to present presentations in logical sequence.

They recognise that works of art can be created with ICT and are made for different purposes, such as entertainment, celebration or to express ideas and feelings. They create presentations for others to enjoy. They reflect on their own art works and those of others. They understand that work can be edited and use software formatting features to improve work. With support, they begin to question, edit and accept feedback in order to improve their use of ICT.

They understand why plagiarism is wrong and are beginning to develop an ethical understanding of why it should be avoided. Students begin to identify and acknowledge the owner/creator of information they use.

Communicating with ICT

Students at standard two understand the value of constructive social relationships. They demonstrate increasing respect for each other in ICT communications. They become aware of what netiquette is and apply it to their own behaviour as they develop empathy towards others. They develop a sense of responsibility for and in groups.

Standard two students work cooperatively and practice effective social skills for efficient group work. They understand that they can also work with students beyond the classroom using ICT tools for communication. They use an increasing range of communication tools such as hand-held devices and online forums, chat and blogs. They use email as a regular form of communication, initially sending emails with support, leading towards independently using email for ongoing communications with

significant people in their lives such as family and friends. They develop an understanding of personal safety in Internet environments. They relate concepts such as 'stranger danger' to online environments. They understand the need for maintaining privacy online and know how to communicate with nicknames, avatars and private passwords.

Students participate in class online projects and exchanges with students from other classrooms locally and globally. They contribute to discussions, collaborate, and interact within these projects. They make comments, offer explanations, express opinions and ask questions. They consider the responses of others and learn from others' perspectives.

Operating ICT

Students operate familiar ICT such as computers, cameras and voice recorders. They follow modelled procedures for operating unfamiliar technologies. They attempt to solve basic ICT problems and seek help, describing the nature of the problems as necessary.

Students become proficient at uploading and downloading material. They classify devices as input, output or control devices. They can name a range of input devices understanding that they feed information to computers. They demonstrate good posture and identify health and safety issues for using ICT. They use safe operating procedures for shutting down equipment, attaching and detaching peripheral devices.

Students recognise the vulnerability of computers and the data stored on them. They are in the habit of saving work regularly during its creation. They access saved work from appropriate folders and files as has been modelled to them. They are aware of different ways files can be stored. They start to use file menus to perform a range of functions such as printing documents and changing layout.

ICT Standard two

At each stage it is expected that students will:

	Performance criteria	Stage four	Stage five	Stage six
Inquiring with ICT	Inquire and become critical information consumers	<ul style="list-style-type: none"> conduct a search and click on returned hyperlinks recount information learned from a website understand that some information sources are more useful and reliable than others 	<ul style="list-style-type: none"> apply useful keywords and phrases when searching summarise key content points of an information source compare different sources of information relating to the same topic justifying preferences 	<ul style="list-style-type: none"> conduct different types of searches such as image search and map search quote and paraphrase material, citing sources and using quotation marks understand that not all web sources are reliable
	Inquire using appropriate strategies and tools	<ul style="list-style-type: none"> problem solve to successfully complete games and learning objects log onto a website with a username and password after being registered (with support) as a member experiment and problem solve in a simulation environment, reflecting on the outcome of decisions made 	<ul style="list-style-type: none"> complete online challenges such as web quests log onto a website as a member and personalise its content construct and experiment with simulation tools, justifying and revising decisions made 	<ul style="list-style-type: none"> describe and find locations and identify routes in online environments and maps personalise a website and log on to it regularly to update or be updated with content demonstrate successful problem solving within a simulation environment
Creating with ICT	Create, edit and share information and ideas	<ul style="list-style-type: none"> create a digital product suitable for a significant person reflect on creative work, describing the subject and use of tools understand that work can be edited, even after it has been saved 	<ul style="list-style-type: none"> create a digital product to share with an audience contribute ideas to graphic organisers and storyboards when planning to create a digital product edit own work 	<ul style="list-style-type: none"> identify what makes a digital product appealing to a specific audience create various digital products for different purposes using a range of tools share editing strategies e.g.- by showing 'before and after' examples
	Follow recognised conventions to express ideas and information	<ul style="list-style-type: none"> represent a data set in a digital product choose and change font specifications and typefaces understand that the internet is a place for sharing material and discuss some reasons why people contribute material 	<ul style="list-style-type: none"> collect data and represent it using ICT demonstrate accurate spelling, grammar, punctuation and spacing by using spell/grammar check and correct keyboard keys explain why it is wrong to copy and use material from a website without acknowledging the source 	<ul style="list-style-type: none"> represent data collections in different ways with ICT insert pictures, symbols, diagrams and text boxes and copy, cut and paste appropriately understand what the word plagiarism means

ICT Standard two

At each stage it is expected that students will:

	Performance criteria	Stage four	Stage five	Stage six
Communicating with ICT	Express identity, communicate appropriately and maintain safety and privacy	<ul style="list-style-type: none"> use positive social skills consistently in ICT communications understand that there is a stranger danger risk online keep a private password 	<ul style="list-style-type: none"> demonstrate respect for others in ICT communications relate stranger danger to online environments communicate with others online with a password protected identity 	<ul style="list-style-type: none"> interpret netiquette as 'online etiquette' and apply it to own behaviour understand that people may not be who they claim to be online use anonymous nicknames, avatars and private passwords appropriately
	Contribute to and learn from others	<ul style="list-style-type: none"> contribute to class discussions reflecting on the progress of class-to-class online sharing projects compose a message such as an email and send it with support identify and describe a range of communication devices 	<ul style="list-style-type: none"> reflect on the learning resulting from a class-to-class project compose, send and reply to messages know how to use a range of devices for communication 	<ul style="list-style-type: none"> collaborate and interact while participating in online class-to-class sharing projects use ICT tools for ongoing communications with people of personal significance identify how different communication devices are used in and have changed society
Operating ICT	Use recognised procedures to maintain a secure, safe and efficient ICT environment	<ul style="list-style-type: none"> save work regularly during its creation take initial steps in coping with the unexpected and then seek help identify a health/safety issue for an individual using a specific device 	<ul style="list-style-type: none"> recognise the vulnerability of systems and data stored on them safely correct a problem caused by a physical disconnection describe procedures for safe and healthy use of a specific device 	<ul style="list-style-type: none"> suggest solutions to protect data from accidental loss make attempts that contribute to the eventual resolution of common problems identify a community health and safety issue that arises from the widespread use of a specific device
	Understand how ICT components and systems are used to store and retrieve information	<ul style="list-style-type: none"> identify places or devices for storing data connect and disconnect devices carefully describe the function of some system components 	<ul style="list-style-type: none"> recognise, in different applications, the main menu, toolbars and control boxes be aware that devices and systems vary in their storage capacities differentiate between hardware and software 	<ul style="list-style-type: none"> understand common choices within the 'file menu' of different applications categorise some common devices as input, output and/or storage understand that within the main system unit there exists a central processor that rapidly processes instructions

Standard two

Strand I: Inquiring with ICT

Performance criteria

At each stage it is expected that students at standard **two** will:

Performance criteria	Stage four	Stage five	Stage six
Inquire and become critical information consumers	<ul style="list-style-type: none"> conduct a search and click on returned hyperlinks recount information learnt from a website understand that some information sources are more useful and reliable than others 	<ul style="list-style-type: none"> apply useful keywords and phrases when searching summarise key content points of an information source compare different sources of information relating to the same topic justifying preferences 	<ul style="list-style-type: none"> conduct different types of searches such as image search and map search quote and paraphrase material, citing sources and using quotation marks understand that not all web sources are reliable
Inquire using appropriate strategies and tools	<ul style="list-style-type: none"> problem solve to successfully complete games and learning objects log onto a website with a username and password after being registered (with support) as a member experiment and problem solve in a simulation environment, reflecting on the outcome of decisions made 	<ul style="list-style-type: none"> complete online challenges such as web quests log onto a website as a member and personalise its content construct and experiment with simulation tools, justifying and revising decisions made 	<ul style="list-style-type: none"> describe and find locations and identify routes in online environments and maps personalise a website and log on to it regularly to update or be updated with content demonstrate successful problem solving within a simulation environment

Sample learning opportunities

Arts

- Compare different ways of searching. Observe a teacher modelling searching for a famous artist, musician or dancer using a search engine and showing some of the search results and then modelling the same search in 'image search', 'video search' and 'news search'. Discuss the different search results and preferences for researching artists.
- Search for information about puppet making. Browse search results to find a puppet that could be made from class resources. With permission print the puppet making procedure and/or template and use it to create a puppet. Produce puppet shows with the puppets.
- Visit a music website for students with information about composers such as DSO Kids (www.dsokids.com/2001/composerperiods.htm) Click on a composer's name and play the example of their music provided. Select a favourite composer. Read the composers biography

(bio). Write some interesting key points about the artist without copying directly from the website. Read the summary to the class, playing the composer's music in the background.

- Research the life of a famous artist in pairs. Your partner will use books to find out about the artist while you use web searches. Make a list of interesting key points about the artist. Compare with your partner's list, identifying similarities and differences. Discuss: 'What if there were two conflicting sources of information? Which would be more likely to be correct, book sources or web sources?' Justify answers.
- Engage in online problem-solving activities and research ideas for creating art at 'Art Safari-Destination Modern Art' (www.moma.org/momalearning/artsafari/index.html). Learn about famous art works and the artists who created them, their techniques and inspiration.

English-literacy

- Learn about the land and life of the Burarra people within Questacon's Burarra Gathering (<http://burarra.questacon.edu.au/home.html>). After visiting Arnhem Land in wet or dry season and learning from the characters Danaja and his grandfather Wala Wala, write a diary entry to describe your adventures. Write the entry as if your journey was a 'real life' journey and not a 'virtual journey.' Describe the sequence of events and what you saw and learnt along the way. Write a letter to Danaja and Wala Wala thanking them for your adventure.
- Investigate the Australian postal system by visiting Aus Post Education (www.auspost.com.au/education). Write a report to explain how letters get to your house. Apply the letter writing advice on the website to your own letter writing.
- Review an educational website, describing its features, what it was designed for and the educational benefits of interacting within it. Kids Media (www.kidsmedia.com.au/index-flash.html) provides a range of educational websites.
- Contribute ideas for a weekly class blog (www.blogger.com). Buddy up with another class and share blog entries. Suggest feedback for providing to the buddy class and read and respond to feedback regarding own blog.
- Complete a KWL graphic organiser with a partner about a familiar author. For K, list 'what we know', For W, list 'what we want to know' and for L 'What we learned.' Conduct a web search and research the author to complete the final column of the KWL.

LOTE

- Access and explore learning objects relevant to the language being studied.
- Search the Internet for food items from the target country. Complete a Venn diagram to compare food eaten in the two cultures, recording labels in the target language.

Health and wellbeing

- Personalise content in a Health and wellbeing website such as Dash Champs. (www.abc.net.au/rollercoaster/dash/arena/games/champs.htm)
- Conduct a search on 'how to brush your teeth.' Consider: Did all websites give the same guidance? If not, why not? Which site is the most reliable? How could you check to see if the information on the site is reliable?
- Conduct a nutrition search for 'healthy lunch box'. List a preferred lunch idea from 5 websites. Take home to share and trial some of the new healthy lunch ideas.
- Search 'kids nutrition' websites. Each student will try a different search engine These can be found on the National Library of Australia website (www.nla.gov.au/pathways/pthw_global.html). Explore a range of websites and select a preferred one. Justify why the website is preferred over others. Everyone will take turns calling out the title of their favourite health website. The teacher will compile a list of all favourite websites. Discuss: 'Which websites came up more than once? What makes them preferred?' Also discuss the reasons why some websites were only selected

by one person. Is it because the website was of poorer quality than the others or was it only found on one search engine?

- Play an online nutrition game such as USDA's MyPyramid blast off game. (http://www.mypyramid.gov/kids/kids_game.html#) where you have to make sensible diet and exercise decisions to be successful in the game.

ICT extension

- Register as a user in a website with evolving content such as joining the G Team in the PBS Kids Fetch website (<http://pbskids.org/fetch/gteam/whatis.html>) and visit it on different occasions exploring, customising it and earning points.
- Observe the teacher modelling usage of different searches using a website such as The National Library of Australia (www.nla.gov.au/pathways/pthw_global.html) Contribute to discussing differences between different search engines.
- Write a simple question. Once the teacher has read the question to ensure grammar and spelling are correct, type it into a search engine ending it with a question mark. Browse at least three of the resulting links trying to find a website that answers the question simply. Discuss why the selected website was more useful than the others and consider how you would find out if the answer is correct.
- Create a personal avatar (the display appearance a person assumes on-screen) for exploring a website such as Kerpoof (www.kerpoof.com). Discuss and share other avatar identities students assume. Complete a PMI graphic organiser to express the Positives, Minuses and Interesting points of 'Using avatars online.' (Graphic organisers can be accessed at Enchanted Learning:- www.enchantedlearning.com/graphicorganizers/)
- Explore a virtual environment provided in a website such as Poptropica (www.poptropica.com). Following each visit, retell your explorations as if you were in a real life adventure.

Mathematics-numeracy

- Explore the 'Scale Matters' series of *Learning Federation* objects: ones, tens, hundreds and simple units with teacher guidance to investigate and discuss scale on a number line.
- Explore the 'Divide it up' series of *Learning Federation* objects: using the grouping and sharing tools to solve division problems.
- Explore the 'Balance the Cups' series of *Learning Federation* objects: 'use the rule 1', 'use the rule 2', 'use the rule 3' and 'balance the cups' to experience basic algebraic thinking with a set of scales.
- Explore the 'Pobble Arrays' series of *Learning Federation* objects: 'Find a factor', 'Find two factors' and 'Make multiples' to experience basic multiplicative thinking.
- Construct with simulation software such as 'Lego Digital Designer.' (<http://ldd.lego.com/download/>). Discuss how using simulation software might be able to assist building real models.

Science

- Explore the 'Make it Alive' series of *Learning Federation* objects incorporating - The night of the bilby: 'find food', 'get home alive', and 'safe habitat' and also incorporating - Make it Alive: 'superb parrots', 'brush-tailed rock wallabies', 'spotted tree frogs' and 'flatback turtles' to understand the habitat, threats and survival needs of endangered Australian animals and birds.
- Explore the 'Kitchen Stacker' series of *Learning Federation* objects: sorting groceries and labelling cupboards to learn about classification systems.
- Explore the 'Animal Search' series of *Learning Federation* objects: to analyse the physical features of a group of animals and then classify the animals.

- Check the weather forecasts, current temperatures and warnings on a website such as the Australian Government Bureau of Meteorology. (www.bom.gov.au/weather/tas/) Identify some other websites with changing content and websites that remain the same each time they are visited.
- Access, read and reflect on a scientist's blog such as the one provided at Questacon's Polar Passport <http://questacon.typepad.com/polarpassport/>

Society and History

- Explore online maps such as Google maps®. (<http://maps.google.com.au/>). Type your own address into the map search box. View in satellite, map and hybrid mode. Show others the route taken to get to and from school.
- Visit Dust Echoes (www.abc.net.au/dustechoes/) Explore the site, viewing and listening to Dreaming stories. Retell the content of a story and describe the main message the story. Complete some of the downloadable study-guide activities as directed by the teacher.
- Find out about the cultures and ethnic groups represented within the classroom. (Parents may assist in identifying cultural / ethnic heritage). Plan to learn more about the cultures listed, starting with one. Consider: "What do we want to know?" and "How will we find out?" considering different information sources. Put the plan into action and review sources during the inquiry. Before moving from studying one culture to studying another, discuss: "Do we need to modify our plan? Will we use the same sources again? Why or why not?"
- Use a search engine to research a country. Type the name of the country into a search engine followed by the words 'for students' to get more student-friendly results. Select four favourite websites from the returned search. For each website write down: the website name, its URL and quote a sentence from the website, inside quotation marks. (The teacher may read out the sentences without saying the name of the country to play 'Where in the world?' as an extension activity where you have to try to work out what the country is from the clues provided in the quotes, guessing from a list of countries on the board.)
- Paraphrase a paragraph from an interesting website rewriting the information 'in your own words' capturing the meaning of the content without using the same words. List the title of the website and its URL. Discuss the difference between quoting and paraphrasing. Discuss the importance of listing the URL of the website that has been quoted or paraphrased.

Vocational and Applied Learning

- Explore the 'Job Match: save the day' *Learning Federation* object and select appropriate characters to resolve emergencies.
- Discuss: If you were a business owner what would some benefits be of having your website featured in a book or magazine? What would some benefits be of having a website for your business? What might the differences be between the information on the web and the information in a book or magazine? Which information would people trust more? Where would they get the most current information from? Justify answers.
- Conduct an image search to get inspiration for design and construction using a website such as Flickr. (www.flickr.com) Type in what you will be designing with, such as 'plasticine'. Locate a favourite picture. Discuss when an image search may be more useful than a general web search. Discuss how the image could influence your design work.
- Conduct a search on 'crafts for kids'. Work in pairs to select a craft procedure to print and follow. Consider different websites, choosing one that provides simple, reliable instructions. Procedures can be compiled into a display book with finished work on display.
- Search for recipes on specific foods such as muffins. In pairs search for a favourite recipe. Compare the recipe with another pair. Decide which recipe would be easiest for everyone in the group to make. Print out the recipe. The teacher will organise ingredients and equipment. Make

the muffins. Discuss: What made some recipes better than others? What can make one website preferable to another?

Sample resources for standard two (Inquiring with ICT)

The Learning Federation <http://ecentre.education.tas.gov.au>

Learning Objects (Curriculum Corporation)

Scale matters, Divide it up, Balance the cups, Pobble Arrays, Make it alive, Kitchen stacker, Animal search, Job Match

Web Links

DSO Kids www.dsokids.com/2001/composerperiods.htm

Art Safari-Destination Modern Art www.moma.org/momalearning/artsafari/index.html

Questacon's Burarra Gathering (<http://burarra.questacon.edu.au/home.html>)

Aus Post Education www.auspost.com.au/education

Blogger www.blogger.com

Skype www.skype.com

Kids Media www.kidsmedia.com.au/index-flash.html

Kerpoof www.kerpoof.com

Enchanted Learning www.enchantedlearning.com/graphicorganizers/

Dash Champs www.abc.net.au/rollercoaster/dash/arena/games/champs.htm

National Library of Australia www.nla.gov.au/pathways/pthw_global.html

Lego Digital Designer <http://ldd.lego.com/download/> (freeware)

Australian Government bureau of Meteorology www.bom.gov.au/weather/tas/

Questacon Polar Passport <http://questacon.typepad.com/polarpassport/>

ABC's Dust Echoes www.abc.net.au/dustechoes/

PBS Kids Fetch <http://pbskids.org/fetch/gteam/whatis.html>

Poptropica www.poptropica.com

All web links accessed January 2008

Standard two

Strand 2: Creating with ICT

Performance criteria

At each stage it is expected that students at standard **two** will:

Performance criteria	Stage four	Stage five	Stage six
Create, edit and share information and ideas	<ul style="list-style-type: none">create a digital product suitable for a significant personreflect on creative work, describing the subject and use of toolsunderstand that work can be edited, even after it has been saved	<ul style="list-style-type: none">create a digital product to share with an audiencecontribute ideas to graphic organisers and storyboards when planning to create a digital productedit own work	<ul style="list-style-type: none">identify what makes a digital product appealing to a specific audiencecreate various digital products for different purposes using a range of toolsshare editing strategies e.g.- by showing 'before and after' examples
Follow recognised conventions to express ideas and information	<ul style="list-style-type: none">represent a data set in a digital productchoose and change font specifications and typefacesunderstand that the Internet is a place for sharing material and discuss some reasons why people contribute material	<ul style="list-style-type: none">collect data and represent it using ICTdemonstrate accurate spelling, grammar, punctuation and spacing by using spell/grammar check and correct keyboard keysexplain why it is wrong to copy and use material from a website without acknowledging the source	<ul style="list-style-type: none">represent data collections in different ways with ICTinsert pictures, symbols, diagrams and text boxes and copy, cut and paste appropriatelyunderstand what the word plagiarism means

Sample learning opportunities

Arts

- Explore 'Dog and Cat news' (<http://www.abc.net.au/dogandcatnews/mainpage.html>). Play problem-solving games and make a TV show within the website.
- Photograph something within the school environment. With support upload the photo and make a copy of it, saving and naming the original and the copy. Edit the copy using photo editing software. Compare the original photograph with the altered photograph and answer class questions about techniques used to produce different effects.
- Create a composition in pairs using music creation software such as 'Groovy Music'® by Sibelius software. Edit the composition together, listening to different tempos, changed pitches, melodies, dynamics, rhythms and instruments.
- Browse paintings by well-known artists. Mix and match characters and create decorative objects in NGA Dutch Dollhouse Interactive (www.nga.gov/kids/zone/dollhouse.htm).
- Use creative software such as ArtRage®, Kid Pix® or Tux Paint® to paint digital art for different family members, considering their hobbies and completing digital art related to those themes.

English-literacy

- Listen to the teacher read a story. Discuss the narrative form of the story and elements characterising its beginning or orientation, middle or complication and end or resolution. Illustrate a scene from each section of the story using ArtRage®, Tux Paint® or Kid Pix®. Save and insert into a slide show, delivering an audio retelling of the story.
- Customise and email a thankyou card to a significant person. (Teachers may seek parents email addresses before doing this activity) Use a website such as Scholastic (www.scholastic.com/kids/cards/).
- Use a mind mapping application such as Kidspiration® to generate ideas for a particular creative work such as a story or book review.
- Type ISL (individual spelling lists) words into an online 'Look-Cover-Write-Check' such as BBC's 'Ways to learn' (www.bbc.co.uk/skillswise/words/spelling/waystolearn/lookcover/game.shtml) and test self. Type same words into a Word® document and change the font to 'windings'. Test self, changing the font back to check each word. Change font, size and colour of words. Use WordArt® and insert matching pictures/clipart. Make a word search out of spelling words using a website such as Discovery Education's puzzlemaker. (<http://puzzlemaker.discoveryeducation.com/WordSearchSetupForm.asp>)
- Access a teacher-created word-processed story of a traditional tale such as 'Little Red Riding Hood'. Replace some words (objects and people) with clip art images ideal for a younger student learning to read.

LOTE

- Reinforce simple language using teacher-created ICT activities and tasks such as Hot Potatoes (<http://hotpot.uvic.ca/>).
- Customise an email thank-you or birthday card using modelled language. Discuss the intercultural understandings.

Health and wellbeing

- Use a teacher created template to create a logical and well sequenced 'My Senses' slideshow. The teacher template would for example have 5 pages with every page the same, stating-'With my eyes I like to look at flowers' with a picture of a flower inserted. Students access the slideshow and change each page to match each one of the senses inserting relevant text and pictures. Access the saved slideshow later and follow modelled steps to edit it, change background colours, and add sound and animation. Share slideshows.
- Contribute a slide for a class slideshow: 'Eat a healthy amount of these.' Decide on a healthy food. Write a title, insert a picture and conduct an Internet search to find out about the health benefits of eating the food. Paraphrase a few dot points as text in the document. View the completed slideshow. Discuss: If there was a competition to win the 'healthiest food' award which food would win it? What does having a balanced diet mean?
- Contribute to publishing and printing a class book, 'How healthy are our lunchboxes?' Take photos of individual items in your lunch box. Observe a teacher modelling uploading the photos, resizing them to make them small, inserting them onto a document and printing. Cut out the items and place them along a 'Least healthy to Most healthy continuum'.
- Write a rebus (composed of words and symbols) healthy recipe using a combination of text and clipart suitable for a kindergarten student to be able to interpret the recipe.
- Follow modelled steps to use Microsoft Publisher® or Word® to create a page about 'Healthy Me'. Information to include: name, age, photograph and a simple paragraph to describe favourite fitness activities. Experiment with Publisher® or Word® features to present the page in different styles.

ICT extension

- Refer to and complete printed worksheets from the 'Word Processing/DTP/Graphics' section of 'Primary Resources' (www.primaryresources.co.uk/ict/ict1.htm) to learn to effectively use: Microsoft Word®, Publisher® and PowerPoint® text editing, inserting pictures, cut and paste, creating tables and digital imaging.
- Observe the teacher modelling editing a photograph using photo editing software. Edit a teacher-selected photo that everybody in the class will edit independently. View all edited photos. Discuss: Which photos have been improved through editing? Share ideas and techniques resulting in effective editing.
- Take digital photos during class excursions. Explore different ways of presenting them with text such as compiling them into a PhotoStory®, a slide show, or word processed document.
- Import an original photo into ArtRage® (www.softpedia.com/get/Multimedia/Graphic/Graphic-Editors/ArtRage.shtml) following modelled steps for the procedure. Trace over the photo with paint to create a representation of it.
- Make a webpage assuming an alias such as a fairy tale character. Use an instant page creator such as Linguistic-funland's SillySite (www.linguistic-funland.com/scripts/SillySite/sillysite.cgi). Discuss: If anyone can create a website, then can we trust the information on all websites? Can we trust the information in books? Justify opinions.

Mathematics–numeracy

- Complete online data challenges such as those provided by the BBC (<http://www.bbc.co.uk/schools/ks1bitesize/numeracy/>).
- Make a number sentence with symbols in Kidspiration® or Kid Pix®. Include numbers, operation symbols and an equals symbol.
- Represent a data set in different forms using: MaxCount®.
- Use MaxCount® to create a basic spreadsheet. Type in the numbers 1-5 and insert sets of pictures representing each of the numbers. Make up a story to describe what the spreadsheet shows, e.g. "This spreadsheet shows that 5 people ate bananas for morning tea, 4 ate apples, 3 ate oranges, 2 ate pears and 1 ate a mango."
- Represent a data set in pairs using MaxCount® selecting a preferred presentation mode. All students will represent the same data set. Ideas will only be shared when all work is complete. Share representations. Different representations will be displayed. Discuss: Which representations are the most effective? Justify why and share creation techniques.

Science

- Go on a class walk. Take a photo of the local scenery. Observe the teacher modelling how to transform the photos taken by class members into a photo mosaic using an online tool such as the one provided by Flickr (<http://bighugelabs.com/flickr/mosaic.php>). Observe the mosaic and discuss what characterises the landforms in the local area. Repeat the activity on a different excursion and compare the two mosaics and landforms.
- Take a digital photo of a native animal or plant on an excursion. The broader the selection of animals or plants photographed, the better. Observe the teacher uploading photos into a known and easily accessible folder. Become an expert on the subject you photographed. Open the photo in a photo editing application. Zoom in on one part of the subject, that doesn't show the whole plant or animal. Crop away the rest of the photo following the modelled procedure. Save the zoomed in version with a different name, for example 'emu zoomed'. Observe the teacher modelling uploading the zoomed photos to an audio recording website such as Voice Thread. (<http://voicethread.com/#home>) Record information about the animal to give clues about what it is, for example: "My animal lives mostly in trees." Show the photos to a buddy class and see if

they can guess the subject. When the correct animal or plant is guessed, the full photo can be shown.

- Contribute to a class brainstorm: What is science? Observe the teacher transforming the brainstorm into a Kidspiration® mind map. In pairs, take one text box and make it into a slide using MaxShow® with text and a relevant picture/animation as a contribution to the class slideshow. As a class decide on a logical order for each slide.
- Conduct a life cycle search such as 'lifecycle of a butterfly.' Select three preferred diagrams. Compare them. Decide what they all have in common. Start a Word® or MaxWord® document. Write a heading 'Lifecycle of a butterfly.' Insert a diagram and complete it. Compare diagrams with peers'. Consider: Which diagrams are most effective in representing the life cycle?
- Grow plants and compile a PhotoStory® (www.microsoft.com/windowsxp/using/digitalphotography/photostory/default.msp) record of progress. A variety of plants should be grown by different students for comparing photo stories. Include photos, measurements, observations and predictions. Use MaxCount® to create graphs to show the plant growth.

Society and History

- Discuss reasons why people celebrate and have holidays on significant days. Brainstorm a collection of these days. In pairs describe a holiday using words and symbols with Kidspiration®. Work with another pair to compare holidays and complete a Kidspiration® Venn diagram to illustrate similarities and differences between the holidays.
- Discuss what needs and wants are. Open Kidspiration® in picture view. Start a new picture to illustrate personal needs and wants. Type 'Needs' into a main idea symbol. Add another idea symbol and type 'Wants' into it. Drag symbols from the symbol library and place them under the appropriate heading.
- Use Kidspiration® to illustrate historical knowledge. Save the diagram. After using teacher selected resources, revisit the diagram and make changes (additions, deletions, re-organising, changing symbol colours, shapes) that reflect new understanding. Use the 'Save as' function to save the new version of the diagram so the two versions can be compared.
- Discuss: How would you feel if someone copied your work, claiming that it was theirs? Consider and discuss this hypothetical: Imagine you have created an informative website and someone accesses it and puts it in a book and has the book published and makes lots of money from the book sales. How would you feel and what would you do? Learn the meaning of the word plagiarism.
- Discuss: You are learning about Australian history at school. You go home and find some useful information on the Internet. You print it out and bring it to school. Your partner who is working with you on the project starts to copy out the information word-for-word. What should you say and suggest to them? Discuss the importance of being original when working.

Vocational and Applied Learning

- Create a portfolio of published work with creative software. Include items such as cards, vouchers, signs and published and decorated poems. The collection could build up over the year and become an end of year showcase.
- Complete craft projects, producing examples such as sewing, knitting and weaving. Photograph products before taking them home. As each is completed make a slide about what it is and how it was created with text, image and sound. By the end of the year, the slideshow should document a year's craft.
- Use PhotoStory® or a similar program to document making a simple recipe such as scones from getting the ingredients and equipment ready to sampling the food. As a class, decide what type of photo would best represent each step of the recipe. Set up the photos during the cooking

process. Students not involved in cooking can be photographers. Observe the teacher uploading the photos and accessing them in PhotoStory®. Contribute to adding voice narration.

- Search a photo-sharing site such as Flickr (www.flickr.com) and type in 'kids crafts.' Imagine being the judge of the crafts photographed if they were all in a competition. Decide who would win. Consider: If you were going to make a similar craft work but wanted to make it original, what changes could you make to the photographed design? Type a procedure for your own craft innovation. Create it and photograph it. Insert the photograph into the procedure.
- Bring a favoured family recipe from a grandparent to school. Using Word, give the recipe a WordArt® heading. Insert a text box into the document and type the ingredients needed into the text box. Type the method using dot points or numbers describing each step. Make the recipe at school. Take a photo of the cooked product. With support, upload the photo and insert it into your recipe, to illustrate it. Put a border around your recipe. Print the published recipe and laminate it with support to give to the person who provided the original recipe.

Sample resources for standard two (Creating with ICT)

Web Links

ABC's Dog and Cat news www.abc.net.au/dogandcatnews/mainpage.html

NGA's Dutch Dollhouse Interactive www.nga.gov/kids/zone/dollhouse.htm

Scholastic cards www.scholastic.com/kids/cards/

Hot Potatoes <http://hotpot.uvic.ca/>

Discovery's puzzlemaker <http://puzzlemaker.discoveryeducation.com/WordSearchSetupForm.asp>

Softpedia- ArtRage www.softpedia.com/get/Multimedia/Graphic/Graphic-Editors/ArtRage.shtml

Primary Resources www.primaryresources.co.uk/ict/ict1.htm

Linguistic-funland's SillySite www.linguistic-funland.com/scripts/SillySite/sillysite.cgi

BBC's bitesize numeracy www.bbc.co.uk/schools/ks1bitesize/numeracy/

Voice Thread <http://voicethread.com/#home>

Flickr www.flickr.com

Flickr's mosaics <http://bighugelabs.com/flickr/mosaic.php>

Microsoft (Photostory)

www.microsoft.com/windowsxp/using/digitalphotography/photostory/default.mspx

BBC Ways to learn www.bbc.co.uk/skillswise/words/spelling/waystolearn/lookcover/game.shtml

All web links accessed January 2008

Software packages

Art Rage®

Kid Pix®

Tux Paint®

Groovy Music (Sibelius) ®

Kidspiration®

Microsoft Office®

Max's Toolbox®

Standard two

Strand 3: Communicating with ICT

Performance criteria

At each stage it is expected that students at standard **two** will:

Performance criteria	Stage four	Stage five	Stage six
Express identity, communicate appropriately and maintain safety and privacy	<ul style="list-style-type: none">use positive social skills consistently in ICT communicationsunderstand that there is a stranger danger risk onlinekeep a private password	<ul style="list-style-type: none">demonstrate respect for others in ICT communicationsrelate stranger danger to online environmentscommunicate with others online with a password protected identity	<ul style="list-style-type: none">interpret netiquette as 'online etiquette' and apply it to own behaviourunderstand that people may not be who they claim to be onlineuse anonymous nick-names, avatars and private passwords appropriately
Contribute to and learn from others	<ul style="list-style-type: none">contribute to class discussions reflecting on the progress of class-to-class online sharing projectscompose a message such as an email and send it with supportidentify and describe a range of communication devices	<ul style="list-style-type: none">reflect on the learning resulting from a class-to-class projectcompose, send and reply to messagesknow how to use a range of devices for communication	<ul style="list-style-type: none">collaborate and interact while participating in online class-to-class sharing projectsuse ICT tools for ongoing communications with people of personal significanceidentify how different communication devices are used in and have changed society

Sample learning opportunities

Arts

- Search for and view children's dances on a video sharing website such as YouTube (www.youtube.com). Discuss examples and in small groups decide on a favourite dance. Play it for the class, justifying why it was chosen as the favourite dance. Make suggestions for providing positive feedback to the selected video posting. Enter feedback.
- Participate in conducting a radio show using a voice recorder. Divide into pairs. Each pair decides on an issue. Questions, preferably open-ended and discussion points have to be agreed on and then a decision has to be made regarding who in the school would be the most suitable person/people to interview. After interviews have been conducted, the teacher can upload them into a class podcast using MyPodcast (www.mypodcast.com) for restricted sharing.
- Role play using mobile phones to communicate different messages. Two students sit back to back while the rest of the class observe. The person making the call draws a strip of paper from a box. It will inform them why they are making a call. It may be for example to make a complaint, to

thank the person for hosting a wonderful party, to order dinner or it may be a wrong number. Both participants role play the conversation without looking at each other. At the end of the conversation, all class members discuss the conversation and give advice to the participants for responses or questions they could have given to ensure the conversation was positive. Contribute to making a set of guidelines for phone etiquette.

- Role play a 'Stranger Danger' scenario in pairs. One child takes the role of a parent, the other of their child. The child goes to the parent asking them if it is okay to give their address and phone number to a friend they have met online. The adult gives the child Internet safety advice. Performances could be shared with the rest of the school in an Assembly.
- Participate in a song exchange international project. Invite other classes to join via a website such as epals (www.epals.com.au). Decide on and learn a favourite Australian song and perform it. The performance will be videoed and uploaded onto a video sharing site such as Youtube (www.youtube.com). The teacher will select private broadcast settings, enabling the video to be shared with invited people only. Partner classes from different countries will do the same but perform a song from their own country. Share videos. Email one another song lyrics so that the viewing class can sing along and discuss whether the song is unique to its country of origin.

English–literacy

- Participate in the official Flat Stanley project (<http://www.flatstanleyproject.net/>), an international literacy and communications project after listening to the teacher read the story 'Flat Stanley' by Jeff Brown.
- Participate in a Bunyip Project. (<http://www.ltag.education.tas.gov.au/projects/Bunyips/>) Communicate using a web forum. Pair up with a buddy class in a different school. Create a bunyip (vertical or horizontal). Agree with partner class on the joining size in the middle of the bunyip. Proceed to make half of the bunyip. Write instructions in the forum so the other class can build the other half. Use the forum to ask questions to clarify materials used and measurements. When both classes are finished the administrator (teacher) loads photos of both bunyips on the website side by side for viewing by everyone.
- Refer to a list of class email addresses to type an email to someone else in the class and send it requesting support if necessary. Add friends' email addresses to your own address book.
- Read received emails and write replies asking for support if necessary. Contribute to a discussion on email etiquette and share emails by reading examples that demonstrate good email etiquette aloud.
- Contribute to planning for a class online project. Decide on a suitable travel buddy for sending interstate or overseas. A soft toy is ideal. Name the travel buddy. Decide on a suitable location to send the travel buddy. A website such as epals may be useful in finding suitable classes to connect with (www.epals.com). The teacher will set up a blog for the travel buddy. Before sending the buddy off, give them a local adventure. Decide where to photograph the buddy during the adventure. Each class member should have a turn of photographing the buddy. Photos will be uploaded by the teacher onto the blog. Contribute to writing the travel buddy's initial blog entries. Send the travel buddy by postal mail to the other class. Access the travel buddy's blog regularly to keep track of his adventures. Send feedback and questions to the blog posts.

LOTE

- Contribute to reading and composing regular class-to-class emails between own class and a class in the target language. Discuss how to demonstrate email etiquette and cultural respect.
- Send a travel buddy to a target language class overseas. Listen to the teacher interpret and read emails or blog entries from the class hosting the travel buddy. Contribute to a blog or emails to record the adventures of a travel buddy sent from the buddy class and country.

Health and wellbeing

- Listen to a podcast for students such as the Active Kids podcast (<http://activekidz.com.au/>). Contribute to an original class podcast about staying healthy using a tool such as MyPodcast (www.mypodcast.com).
- Contribute to a 'Y chart' – sounds like, looks like, feels like to describe feeling unsafe. Discuss: How do we know when we are in a dangerous online situation? Give examples of danger online. Describe how we keep ourselves safe when communicating with others online.
- Make a set of rules, using Microsoft Publisher® for safe use of the Internet. Explore a website such as Bad Guy Patrol (www.badguypatrol.ca/default.htm) as a resource.
- Observe some ICT tools. Consider: What part of the body are they designed for? What senses are they designed for? Before the tool was invented, what type of technology was used? How has the tool made life easier? Harder? Who might have a problem using the tool? What alternative tools could be used?
- Create slide shows for students who use switching systems. Experiment to see how a mouse click, enter, page down, right arrow, down arrow or space bar, produce the next animation or slide.

ICT extension

- Log onto classroom computers with class username and password and access a favoured children's websites with username and password after registering as a user with support.
- Discuss why passwords are important to protect information, both on school computers and in the community e.g. online banking. Discuss what makes a good quality password and select and use a secure password. Use an online password checker to assess quality e.g. Neil's Toolbox Password security tester at www.neilstoolbox.com/password-tester/index.htm.
- Brainstorm items considered private at home and school, for example diaries, letters, parcels, phone numbers, ATM card passwords and bank account passwords. Consider: Why should these items be private? What are some consequences of not keeping personal information private? What information is it okay to communicate online?
- Contribute to a class list of things to find out about a buddy class. Reflect on the suggested ideas ensuring that the questions asked do not invade privacy. Frame questions and email them. Reflect on responses.
- Contribute to a brainstorm 'ways to use ICT to communicate with a buddy class.' – The teacher will make a list of the tools that are available to the class, e.g email, skype chat, mobile phone, blog, forum, video share, podcast, text message. Work down the list and follow modelled procedures for communicating with a buddy class using a different communication tool each week.

Mathematics–numeracy

- Make a model of the school and grounds (<http://earth.google.com/>). Use construction materials such as boxes or Duplo. Photograph the models. Make models of other schools as viewed from Google Earth®. Photograph these models. Email photos of the models to the school via the teacher. (The schools selected must be ones where the teacher has an email contact) inviting students to make models of both schools. Compare models. Discuss: Do the students who go to the school create the best models of their school because they can view different perspectives and angles of the school? How difficult is it to make a model of a school from a satellite photo with a birds-eye-view perspective only? Which model best represents the school? Why?
- Participate in an exchange project with a class from a different country to compare money and trade. Find classes on websites such as epals (www.epals.com). Exchange toy catalogues via postal mail. Compare received catalogues with local toy catalogues. Discuss similarities and differences between the types of toys, the prices and the currencies used. Contribute to email conversations

with the buddy class, sharing reflections and asking clarifying questions. Suggest other items to exchange to learn about money and trade.

- Conduct a search for symmetry on a photo sharing site such as Flickr (www.flickr.com). Browse the photos, identifying which are true examples of symmetry and which are asymmetrical. Photograph examples of symmetry around the school. Make a symmetry slideshow with MaxShow® and send it to another class to help them learn about symmetry.
- Decide on questions to send to another class via teacher email, for example, something that can be measured and compared, such as weather or pets owned by classmates. The teacher will email the questions inviting the class to ask their own mathematical questions. Read answers and interpret into graphs. Share the graphs with the partner class. Answer their questions.
- Decide on a survey topic. Conduct a survey using a digital recording device and use the collected data to compile a graph in MaxCount®.

Science

- Establish and maintain a class garden. Contribute to documenting the progress of the garden in a class garden blog. Take and select photos for contributing to the blog. Compare early blog entries with later blog entries. Use a free blog site such as Blogger (www.blogger.com) Share the blog with parents.
- Observe science experiments being conducted viewing teacher selected videos (A search for 'kids science experiments' is recommended.) from a video sharing website such as YouTube (www.youtube.com). Discuss each experiment. Test one of the experiments by conducting it. The teacher will upload the result as a video response to the initial clip, selecting private broadcast options.
- Email a daily weather report to a class interstate or overseas. Let them know the forecast weather as reported by the media or weather website. Then give them a detailed weather report, stating how accurate the weather forecast was. Contribute to answering questions and asking them questions about their weather. Discuss: 'How accurate are weather forecasts?' Predict the local weather and the weather where the buddy class live.
- Make a model of a prehistoric landscape. Photograph the landscape. Observe a teacher uploading the photos to a photo-sharing site such as Flickr and creating a photo mosaic out of them to serve as a lasting memento when landscapes are taken home. (<http://bighugelabs.com/flickr/mosaic.php>). When discussing prehistoric environments, refer to the mosaic. Use the mosaic to write stories combining scientific fact with fiction.
- Investigate electrical and battery-operated objects in the family home or car. List items used for communication. A toaster for example would not make it onto the list but a Tamagotchi and phone would. Make a Venn diagram distinguishing battery from electrical items with objects we can communicate with in the middle. Compare diagrams. Graph: 'The communication devices found in students' homes' using MaxCount®.

Society and History

- Visit the website ThinkQuest (www.thinkquest.org/en/) to collaborate on projects, share experiences and consider issues from multi-cultural perspectives. Communicate to learn about different places and cultures. (A school enrolment needs to be created and teachers can also create parent pages for communicating ideas with parents.) Discuss: How do we show respect when we work with others in online environments?
- Consider classroom blogs as read aloud by the teacher from a selection of classrooms. Compare and contrast what happens in different classrooms. Collaboratively use the 'Comments' facility on the blog to ask questions, make observations and comments, or use other communication tools provided on the blog to communicate with the class. Classes can be searched for on a site such as Classblogmeister (<http://classblogmeister.com/index.php>).

- Discuss the word 'netiquette' - as two words 'net' and 'etiquette'. Examine what the two words mean and how they apply to ICT use. Create a netiquette guide for a buddy class. Invite them to create one. Compare both netiquette guides. Is there anything missing from either of them? Add it. Discuss what both classes recognised as being important.
- Contribute to a discussion about the meaning of and reason for 'manners'. Discuss: Where, when and why do we use manners? Contribute to making a grid to illustrate how using manners in the classroom, home and school compare with using manners when using the Internet. Make a list of the kinds of things we should and should not do when communicating over the Internet. Using the list, make a poster/video/brochure to advise other students about good netiquette.
- Compare bullying and cyber bullying. Brainstorm rules for ICT use and compare with the school behaviour rules/policy.

Vocational and Applied Learning

- Cut out hand-held devices used for communicating from toy and electronic shop catalogues. Sort the items into toys and non-toys. Contribute to filling in a table with four columns, one for sticking the picture of the device and the other columns asking: 'What can we do with it?' 'How is it used?' and 'Who might want to use it?' Discuss: "What types of hand-held devices might be available 15 years from now?" 'If you went back 15 years ago, which devices would not have been available?'
- Interview a parent about a hand-held device they use. Ask them what the name of the device is and if the device has symbols on it or a screen that displays symbols. Find out what the symbols are for. Make a model of the hand-held device, illustrating symbols on it. Show the model to the class, pointing out the symbols, explaining what they are for and how they are used.
- Use a free online telephone service such as Skype (www.skype.com). Create an online identity with support. The teacher will record and publish the class Skype user names and students can then try to identify classmates by their user names. Students can try 'phoning' each other to see if they have guessed the identity correctly.
- Explore a virtual kids world such as The Beehive (www.iknowthat.com/com/L3?Area=Bees) communicating with others and learning with an assumed bee identity.
- Reflect on own learning by accessing and playing sound or video files that have been downloaded by the teacher (who assumes the role of roving reporter, recording sounds and /or films students working and explaining their understanding.)

Sample resources for standard two (Communicating with ICT)

Web Links

epals www.epals.com.au

Youtube www.youtube.com

MyPodcast www.mypodcast.com

The official Flat Stanley project www.flatstanleyproject.net/

Bunyip Project www.ltag.education.tas.gov.au/projects/Bunyips/

Active Kids <http://activekidz.com.au/>

Bad Guy Patrol www.badguypatrol.ca/default.htm

The Beehive www.iknowthat.com/com/L3?Area=Bees

Neil's Toolbox www.neilstoolbox.com/password-tester/index.htm

Google Earth <http://earth.google.com/>

Flickr www.flickr.com

Flickr mosaics <http://bighugelabs.com/flickr/mosaic.php>

Blogger www.blogger.com

ThinkQuest <http://www.thinkquest.org/en/>

Skype www.skype.com

Classblogmeister <http://classblogmeister.com/index.php>

All web links accessed January

2008

Software packages

Max's Toolbox®

Standard two

Strand 4: Operating ICT

Performance criteria

At each stage it is expected that students at standard **two** will:

Performance criteria	Stage four	Stage five	Stage six
Use recognised procedures to maintain a secure, safe and efficient ICT environment	<ul style="list-style-type: none"> save work regularly during its creation take initial steps in coping with the unexpected and then seek help identify a health/safety issue for an individual using a specific device 	<ul style="list-style-type: none"> recognise the vulnerability of systems and data stored on them safely correct a problem caused by a physical disconnection describe procedures for safe and healthy use of a specific device 	<ul style="list-style-type: none"> suggest solutions to protect data from accidental loss make attempts that contribute to the eventual resolution of common problems identify a community health and safety issue that arises from the widespread use of a specific device
Understand how ICT components and systems are used to store and retrieve information	<ul style="list-style-type: none"> identify places or devices for storing data connect and disconnect devices carefully describe the function of some system components 	<ul style="list-style-type: none"> recognise, in different applications, the main menu, toolbars and control boxes be aware that devices and systems vary in their storage capacities differentiate between hardware and software 	<ul style="list-style-type: none"> understand common choices within the 'file menu' of different applications categorise some common devices as input, output and/or storage understand that within the main system unit there exists a central processor that rapidly processes instructions

Sample learning opportunities

Arts

- Contribute to making a simple class dance video. Observe the video being uploaded and view the video. Consider: Which device was the output device? Which device was the input device? Which is a storage device? Share ideas before the correct answers are revealed.
- Contribute to making a class video to describe a computer. Name its visible components and describe their functions. Describe the difference between hardware and software. Explain that there is a central processor inside the computer that rapidly processes instructions. Give examples of devices that can be connected to the computer and discuss reasons for connecting them to the computer.
- Follow modelled steps to upload own photos from a camera to a computer.
- Consider: How is music stored? What devices store music? Compare ways class members' families store music.
- Open a new ArtRage® or similar creative program. Save the page initially rather than creating before saving. Click on file, then click save as and locate own folder for saving creation into. Save

the page, with a name that will suit the creation. Then create a picture, clicking on the disk icon regularly throughout the creative process. When the creation is complete and final edits saved, exit out of the program. Locate the creation in the folder in which it was saved. Seek help if necessary. Discuss the importance of saving work.

English–literacy

- Draw a diagram of the front and back of a classroom computer. Use a website such as Cool Nerds (www.coolnerds.com/Newbies/Ports/ports.htm) to label the parts of the computer. Remember different computers can look different according to their make and model but they usually have the same basic components. Discuss: What might be plugged into the computer and for what purpose?
- Use Kidspiration® to create a Mind map in small groups titled ‘Working together.’ In the middle of the Mind map should be the initials CPU, standing for central processing unit. From the CPU create a diagram to show connections between input, output and storage devices.
- Set some soft toys up in the playground. Take a digital photo of them. Write a story about the toys using a program such as Word®. Upload the photo and insert it into the document, following modelled steps. Save the story into a personal folder. Access the story and edit it. Save the edits and download the story onto a storage device or by printing it out. Discuss the steps taken to create the story explaining the role of uploading and downloading material within the process.
- Write using word processing software in a variety of text types. Access the file menu to start new documents, open existing documents, save work, change page setup i.e. portrait to landscape, to view print preview and to print work with permission.
- Follow a roster to complete some daily literacy routines such as spelling and writing on computers. Complete activities in different programs, for example focussing on PowerPoint® one month, Word® the next, Publisher® the next and PhotoStory® the next, progressing from using Max’s toolbox® to using Microsoft applications. Save all work created into personal folder. Access the folder to reflect on progress and edit writing.

LOTE

- Complete LOTE routines, such as spelling basic words and writing simple sentences in the target language using computer applications as part of daily literacy routines. Save all work created into a personal folder. Access the folder to reflect on progress and to edit work.
- Word process songs and rhymes in the target language. Access the file menu to start new documents, open existing documents, save work, change page setup i.e. portrait to landscape, to view print preview and to print work with permission.

Health and wellbeing

- Interview an adult asking them to identify one ICT health and safety issue for the use of an ICT device and describe why it is an important concern. Share interviews. The teacher will list all health and safety concerns. Determine advice for addressing each concern. Make safety posters or brochures to highlight a concern and provide advice for a specific audience.
- Conduct a search to identify health and safety risks for using specific ICT devices. Contribute to compiling a three-columned ICT health and safety table. The first column should list the risks. The second column should list a possible consequence of being exposed to the risk and the third column should list a prevention or protection strategy.
- Check to see that own posture is correct, using the class posture photo as a guide. The posture photo may be updated throughout the year as the teacher observes people sitting at computers with correct posture.
- Consult good posture advice on a website such as ‘Kids Health’s ‘Good Posture-looking after your back.’ (www.cyh.com) Pay particular attention to the advice on sitting down posture. This

advice could be printed out and displayed near computers. As students observe posture, they provide positive comments about good posture and constructive reminders about poor posture.

- Observe the teacher modelling a web search 'effects of poor posture.' Consider the content on a number of the websites. Discuss how to avoid the negative consequences of bad posture particularly when using a computer.

ICT extension

- Complete worksheets printed from the 'General Resources' section of 'Primary Resources' (www.primaryresources.co.uk/ict/ict.htm) to learn about and demonstrate understanding about: parts of a computer, ergonomics, saving and filing work.
- Contribute to brainstorming 'What a computer can do'. Consider that a computer needs a central processing unit (CPU) to enable it to complete so many functions. It is the computer chip that does the processing. Consider the CPU while reading the brainstorm list. Determine what input, output and storage devices the computer needs if any to help it do the things listed.
- Solve computer problems together. Initially try to solve ICT problems independently. Refer the problem to a teacher outlining what problem solving strategies have already been applied. The teacher demonstrates what to do to solve the problem. The teacher also takes notes describing the problem. When the class are seated altogether the teacher describes the problem to the class. Offer ideas for solving the problem. A chart of problem solving strategies will be compiled and added to for quick reference. Take turns to model solutions such as reconnecting devices and shutting down systems safely.
- Use some computer terminology when seeking help and describing problems, e.g: "The computer's frozen. I tried to unfreeze it by pressing CTRL, ALT, Delete but it's still frozen. Should I perform an illegal shutdown?"
- Research the 'most common computer problems' using the Internet. Discuss and compare whether this is relevant to problems reported in the class.

Mathematics–numeracy

- Conduct a scavenger hunt around the school to take photos of patterns in small groups. Upload the photos to the computer. Save them in all members of the group's personal folders with support. Open a Word document. Insert the photos into the document, labelling each, for example: "This is an example of a pattern from nature. It's a repetitive pattern. It's a spider web." Access the document and download it onto a storage device. Recount the process including the vocabulary: upload, download, input, output and storage.
- Complete a shape picture using auto shapes and fill colours in Microsoft Word® or Publisher®. Save the document while working. Close document at its completion. Consider: Where, besides the computer's hard drive could the picture be saved? Save and store it in three different places. (This could also include printing out a hard copy of the document and storing it as a hard copy). Discuss why it is useful to save work in more than one place.
- Classify ICT tools as input, output, processing or storage devices.
- Observe a filing cabinet. Listen to the teacher explain how documents are organised in filing cabinets. Discuss: How is a filing cabinet like 'My Computer?' What would happen if documents were saved into the wrong folders? Observe a teacher modelling how to find lost documents.
- Draw a birds-eye-view of a house that represents a computer filing system. Call the house 'My Computer.' Inside the house draw a hallway leading from the front door to multiple rooms representative of the drives. Inside rooms, mark wardrobes. These will represent files, for example: 'My Documents.' Discuss: What would you find in a wardrobe? Imagine items as clothing representing files. Label diagram with house features in one colour and computer features labelled in a different colour.

Science

- Download podcasts to learn about specific science topics on websites such as The Wild Classroom. (www.thewildclassroom.com/) Recount information learned.
- Download material from the Internet to create a themed montage, e.g: “My montage is of mammals”. I downloaded some clipart and photos from the Internet and moved them around the screen until I was happy with my design.” Listen to a teacher-lead conversation about the importance of only using copyright free material such as the clipart provided on Classroom Clipart (<http://classroomclipart.com/>). View completed montages. Discuss the pictures in each answering: Are the images scientifically accurate or are they represented as, for example, just cute characters? Justify responses.
- Consider a computer’s central processing unit (CPU). The CPU constantly performs calculations when the computer is used. Perform a Google image search for CPU. Browse the pictures of CPUs to get an idea of what is inside the system.
- Describe the transfer of energy between devices when material is being uploaded and downloaded from one device to another.
- Contribute to a class investigation: ‘How should I look after my body when using ICT?’ Learn about posture and its impact on back health and health in general. Relate this to posture when using ICT.

Society and History

- Locate your own home using maps and images on Google Earth (<http://earth.google.com/>). Explore Google Earth further to see how people have uploaded photos, videos, 3-D buildings and text to assist in defining places. View the local environment. Discuss: Would the uploaded material help people who had never been to Tasmania have a better knowledge of Tasmania?
- Brainstorm a list of output devices. Discuss: ‘life without output devices.’ What would change if we did not have access to output devices? Were there output devices long ago? Compare output devices from the past with those from the present.
- Consider how televisions have evolved. Consider: In the past, what input and output devices could be used with televisions? What input devices can be used with contemporary televisions? Will there be televisions in the future? How might they be different to the televisions of today?
- Brainstorm a list of special occasions and events we celebrate. Investigate Publisher’s ‘quick publications’. Next to each special occasion or event write the name of a suitable publication e.g. ‘party – invitation cards’ and ‘fairs – signs.’ Open personal folder. Within it create a new folder titled ‘publications’ following modelled steps. As work is published save it into the ‘publications’ folder.
- Invent a new ICT tool and create a model to represent it. Consider what it can do. Ensure its look matches its functions. Consider: Could any of the models displayed possibly be connected to each other? Describe how each tool could assist people in society and improve their lifestyles. Consider: could the tool cause problems in society? Construct an advertisement about the device to convince an audience that it is easy to use and that they need it.

Vocational and Applied Learning

- Consider: an input device transfers material to and from computers and peripherals. What devices could be classified as input devices? Consider: an output device displays or broadcasts materials. What devices could be classified as output devices? Consider: a storage device stores material. What devices could be classified as storage devices? What devices can be classified in more than one category?
- Search ‘input devices’ on a photo sharing website such as Flickr (www.flickr.com) and determine whether the displayed photos are indeed input devices. If so, what would they be most likely to

connect to? Search 'output devices' and 'storage devices' and analyse the photos in the same way. Identify devices that combine features of being input, output or storage devices.

- Use a cup system to manage classroom computer use. A green cup displayed means working fine. A yellow cup means help is needed but it is not urgent. A red cup means help requested immediately. If help is unable to be provided immediately, the one/two sand timer will provide notification of when to move to another activity until someone can help. Consider becoming a class mentor to assist other students. During help, the teacher/mentor models and explains troubleshooting or problem solving progressions.
- Determine why there are safe procedures for starting and shutting down computers and connecting and disconnecting input and output devices. Consider an ICT tool. Create guidelines for how to protect it. Describe what could happen to it if it was not properly cared for.
- Follow routine procedures for starting and shutting down computers and perform the task when assigned the job as a class monitor or with permission.

Sample resources for standard two (Operating ICT)

Web Links

Cool Nerds www.coolnerds.com/Newbies/Ports/ports.htm

Kids Health's www.cyh.com

Primary Resources www.primaryresources.co.uk/ict/ict.htm

Flickr www.flickr.com

The Wild Classroom www.thewildclassroom.com/

Classroom Clipart <http://classroomclipart.com/>

Google Earth. <http://earth.google.com/>

All web links accessed January 2008

Software packages

ArtRage®

Microsoft Office®

Max's Toolbox®

Kidspiration®

ICT Standard three

Standard three

Inquiring with ICT

Standard three students begin to conduct their own guided inquiries, progressing beyond teacher-initiated investigations. They engage in online challenges, investigating, questioning, analysing and problem solving in teams and independently. They are aware that different people have different ideas and views and readily ask others to justify their opinions. They are able to justify their own ideas. They participate in inquiries with others beyond the classroom. They personalise frequently visited social websites, customising their content and using them for valid inquiry.

Students contribute to the learning of others, designing challenges for them using tools such as online web quest builders. They conduct inquiries based on their interests and experience of the world. They begin to strategically plan for and conduct inquiries. They select and use simulation resources to model and construct real life-scenarios and use concepts for problem solving.

They search for, select and manage information. They collect information from various sources including search engines. They conduct and modify searches for specific inquiries. They visit evolving websites, reflecting on the changes observed. They learn to develop the habit of checking information sources for validity, accuracy and credibility. After considering a range of information sources, students use thinking tools such as graphic organisers to summarise and categorise facts, concepts and ideas and make connections between them. They follow effective steps for researching topics. They synthesise information from various sources to construct new understanding, form conclusions and make tentative generalisations. They are learning to cite sources and construct bibliographies.

Creating with ICT

Students working in standard three experiment before selecting, combining and manipulating ICT resources to create in all areas of the curriculum. They participate in planning for class ICT productions, contributing to graphic organisers and storyboards to aid their thinking. They use a range of presentation skills to plan and mount productions and creations for different audiences and purposes. They understand that ICT products can be shared with, and broadcast to others in different ways. Students reflect on their own work and provide others with feedback. They seek opportunities to improve their work, editing it and incorporating uploaded materials when appropriate. They consider audience feedback when evaluating their work.

Students create in a variety of ways with ICT. They adapt the layout and style of their work when word processing, incorporating features such as tables as needed. They create survey instruments and graph results. They are becoming skilled in analysing spreadsheet data and representing it in alternative forms. They experiment with elements such as images, sound, films and special effects. They assume roles in producing, editing and presenting class productions demonstrating simple production skills. They use simple design processes to create a range of cross-curricular ICT products. They present work with ordered, relevant content. They are able to create and download material without breaches of copyright or plagiarism.

Communicating with ICT

Standard three students can communicate effectively with others. They often demonstrate well-developed social skills and work effectively in teams. They are able to plan for online projects in teams. They work collaboratively within teams and with online partners. Students regularly demonstrate that they value the contributions of others. They consistently apply the principles of netiquette to their communications. They are aware of aspects of the ethical and unethical use of email, text messages, chat, bulletin boards and forums, usually applying the same manners to these environments as in face to face encounters. They follow personal and group safety rules for using communication tools and Internet environments. They identify dangers in online environments and are able to outline reasons for needing online anonymity. They can articulate privacy risks for using tools such as web cams. They use acronyms, emoticons, avatars and nicknames to express identity.

Standard three students collaborate in teams in offline and online environments. They share and manage files and use a range of ICT tools for collaboration. They use these for sharing ideas and materials. They use ICT tools to seek information from and about others, extending their cultural and ethnic awareness and knowledge and further developing their social skills. They experiment with new ways of communicating their understanding to others, trialling emerging technologies for communication.

Operating ICT

Students are aware of procedures for protecting computers and the data stored on them. They understand the extensive damage that viruses can cause and identify how to reduce the risk of infection. They protect their own data by saving work regularly and adhering to backup procedures. Students are aware that data can be stored in different ways and they are able to identify the most appropriate type of storage for particular data. They use a variety of input and output devices and understand the basic functions of ports. They understand the basic functions of a computer's components and use appropriate terminology to describe these.

Students understand how to interpret file names. They are aware that certain files have particular names and purposes.

Students possess a range of problem solving skills that they share with others. They understand the importance of ergonomics for designing workspaces and tools that help people complete their work healthily, comfortably and safely. They consistently identify and apply health and safety procedures to tools being used.

ICT Standard three

At each stage it is expected that students will:

	Performance criteria	Stage seven	Stage eight	Stage nine
Inquiring with ICT	Inquire and become critical information consumers	<ul style="list-style-type: none"> modify search terminology for information needs understand why sources need to be acknowledged i.e. for clarity and credibility, to give authors credit and so that original sources can be located set criteria for evaluating searched information 	<ul style="list-style-type: none"> retrieve information relevant to an inquiry by conducting an effective search cite all sources used when presenting research compare and evaluate information sources relating to a research topic 	<ul style="list-style-type: none"> use subject directories and describe the difference between a subject directory and a search engine create detailed bibliographies validate the content of some websites to check for accuracy
	Inquire using appropriate strategies and tools	<ul style="list-style-type: none"> complete and reflect on web challenges and learning objects access, read and reflect on evolving web content such as blogs and forums use simulation tools to trial idea and design solutions 	<ul style="list-style-type: none"> investigate, question, analyse and problem solve while playing interactive educational games contribute ideas to online networks and reflect on the contributions of others demonstrate understanding of real-world concepts by using simulations 	<ul style="list-style-type: none"> reflect on how a specific educational game/learning object can increase understanding interact in a favoured online network routinely for research reflect on the results of own solutions applied to a simulation
Creating with ICT	Create, edit and share information and ideas	<ul style="list-style-type: none"> plan and create a digital product that educates an audience create with imported materials such as photos using simple software edit different media e.g. photos, documents and podcasts 	<ul style="list-style-type: none"> plan and create digital products with logical sequences and content for specific audiences integrate materials such as images and sound files into digital products reflect on digital products, refining/editing them 	<ul style="list-style-type: none"> present a digital product to an audience and evaluate it according to their feedback integrate a range of ICT tools to plan, create and present a digital product edit sound, graphics, text and images for desired special effects
	Follow recognised conventions to express ideas and information.	<ul style="list-style-type: none"> use ICT tools to graph data incorporating titles, axis and series labels preview work, adapting its layout and style explain what software piracy is, and what is wrong with it 	<ul style="list-style-type: none"> use digital tools to collect, analyse and represent data for a specific purpose manipulate layout, style and content to create a digital product appropriate to a text type adhere to copyright regulations when creating and downloading 	<ul style="list-style-type: none"> analyse data within a spreadsheet, representing it in alternative modes demonstrate refined layout, style and content e.g. insert tables incorporating borders and shading distinguish between copyright and copyleft material and respect these protections

ICT Standard three

At each stage it is expected that students will:

	Performance criteria	Stage seven	Stage eight	Stage nine
Communicating with ICT	Express identity, communicate appropriately and maintain safety and privacy	<ul style="list-style-type: none"> acknowledge that ICT communications can be misinterpreted without face to face communication understand that once material is revealed online, it may be there to stay and may be used for reasons other than intended discuss appropriate ways to express identity in private networks and public networks 	<ul style="list-style-type: none"> identify and consistently follow online etiquette (netiquette) describe appropriate levels of personal information disclosure for specific online environments establish and use an online identity to broaden communication with friends 	<ul style="list-style-type: none"> educate others about online etiquette (netiquette) and explain associated key terms such as 'flame wars' and 'cyber bullying' outline an appropriate course of action such as 'delete and ignore' in response to inappropriate messages present an appropriate identity when participating in online networks
	Contribute to and learn from others	<ul style="list-style-type: none"> promote own community in ICT exchange projects use electronic address books use a device such as a camera or voice recorder to collect material suitable for sharing 	<ul style="list-style-type: none"> contribute to planning for, participating in and evaluating class-to-class online exchange projects send messages with relevant files attached use a variety of devices to collect and share ideas and information ethically 	<ul style="list-style-type: none"> collaborate locally and globally online, valuing the contributions of others send messages and files to groups upload appropriate material created with a digital device to an online space
Operating ICT	Use recognised procedures to maintain a secure, safe and efficient ICT environment	<ul style="list-style-type: none"> recognise 'backup' as protecting data and discuss viable backup procedures suggest solutions to common problems such as 'blank screen' or 'cannot print' identify factors that could give rise to health or safety problems associated with the use of ICT 	<ul style="list-style-type: none"> identify how ICT systems become infected with malware and describe how to reduce infection risks follow problem solving strategies to solve common ICT problems identify factors that assist people to use ICT healthily, comfortably and safely 	<ul style="list-style-type: none"> implement a set of backup procedures for personal data use an application's 'Help' facility to identify an appropriate course of action for solving specific problems understand what ergonomic design is and why it is so important for ICT environments
	Understand how ICT components and systems are used to store and retrieve information	<ul style="list-style-type: none"> implement a logical system of naming personally created files compare characteristics of common storage media understand that saving is a process of placing data in non-volatile memory where it remains after the power is disconnected 	<ul style="list-style-type: none"> organise electronic folders and files distinguish between input, output and storage devices explain some basic functions of a system's internal and external components 	<ul style="list-style-type: none"> identify the function of a file by its extension, e.g. .exe, .com and .dll all indicate programs recognise an Operating System as managing input, output, processing and storage so that they all work together describe the interrelationships between a system's main components

Standard three

Strand I: Inquiring with ICT

Performance criteria

At each stage it is expected that students at standard **three** will:

Performance criteria	Stage seven	Stage eight	Stage nine
Inquire and become critical information consumers	<ul style="list-style-type: none">• modify search terminology for information needs• understand why sources need to be acknowledged i.e. for clarity and credibility, to give authors credit and so that original sources can be located• set criteria for evaluating searched information	<ul style="list-style-type: none">• retrieve information relevant to an inquiry by conducting an effective search• cite all sources used when presenting research• compare and evaluate information sources relating to a research topic	<ul style="list-style-type: none">• use subject directories and describe the difference between a subject directory and a search engine• create detailed bibliographies• validate the content of some websites to check for accuracy
Inquire using appropriate strategies and tools	<ul style="list-style-type: none">• complete and reflect on web challenges and learning objects• access, read and reflect on evolving web content such as blogs and forums• use simulation tools to trial idea and design solutions	<ul style="list-style-type: none">• investigate, question, analyse and problem solve while playing interactive educational games• contribute ideas to online networks and reflect on the contributions of others• demonstrate understanding of real-world concepts by using simulations	<ul style="list-style-type: none">• reflect on how a specific educational game/learning object can increase understanding• interact in a favoured online network routinely for research• reflect on the results of own solutions applied to a simulation

Sample learning opportunities

Arts

- Explore the 'Sound' series of *Learning Federation* objects manipulating variables to alter sound.
- Explore the 'Making music' series of *Learning Federation* objects experimenting with a virtual stringed instrument to make sounds and create a tune. Match sound waves with the sounds produced. Replicate your tune on a musical instrument.
- Decide on an agreed artist for all class members to study. In pairs find out about the artist using a single source, different to the source anyone else is using. Read about the artist's life and find out what influenced their art. Decide on the most important or interesting fact about the artist. Discuss why it is interesting and take note of it, rewriting it into your own words. Reference the source of the information. Combine notes with all other pairs. Work together to decide which notes make similar points or connect well with each other. Discuss: Do any of the notes conflict?

Do they support each other? A week later without referring to notes taken, recount what information was remembered. Discuss: Is synthesising information from various sources a superior way of constructing new understandings than just consulting one source? Justify answer.

- Imagine your favourite artist has just written their autobiography and you have been asked to write an introduction for their book, summarising their achievements. Write the introduction, researching their life and accurately and originally presenting it as the introduction to their supposed autobiography. Validate research sources you use to ensure your introduction is reliable. Create a detailed bibliography to accompany it, citing all sources.
- Conduct a search for 'photography simulation.' Explore three different camera simulators. Discuss: How can simulations help you in the 'real world'? Could any of the simulations help you take better photos or understand your camera better?

English-literacy

- Explore the 'Trans-Tasman challenge' series of *Learning Federation* objects, exploring tourist destinations in Australia and New Zealand while decoding written and visual texts.
- Explore the 'Letters to the Editor' series of *Learning Federation* objects. Assume the role of a journalist, investigating and preparing editorials and articles for the newspaper. The development of a proposed park has left community members with differing opinions. Report on the different points of view.
- Research a question in pairs in relation to a class investigation. Highlight the key words from the question. Use the key words as a starting point to type into a search engine to find relevant information. Look at websites and skim read to see if the information is related to the question until an appropriate source is found. Paraphrase the main points that answer the question. Check more websites to see if they contain the same or similar information to validate, revise or add to the information. Cite sources of information. Join another group and compare information and sources. Discuss: Did you come up with the same information/facts? If not why would this be? What are some of the issues surrounding internet based information?
- Register as a Rollercoaster crew member (www.abc.net.au/rollercoaster/chatter/). Read forum entries and submit own forum posts. Reflect on feedback relating to own posts.
- Maintain a blog, updating it regularly and reflecting on feedback. Browse the blogs of others, submitting positive feedback or asking questions as interest is inspired.

LOTE

- Access, explore and investigate learning objects relevant to the target language.
- Use the Internet to explore authentic resources e.g. advertisements of television programs. Make comparisons between the languages/structures and cultures.

Health and wellbeing

- Explore the 'Aches and pains' series of *Learning Federation* objects. Examine health issues by completing activities and quizzes. Topics include: diabetes, asthma, cancer, epilepsy and tonsillitis. Select a topic to conduct further research on. Create a digital product as a presentation of your research. Write a detailed autobiography to accompany it.
- Explore the 'Body parts' series of *Learning Federation*. Explore the human body and its functions by completing activities and quizzes. Topics include: blood, digestive system, heart and circulation, respiratory system and skeleton.
- Consider a digital device such as an MP3 player. Determine a set of health and safety considerations for the device. Transform these into a set of health and safety guidelines to accompany the device using software such as Microsoft Publisher®.

- Play a few sports simulation games. Compare for example different types of 10 pin bowling simulations. Decide which of the games is the most 'true to the actual game.' Complete a PMI to illustrate the pluses, minuses and interesting points about playing sports simulations.
- Select a healthy diet in Appetite Attack at Zip 4 Tweens (<http://www.zip4tweens.com/games/pcg/pcg.html>), making balanced nutrition food selections to play the game successfully.

ICT extension

- Explore the nature of information on Wikipedia (<http://en.wikipedia.org/wiki/>) by searching for a topic and selecting the 'History' tab at the top of the page. Consider the nature of the changes, their frequency, who is making them and the implications for using Wikipedia as a source of information. Discuss: Who is the author of information on Wikipedia? Should Wikipedia ever be your sole source of information? How reliable is the information on Wikipedia? How could we validate information on Wikipedia? How current is the information on Wikipedia? Could we contribute or edit some information on Wikipedia?
- Visit an evolving website such as bloglines (www.bloglines.com). Customise it to receive RSS (Really Simple Syndication) feeds of interest. Access the feeds via the playlist regularly reflecting on the content. Discuss: What are the benefits of accessing RSS feeds of interest? Use the blog set to private, to record personal reflections relating to viewed RSS feeds.
- Collect own useful social (web-based) bookmarks using a website such as Del.icio.us (<http://del.icio.us/>). Register, creating username and password. Type the names of favourite websites in the search box and click 'save this' to bookmark sites.
- Consider: the success of social content (registered users determine the content and use the website to share material with others) and social networking websites (social networking web space) is determined by the people who use them. Discuss: Why are many social content and social networking websites only for people over 13 or 14? Do you agree or disagree with this rule? Some people think children should be banned from using all social content and social networking websites to protect them from online predators. Is this a good idea? Justify opinion.
- Develop a search strategy by clarifying exactly what the question is that needs to be answered: - Identify your topic. Identify and list the key concepts in the question and identify whether there are other ways that the key concepts can be expressed. Conduct your search within a subject directory and a general search engine. Compare the difference between the two.

Mathematics-numeracy

- Explore the 'School canteen' series of *Learning Federation* objects– level one: Purchase stock for an imaginary school canteen. Identify best buys. Calculate to solve money and quantities problems. Apply ratio, factors, multiples of whole numbers and measures and use recall of multiplication and division facts.
- Explore 'The vile vendor' and 'Cassowary fractions' series of *Learning Federation* objects: solving problems involving chance and probability and developing an understanding of common fractions.
- Create a rubric for evaluating 'online maths games'. Rate games that are all targeted at a similar age range. Bookmark the highest scoring games on a social bookmarking website such as Del.icio.us (www.del.icio.us.com).
- Show and tell useful maths websites. Consider a maths topic, for example perimeter. Find a website useful for increasing class understanding. Each day two students will show their selected website to the class and talk them through the website. While searching for a suitable website, search terminology should be modified to seek desired results; for instance in a search on 'perimeter', the search could be changed to 'perimeter tutorials' or 'perimeter maths' if the original search did not return adequate results.

- Conduct a search on ‘fractions.’ Browse several of the returned websites. Skim read information to quickly establish whether the content is worthy of further consideration. When the content is useful, add some dot points to a list to describe the features of a useful website, e.g.: tutorial style, colourful graphics, interactive, quick to load, simple explanations... Do any of the websites meet all of the dot points on the list? Use the list as a reference point when conducting new searches and continue to add to it over time.

Science

- Explore the ‘Down to Earth’ series of *Learning Federation* objects: using interactive tools and maps to learn about Australia’s geological history and analyse the relationship between landscapes and the formation of rocks and minerals over time. Discuss in relation to the local environment.
- Explore the ‘Frog Pond Habitat’ series of *Learning Federation* objects: investigating, gathering, synthesising and analysing data in virtual environments.
- Collaborate with a team to create a research proposal relating to a topical science issue. Get some inspiration from visiting ABC’s science news (www.abc.net.au/science/news/). Select an article that team members agree as being of interest. Read the article before completing a KWL chart, to track: ‘what we know’, ‘what we would like to know’ and ‘what we have learnt.’ Complete the first two columns leaving the ‘what we have learnt column’ to complete after undertaking further research. Present a research proposal to the class. Within the proposal include:
 - topic
 - rationale to explain the importance of the research
 - summary of ‘what we know’
 - research questions from ‘what we would like to know’
 - an explanation of how to find out answers
 - strategies for comparing and validating resources
 - useful sources and information references
 - description of roles each team member will assume
 - timeframe
 - summary of the intended outcome.

After completing the research fill in the ‘what we have learned’ column and share results.

- Locate some information online about Tasmanian Devils from a non-Australian website that details inaccuracies. Use information that has been through an editing process to prove the ‘true facts’ and to highlight the errors within the selected website. Consider: What country was the website created in? Are websites created in Tasmania about Tasmanian Devils likely to have more credibility? Why or why not?
- Participate in ABC’s science forums (www.abc.net.au/science/play/forums.htm) Compare ideas, verify understandings, discuss topical science issues and formulate and construct new scientific understanding.

Society and History

- Explore the ‘Gold Rush’ series of *Learning Federation* objects: visiting the virtual goldfields as a miner selecting and using financial resources to complete a successful dig.
- Explore the *Learning Federation* objects ‘Heroes of the air’ and ‘Medical emergency at Lonely Creek’ to discover how ‘the tyranny of distance’ impacted on the lives of Australians. After completing the learning objects discuss: the courage and vision shown by Charles Kingsford

Smith and summarise why medical emergencies were so much harder to cope with in the past than they are today.

- Research and publish a brochure for a travel company about a country you would like to know more about. Use software such as Google Earth (<http://earth.google.com/>) to explore the capital city and local sites to provide detailed information for potential visitors. Include images and information about the major tourist attractions, local eateries and places to stay.
- Create a mind map using Inspiration® or Kidspiration® illustrating the different ways we find out information. Select a current news item to investigate and use a selection of different sources as illustrated in the mindmap for the investigation. (e.g. newspaper, TV, news web site, blog, wikipedia). Compare information across sources. List the advantages and disadvantages of each source. Add this information to the mind map.
- Consider the history of the Internet, its impact on society and its possible future. Reflect on the film 'Epic 2015' (<http://epic.makingithappen.co.uk/>) by Robin Sloan for the Museum of Media History. Make an alternative digital product to highlight Internet history and a possible Internet future, discussing its impact on society.

Vocational and Applied Learning

- Explore the 'Community Enterprises' series of *Learning Federation* objects comparing the environmental, social and economic consequences of developing new enterprises in a small community. Discuss the opportunities and challenges of developing new enterprises in the community you live in.
- Use the simulation environment of Bamzooki (www.bbc.co.uk/cbbc/bamzooki/) to collaboratively design a Zook, able to perform competitively in league events such as sprint and high jump. Create a membership and download the zook kit with teacher approval. Use the Bamzooki simulator for zooks to compete. View the competition from different camera angles using the Bamzooki Motion Player. Discuss performance in relation to design decisions made.
- Visit and complete a number of webquests. Discuss and research the characteristics of good webquests. Design a webquest for a peer in a younger class. Use a free webquest creator such as '1,2,3 Your WebQuest for Free' (www.aula21.net/VVqfacil/webeng.htm).
- Compare two business simulations such as 'Lemonade Stand' and 'Farm Game' on Cool math 4 kids (<http://www.coolmath-games.com/>). Discuss which of the simulations teach the most valuable lessons about running a business. Could simulations assist business owners? Explain.
- Plan a holiday within Australia. Detail dates, locations to visit, sightseeing activities to be undertaken, transport details, accommodation and budget. Create a bibliography of websites used to plan the trip.

Sample resources for standard three (Inquiring with ICT)

The Learning Federation <http://ecentre.education.tas.gov.au>

Learning Objects (Curriculum Corporation)

Sound, Making Music, Trans-Tasman challenge, Letters to the editor, Aches and pains, Body parts, School canteen, The vile vendor, Cassowary fractions, Down to earth, Frog pond habitat, Gold Rush, Heroes of the air, Community enterprises, The enterprise

Web Links

Wikipedia <http://en.wikipedia.org/wiki/>

ABC's Roller Coaster chatter www.abc.net.au/rollercoaster/chatter/

Appetite Attack at Zip 4 Tweens www.zip4tweens.com/games/pcg/pcg.html

Bloglines www.bloglines.com

Del.icio.us <http://del.icio.us/>

ABC's science news www.abc.net.au/science/news/

ABC's science forums www.abc.net.au/science/play/forums.htm

Google Earth <http://earth.google.com/>

1,2,3 Your WebQuest for Free' www.aula21.net/VVqfacil/webeng.htm

Cool math 4 kids www.coolmath-games.com/

Epic-Making it happen <http://epic.makingithappen.co.uk/>

Bamzooki www.bbc.co.uk/cbbc/bamzooki/

All web links accessed January 2008

Software packages

Inspiration® or Kidspiration®

Microsoft Publisher®

Standard three

Strand 2: Creating with ICT

Performance criteria

At each stage it is expected that students at standard **three** will:

Performance criteria	Stage seven	Stage eight	Stage nine
Create, edit and share information and ideas	<ul style="list-style-type: none">plan and create a digital product that educates an audiencecreate with imported materials such as photos using simple softwareedit different media e.g. photos, documents and podcasts	<ul style="list-style-type: none">plan and create digital products with logical sequences and content for specific audiencesintegrate materials such as images and sound files into digital productsreflect on digital products, refining/editing them	<ul style="list-style-type: none">present a digital product to an audience and evaluate it according to their feedbackintegrate a range of ICT tools to plan, create and present a digital productedit sound, graphics, text and images for desired special effects
Follow recognised conventions to express ideas and information.	<ul style="list-style-type: none">use ICT tools to graph data incorporating titles, axis and series labelspreview work, adapting its layout and styleexplain what software piracy is, and what is wrong with it	<ul style="list-style-type: none">use digital tools to collect, analyse and represent data for a specific purposemanipulate layout, style and content to create a digital product appropriate to a text typeadhere to copyright regulations when creating and downloading	<ul style="list-style-type: none">analyse data within a spreadsheet, representing it in alternative modesdemonstrate refined layout, style and content e.g: insert tables incorporating borders and shadingdistinguish between copyright and copyleft material and respect these protections

Sample learning opportunities

Arts

- Make a spoof video of a reality TV dance show, combining features of typical reality televised dance shows. In a small group create a storyboard of an episode of the show, featuring typical formats as viewed on TV. Then share acting and technical roles. Make the video/TV episode. All episodes will be compiled into a DVD for sending home to entertain parents or another identified audience.
- Enter a competition such as those advertised by the Australian Centre for the Moving Image – ACMI (www.acmi.net.au/kids.htm) and prepare a movie, animation or game. Gain inspiration by browsing the selection of past winning entries.
- Create a digital presentation focussing on the ethical issues of downloading pirated music and videos. Research laws around the world and give examples of some consequences of being caught. Share the presentation using a resource such as the school Intranet or in a blog.
- Create a CD cover design for a fictional band using Paint® or a paint software program. Consider the ‘image’ the cover should portray for the band. Hold a CD launch presenting the

CD design to classmates. Evaluate own CD design according to feedback. Discuss: Which CD designs are particularly appealing? What makes them appealing? What do the designs say about the band? Share techniques for creating designs.

- Create a photo slideshow to depict a sequence of events in the school. Take own photos of the sequence. It could be photos of an assembly, a sports match, an excursion or photos of a friend creating something. Compile the photos in an online slideshow creator such as Bubble Share (www.bubbleshare.com/).

English-literacy

- Explore the 'Make a movie' series of *Learning Federation* objects using the 'picture in your head' visualisation strategy to decode and interpret texts in spoken and written form. Turn adventure, mystery or science fiction scripts into animated movies.
- Explore the 'Ad Campaign' series of *Learning Federation* objects creating positive advertisements for products.
- View a student created Zimmertwins (www.zimmertwins.com/) movie. Decide on a preferred style and send positive feedback to the author. Use the Collabo-write feature to edit a movie. Create a movie in Zimmertwins, adding dialogue in the speech bubbles. View the animation.
- Contribute to a class electronic newspaper. After conducting research and an excursion to the local print museum, work as a class with editors, reporters and other negotiated roles elected to create an end of year class electronic newspaper reporting on the year complete with advertising, classifieds and other sections. Select and upload materials such as photos and sound files.
- Design a talking picture book using multimedia software for a younger class. Write a first draft for the story, looking closely at the language and content of the story with a partner to ensure that it is appropriate for the target age. Divide the story into pages. Use either a drawing application to draw illustrations or scan hand drawn illustrations for the story and save them. Use software such as Microsoft PowerPoint® to produce the interactive book. Copy, cut and Paste text from original word-processed story. Use either voice recording or both to add the story to the illustrations. Trial the story with a partner, editing it if necessary. Test the book with a younger student and finalise any changes needed.

LOTE

- Contribute to a class discussion about using appropriate applications for sharing images, texts and sound, e.g. PowerPoint, PhotoStory, blogs. Share materials with a class overseas that speaks the target language.
- Create a newspaper in partnership with a class whose target language is the language being studied. Also invite other classes around the world to participate by submitting articles for the newspaper. Find classes on a website such as epals (www.epals.com) or participate in a global newspaper project such as Global School Net's Newsday project (www.globalschoolnet.org/GSH/project/newsday/). Interpret articles written in other languages and present a newspaper in the target language to share with your partner class.

Health and wellbeing

- Explore 'The first golden age of cricket' *Learning Federation* object comparing and analysing maps to see how the British Empire determined where cricket is now played. Examine virtual sporting equipment, photographs, text and archival footage. Construct a documentary newsreel using text, pictures, audio clips and film clips describing how Australia became a great cricketing nation.
- Explore the 'Beach Safety' *Learning Federation* object, selecting animated clips to illustrate responsible beach behaviour. Select a formal but friendly script to accompany it to make a video campaign script.

- Participate in making a class advertisement for staying sun safe. Include a jingle. Start by creating a storyboard in small groups. Vote for the most appropriate storyboard for transforming into an advertisement to remind other children in the school about staying safe in the sun. Transform the storyboard into a video with a jingle. Play the advertisement for other classes. Ask the classes for feedback as to whether the sun safety message was delivered effectively and if they have any ideas about how the advertisement could be edited and improved. Respond to feedback.
- Create a personal fitness timetable in Microsoft Word®. Once data about the type of exercise to be undertaken and at what time is in the table, experiment with a variety of styles to see which makes the table most effective. Apply borders and shading.
- Participate in small groups to create an Inspiration® mind map on 'Maintaining a Healthy Lifestyle.'

ICT extension

- Create products such as web pages using wizards or page creators such as Google Page Creator accessed from Google Labs (<http://labs.google.com/>).
- Create a word-processed document such as a recipe. Save the document five times under the title of recipe_1, recipe_2... For each recipe maintain the same text content. Change the appearance of the recipe in all 5 versions of it. View the recipe in print preview adapting its layout and changing the text alignment. Experiment with fonts, borders, bullets and tables. Show the five versions to a partner. Ask which they prefer and get them to justify why. Share word processing strategies you used with the partner.
- Refer to and complete printed worksheets from the 'Logo, Floor Turtles and Control' section of 'Primary Resources' (www.primaryresources.co.uk/ict/ict1.htm) to learn to use Logo.
- Create a class Wiki to bring together collective knowledge of students around a particular topic. Students can add hyperlinks as required. As a class talk about the collective knowledge and edit content as appropriate until a bank of accurate facts has been established. Use an online tool such as Wikispaces (www.wikispaces.com/).
- Browse a list of basic shortcut keys as accessed at Computer Hope.com (www.computerhope.com/shortcut.htm) within a table. Test each shortcut to see that it matches the description and to practice using it.

Mathematics–numeracy

- Explore the 'Design Brief' series of *Learning Federation* objects, learning about common fractions, decimal fractions and percentages by designing a park, a city, a farm, a school or a neighbourhood.
- Explore the 'Bridge Builder' series of *Learning Federation* objects building a virtual bridge by exploring links between spatial and number patterns, tables of values, graphs and rules expressed in words or as algebraic formulae.
- Read a graphing tutorial such as the one found at NCES (http://nces.ed.gov/nceskids/help/user_guide/graph/index.asp) covering how to create different types of graphs. Consider a data set. Decide which type of graph is the most appropriate for representing the data set. Create the graph electronically using suitable software and referring to the tutorial as a guide following the recommended procedure. Share the graph with the class using appropriate terminology such as titles, axis (x axis, y axis), series labels, the source and the legend.
- Design and conduct a survey in a small group. Decide: - What will we survey and why? -What questions will we ask? - What types of responses do we predict we will get? - Do we need to change our questions? - How will we conduct the survey for ease of data analysis? - How will we analyse the data? - How will we report survey findings? - What ICT tools will we use to enhance our results? Work through the planned steps and then share the planning process and final

results with classmates. Classmates may ask questions or make suggestions for presenting data in alternative formats.

- Sing times tables to original melodies. Record onto a voice recorder. The teacher will transform the recordings into a class podcast of times table songs using a tool such as My Podcast (www.mypodcast.com). Students with i-pods can download the podcast.

Science

- Explore the 'Energy efficient house' series of *Learning Federation* objects designing energy efficient houses for different climatic regions. Identify materials and design factors that maximise energy efficiency of a building for a given climate.
- Explore the 'Kangaroo' series of *Learning Federation* objects considering the social, economic, environmental and animal welfare consequences of harvesting kangaroos. Create a media product to promote own views on whether kangaroos should be killed for human consumption.
- Consider a proposed development. Read an equal number of arguments, for and against the development, conducting web searches to gather information from various sources. Paraphrase and list arguments for and against, highlighting scientific arguments in a bright colour. Consider the list. Which argument has more (or more convincing) scientific evidence in its favour? Create a persuasive poster using a range of ICT tools to present an argument for conservation or development. At the bottom of the poster write 'PTO for web links.' Cite research sources on the back of the poster.
- Use a search engine to find information about a scientific research question. Read the information. In a Word® document, type three main points recalled from the reading that address the initial research question. Expand on the three main points with original comments. Then go back to the original website to ensure the key facts such as dates and names are correct. Find another website to verify the information. Use a publishing application to produce a document that shares the information. Include the web addresses used for research on the finished product. Work with a partner, inviting them to read the published work and view the websites providing feedback on how original the published product is. Discuss: Have I adhered to copyright regulations?
- Visit Exploratorium (www.exploratorium.edu/ronh/weight/) to discover what weight you would be on each planet. Transform this into a spreadsheet using MaxCount® or Excel®. Read the 'What is going on?' explanation within the Exploratorium site to understand the reasons for changing weight. Represent the data in an alternative form. Compare the two documents and discuss what the best presentation method is. Discuss: What other scientific data would it be useful to represent within a spreadsheet?

Society and History

- Explore the *Learning Federation* objects 'New Homes' and 'The Journey of Hong Hai' to consider stories people who migrated to Australia from Europe after the Second World War and to consider the stories of refugees from Vietnam arriving in Australia as the first 'boat people' in 1978. Create museum exhibits to capture these experiences.
- Brainstorm: What is piracy? Compare sea pirating with software pirating. Discuss why the term pirate is used with software. Distribution of illegal software rivals legitimate software retail sales. Conduct a web search 'Stop Piracy.' Take notes, paraphrasing and quoting reasons why it is wrong to pirate software. Reference the links used. Create an Inspiration or Kidspiration® mind map within a small group to illustrate understanding.
- Browse The Australian Government's general information on copyright (www.ag.gov.au/www/agd/agd.nsf/Page/Copyright). Consider the information, re-write it and simplify it so that younger children can be introduced to copyright. Present the information as a slide-show using software such as PowerPoint®. Limit the amount of text on each page and incorporate attention-getting graphics. Show the presentation to a younger student. Ask them

about copyright at the end of the presentation to judge whether they understood the presentation. If not, modify it.

- Develop a video to demonstrate an aspect of lifestyle that is different to a buddy class's lifestyle in a different country, for example sports, recreation and food. Communicate through email or a blog to discuss and ask questions about the video sent, for example one school has a sister school in France. The French students had not heard of cricket and wanted to know what it was when it was mentioned in communications. The Cricket Association agreed to donate a cricket set to the school. Students in Tasmania created a video that demonstrated what the game of cricket is and how it is played. The video was sent to the school with the equipment. French students sought clarification and asked questions. The next project will be introducing the French students to AFL football.
- Represent *A Shift in Time!* Create a presentation that represents a change over time. The time period for the shift in time can be from seconds to days to years, depending on the chosen topic. Ideas could include: changes in décor/fashion, changes to the environment or the growth and spread of pests such as rabbits. Determine who the audience will be. Upload video, photos or audio recordings into presentations to enhance them. Ensure the presentation provides a clear sequence/shift in time before inviting the audience to view it and provide feedback.

Vocational and Applied Learning

- Use desktop publishing skills to create a range of products for a school fair or other fund raiser such as calendars, greeting cards, or customised business cards. Discuss some other ways the products could be used for enterprise.
- Create and publish a menu with software such as Publisher®, using the appropriate font/format for the target customers. Include relevant headings, descriptions of cuisine and price columns. Look at one another's menus. Give opinions on which menus make you feel like going to the restaurant and why.
- Invite parents and grandparents to send old photos to class. Restore the photos by scanning them (adjust the scan resolution so that the images are not too large), saving them as a TIF (Tagged Image Format) and then editing them with photo editing software. Return the original photos to their owners. Make a copy of the scanned photo so that the original can be referred to. Experiment with editing the photos in different ways until the original has been improved. Print out a few photos each. Back the photos and present them as a gallery putting complimentary photos together. Make a slideshow of the photos and include alternative edits of photos that have not been printed to also display at the gallery. Invite people who submitted photos along as well as advertising the gallery to all school community members on the newsletter and use this as an enterprise.
- Create work for a younger buddy. Create a personal profile for them in Kidspiration® and add to it as the year progresses. Use a program such as Publisher® to create invitations to invite them to shared activities/excursions. Use a program such as PhotoStory® to create reports of shared excursions. Share ICT skills with them, assuming the role of mentor. Email them and provide peer support for them, teaching them basic word-processing and formatting skills.
- Design a holiday in Tasmania for a family of four with a budget of \$4,000. Access current information and costing of accommodation, meals, attractions, modes of travel, justifying choices. Present holiday design as a package incorporating a variety of formats such as budgeting in a spreadsheet, attractions in a slideshow and itinerary in a Word® document within a table. Include a detailed bibliography documenting all information sources.

Sample resources for standard three (Creating with ICT)

The Learning Federation <http://ecentre.education.tas.gov.au>

Learning Objects (Curriculum Corporation)

Make a movie, Ad Campaign, The first golden age of cricket, Beach safety, Design brief, Bridge builder, Energy efficient house, Kangaroo, New Homes, The Journey of Hong Hai

Web Links

Australian Centre for the Moving Image –ACMI www.acmi.net.au/kids.htm

Bubble Share www.bubbleshare.com/

Zimmertwins www.zimmertwins.com/

Google Labs <http://labs.google.com/>

Primary Resources www.primaryresources.co.uk/ict/ict1.htm

Wikispaces www.wikispaces.com/

My Podcast www.mypodcast.com

Computer Hope.com www.computerhope.com/shortcut.htm

NCES http://nces.ed.gov/nceskids/help/user_guide/graph/index.asp

Exploratorium www.exploratorium.edu/ronh/weight/

The Australian Government (copyright) www.ag.gov.au/www/agd/agd.nsf/Page/Copyright

Epals www.epals.com

Global School Net's 'Newsday' www.globalschoolnet.org/GSH/project/newsday/

All web links accessed January 2008

Software packages

Microsoft Office®

Inspiration®

Standard three

Strand 3: Communicating with ICT

Performance criteria

At each stage it is expected that students at standard **three** will:

Performance criteria	Stage seven	Stage eight	Stage nine
Express identity, communicate appropriately and maintain safety and privacy	<ul style="list-style-type: none"> acknowledge that ICT communications can be misinterpreted without face to face communication understand that once material is revealed online, it may be there to stay and may be used for reasons other than intended discuss appropriate ways to express identity in private networks and public networks 	<ul style="list-style-type: none"> identify and consistently follow online etiquette (netiquette) describe appropriate levels of personal information disclosure for specific online environments establish and use an online identity to broaden communication with friends 	<ul style="list-style-type: none"> educate others about online etiquette (netiquette) and explain associated key terms such as 'flame wars' and 'cyber bullying' outline an appropriate course of action such as 'delete and ignore' in response to inappropriate messages present an appropriate identity when participating in online networks
Contribute to and learn from others	<ul style="list-style-type: none"> promote own community in ICT exchange projects use electronic address books use a device such as a camera or voice recorder to collect material suitable for sharing 	<ul style="list-style-type: none"> contribute to planning for, participating in and evaluating class-to-class online exchange projects send messages with relevant files attached use a variety of devices to collect and share ideas and information ethically 	<ul style="list-style-type: none"> collaborate locally and globally online, valuing the contributions of others send messages and files to groups upload appropriate material created with a digital device to an online space

Sample learning opportunities

Arts

- In small groups compose a dance for a specified piece of music suitable to perform at an aged care home or child-care centre. Decide on props and costumes to accompany the dance. Use a video camera to contribute to videoing other groups' performances and have own dance videoed. View all footage sharing ideas for improving dances so that they are entertaining for and connect with the intended audience. Incorporate suggestions into dances and re-video one another's efforts. View and discuss whether the second videoed performance was better than the first. Discuss reasons for this. Perform dances for the audience by visiting them or sending videos to them.
- Read out an email assuming different voices, to evoke different emotions and emotional responses. For example, interpret "Hi, what's up? What did you mean by your last email?" Read the line as an angry voice, as a bubbly/happy voice, a sad voice and a warm supportive and

sympathetic voice. Discuss advantages and disadvantages of ICT conversations in comparison with face to face conversations. Consider phone conversations. Does seeing someone's face on a screen make communications easier to deliver and interpret? Explain why or why not.

- Sign up to Scratch (<http://scratch.mit.edu/>), creating a login name and password. Follow the 'Getting Started Guide' initially (<http://scratch.mit.edu/files/ScratchGettingStarted.pdf>). Snap together blocks to create simple stories, games and animations and share creations on the Scratch website. Browse the galleries and forums, valuing the work and input of others and providing them with positive feedback. Discuss the design process.
- Contribute to making a movie about safety in online environments. Use a resource such as The Australian Children's Television Foundation's Noah and Saskia (www.actf.com.au/learning_centre/title_pages/nas_tp.php) for inspiration.
- Use Sketchcast (<http://sketchcast.com/>) to create a sketch and communicate it with others, with or without voice. Embed your sketchcast on your blog or home page. Discuss ideas for sketches to communicate a positive message to others.

English–literacy

- Set up an email address book, adding friends, family members and useful contacts. Write a newsletter about a learning sequence and accompanying excursion in which the class participated. Email the newsletter as an attachment and send it to family members and friends not in the same class. Discuss: Why wouldn't you send the newsletter to everyone in your address book such as useful contacts?
- Chat to friends online using Skype (www.skype.com) or similar. Establish person to person chats and group chats with classmates. Personalise pictures. Type messages to communicate with known friends and add emoticons to messages for self expression.
- Contribute to designing a text and talking e-book within a small group. Plan the content, layout, template and the ICT tools that will be used. Contribute to the content. Decide how you will share the content. Charge a small fee for people to download the content and email it to them. Within the email make suggestions for uploading the e-book to mobile devices for increased usage.
- Design a brochure for children using software such as Publisher® titled 'Staying safe online'. Explore topics such as stranger danger and protecting identity. Email the brochure as an attachment to three students. In the body of the email, ask them what they learnt from reading the brochure.
- Communicate with a class in a different country. Pair up with a student in the class and have real time conversations with them to enrich cultural awareness and compare the way words are used such as phrases, accents and localised names for things.

LOTE

- Communicate with a class who speak the target language. Have real time conversations with them or send podcasts. Discuss how language and cultural differences can sometimes affect communication.
- Design a brochure about a local event or place in the target language country and email it to target language students. Ask the students what they learnt from reading the brochure as well as asking them for feedback.

Health and wellbeing

- Investigate online health websites and services and list those that provide useful information for children. Make a list of links accompanied by a paragraph to describe each website. Title the list 'Online health services for children'. E-mail the list as an attachment to five friends who are most likely to respond to the email, from another class. Ask them if they will find the links useful and ask them to explain their reasons. Consider why the links were or were not a useful resource.

- Identify five youth services in the local area. In a small group select one that nobody else has selected. Research the service and contact them via email. Arrange for an email interview/guest speaker to come to the class to discuss all of the youth services they offer.
- Start and maintain a health and wellbeing blog using a free blog service such as Blogger (www.blogger.com/start), detailing fitness and nutrition goals and progress. Record personal best times, progress in team sports and ideas for healthy snacks. Use the access controls to decide who can read and write to the blog. Remind classmates to visit the blog and provide you with feedback via email. Help others to achieve their goals by providing them with feedback.
- Using email, survey fifteen students about their exercise/fitness routine. Ask each person to calculate the approximate amount of time spent exercising per week, including daily PE time, PE lessons, involvement in sports, walking and other physical leisure pursuits including playing physical games at home. Present the information as a graph using MaxCounto® or Excel®. Make three comments about the findings. Email the graph as an attachment to the survey participants and to a teacher.
- Brainstorm: What is netiquette? Make a checklist of features you would expect to find on a netiquette website. In partners analyse a netiquette website. Each pair should have a website to review that no one else is reviewing. See how many elements of the checklist it contains. Compare scores of the different websites. As a class look at the three websites that scored the most ticks. Decide on the most useful overall guide. Use Publisher® to make own Netiquette Guidelines to display in the classroom.

ICT extension

- Consider ways of sharing information online such as email, stating opinions in forums, entering online competitions, responding to someone's blog or website, maintaining own blog or website, sharing photos and videos online and using chat rooms or social networking websites. Consider that any information submitted may give the user a web presence so that if someone conducts a search of their name, information they have submitted online will show up not only now but perhaps for years into the future. Complete a PMI to detail the pluses, minuses and interesting points about 'having a web presence.'
- Explore the features of an email application over a fortnight. Create a four columned table using software such as Word®. In the first column, write a list to describe the features the email application offers. In the second column, write when and why the feature might be useful. In the third column detail how you will use the feature over the next fortnight. At the end of the fortnight fill in the last column with a tick or a cross to indicate whether you will continue to use that feature or not.
- Create a Venn diagram using software such as Inspiration exploring the similarities and differences between etiquette and netiquette with features of etiquette in one circle and features of netiquette in the other circle and features they share in common in the middle segment.
- Discuss issues involved with email including using appropriate language, being friendly and not bullying. Share strategies for what to do if you receive an unpleasant email.
- Use an email calendar to track upcoming events. Select a few friends to share the calendar with and activate sharing with those friends.

Mathematics–numeracy

- Type own address into Google Maps (<http://maps.google.com.au/maps>). Click the email link to send locations to classmates. View everyone's locations from the school. List the class members from those who live furthest away from the school to those who live closest. Compare list with friends' lists and share strategies for comparing distances.
- Conduct a multi-choice email poll. Ask a question related to a topical issue. Provide four possible answers as answer a/ b/ c/ and d. Ask participants to vote in the poll by selecting one of the

answers. Create a pie or bar graph out of the results using MaxCount® to show the percentage of people who voted for each of the options. Email the results back to those who voted.

- Use Art Rage® to design a class flag. Email a description of a flag to a classmate. The classmate is allowed to ask clarifying questions. Using the text descriptions only, the classmate tries to re-create the flag in Art Rage®. Compare classmate's flag with own flag. Discuss the advantages and disadvantages of using email for descriptions.
- In a small group, video traffic passing the school over 10 minutes. View the footage. Discuss the data sets that could be formed from the footage. Decide on a data set to represent in a graph. Create a graph, selecting the most appropriate graphing format to suit the data set. Other small groups will do the same process but will video the traffic at different times of the day. Groups will not discuss their data sets with other groups but will email their graphs as attachments to other class members who were not in their group. Consider all graphs. Discuss similarities and differences between the data sets and presentation modes. Share creative and analytical strategies.
- Contribute to planning an online maths project. Visit a website such as Oz Projects (<http://www.ozprojects.edna.edu.au/sibling/home>). Browse the available maths projects appropriate to the grade of the class. Join existing projects or register a new project. Consider: What data would it be interesting to compare with a class in a different location? What would be the best way of sharing the information? What would be the purpose of sharing this information? How could we report or share the project findings with others?

Science

- Participate in an epals (www.epals.com) global project. As a class decide on a listed project topic such as 'global warming' or 'natural disasters'. Connect with other classes and use the calendar to guide your activities and communications. Share the results of the project with at least one other class in the school.
- Attend an excursion to a local industry. Investigate how scientific processes and production lines are used. Draw a flow-chart diagram using software such as Word® to show how raw resources are transformed into a product. Email to a teacher as an attachment.
- Communicate with a class interstate or overseas. Both decide on a set of low-maintenance plants to grow that can be purchased from nurseries in both countries with members of both classes making suggestions of plants. Predict which environment the plant will grow best in justifying reasons. Both schools record the planting and plant growth over time with digital photos. Also communicate via a fortnightly chat to share progress. Consider variables such as how the plant was maintained and whether the plant was established in a sunny or shady spot. Use a website such as epals (www.epals.com) to find a partner class.
- On an excursion to visit and learn about a specific environment, each take a digital photograph to capture a feature of that environment. Upload the photos into a photo sharing website such as Flickr (www.flickr.com), selecting private viewing settings and making a photo mosaic from the photos. Invite a buddy class interstate or overseas to view the photos and make comments/ask questions about the environment.
- Create a science podcast for sharing with the community about inventions. Form pairs and each pair should interview two people, a child and an adult ensuring the child and adult selected have not already been interviewed. Use a voice recorder to conduct the interview collecting opinions about the best and worst ever inventions. Analyse the recordings, making a list of the best and worst inventions. Consider the information and in small groups form some conclusions about it. Select a reporter from each group to discuss the group's conclusions also as a voice recording. Observe a teacher compile the voice recordings into a podcast using an online tool with step-by-step instructions such as mypodcast.com (www.mypodcast.com). Publish it on the school website or on a class blog and invite community members to listen to it.

Society and History

- Explore the 'Balancing the options' series of *Learning Federation* objects using an interactive tool to record reactions that different interest groups have in relation to a community issue. Interpret the data, measuring and comparing the worth of different options to a range of stakeholders to present a report proposing a particular course of action.
- View the Australian Government's NetAlert 'Wise up to it' video clips. (www.wiseuptoit.com.au/videoclips.htm) and consider four victims of unethical ICT use. Discuss risks inherent in online environments and share protection strategies. Write an article, possibly for the school's newsletter to inform community members of the issues, risks and dangers associated with using the Internet. Provide advice on how to minimise risks, avoid problems and use the Internet safely and responsibly.
- Participate in a global classroom exchange project. Consider project topics and questions as found on Epals: (www.epals.com/projects/thewayweare/topics.tpl) to compare cultures, economies, environments and lifestyles. Modify the topics and questions to plan an exchange project to suit the class and visit epals (www.epals.com) again to select a suitable project partner class. Students could work with partners to locate a suitable class to partner with and justify why this group would be ideal to work with. As a class vote on favoured partner class, with a list of other suitable classes in case the first class do not want to participate.
- In a study of local heroes use a digital camera and voice recorder or a video camera to conduct interviews from a set of carefully constructed questions. Either compile the interviews as documentaries or as a slideshow presentation. Invite an audience to view the interviews and celebrate and acknowledge the contribution of local heroes. Ensure the local heroes are invited.
- In small groups, consider a form of ICT communication ensuring each group considers a different tool such as email, text messages, chat, bulletin boards or forums. Design a brochure using software such as Publisher®, detailing guidelines and rules for using the tool ethically. Compare brochures to see if similar guidelines/rules apply to different communication tools. Discuss reasons for similarities and differences.

Vocational and Applied Learning

- Consider a variety of online communication tools such as email, blogs, forums, chat rooms and virtual worlds. Consider the potential of each in contributing to completing craft, cooking or design projects. Conduct a search such as 'cooking forum,' 'cooking chat', 'cooking blog' and 'virtual cooking' to be aware of the range of resources to assist people with projects. Plan projects, incorporating online communication tools into the plans.
- Brainstorm a wish list of ICT tools for the classroom. Split into groups to complete PMI organisers to detail the pluses, minuses and interesting points about using specific ICT tools such as web cams in the classroom. Discuss any dangers identified and strategies for minimising risks. Consider the PMIs to decide as a class which tools would be the most useful and practical. List the top three tools. Contribute to identifying ways the tools could be used to improve learning. Consider fund-raising strategies for raising money to buy the tools. Find out what the tools cost to help establish a fund-raising target. Decide on a fund-raising strategy. Publicise the fund-raising initiative and accompany it with information to explain how the tools will assist students in the class with their learning.
- Brainstorm a list of all the communication tools that students in the class have used for personal, social, and learning interactions. Small groups of students reflect on one communication tool that is familiar to them and use a graphic organiser to record the functionality and other characteristics of the tool. Consider: cost, functions, who you can communicate with, the amount of people that can communicate together using it, skill level required to operate it, the type of information that can be communicated and whether it is synchronous (enables real-time communication) or asynchronous (not real-time communication. Email is an example of

asynchronous communication). After sharing work, consider scenarios where a communication tool needs to be used for a particular purpose. Select and justify the best tool for the job.

- Plan an enterprise activity. Within the planning process, consider how electronic communication tools such as email and electronic calendars will enrich the activity.
- Interview a number of students about a significant person. It may be a sporting hero, a community leader or a historical figure. From the interviews produce a Podcast using an online tool with step by step instructions such as mypodcast.com (www.mypodcast.com).

Sample resources for standard three (Communicating with ICT)

The Learning Federation <http://ecentre.education.tas.gov.au>

Learning Objects (Curriculum Corporation)

Balancing the options

Web Links

Scratch <http://scratch.mit.edu/>

SketchCast <http://sketchcast.com/>

My Podcast www.mypodcast.com

Skype www.skype.com

Blogger www.blogger.com/start

Google Maps <http://maps.google.com.au/maps>

Oz Projects www.ozprojects.edna.edu.au/sibling/home

Flickr www.flickr.com

Australian Government's NetAlert clips. www.wiseuptoit.com.au/videoclips.htm

Epals www.epals.com/

Australian Children's Television Foundation (Noah and Saskia)

www.actf.com.au/learning_centre/title_pages/nas_tp.php

All web links accessed January 2008

Software packages

Microsoft Office®

Inspiration®

Max's Toolbox®

Standard three

Strand 4: Operating ICT

Performance criteria

At each stage it is expected that students at standard **three** will:

Performance criteria	Stage seven	Stage eight	Stage nine
Use recognised procedures to maintain a secure, safe and efficient ICT environment	<ul style="list-style-type: none"> recognise 'backup' as protecting data and discuss viable backup procedures suggest solutions to common problems such as 'blank screen' or 'cannot print' identify factors that could give rise to health or safety problems associated with the use of ICT 	<ul style="list-style-type: none"> identify how ICT systems become infected with malware and describe how to reduce infection risks follow problem solving strategies to solve common ICT problems identify factors that assist people to use ICT healthily, comfortably and safely 	<ul style="list-style-type: none"> implement a set of backup procedures for personal data use an application's 'Help' facility to identify an appropriate course of action for solving specific problems understand what ergonomic design is and why it is so important for ICT environments
Understand how ICT components and systems are used to store and retrieve information	<ul style="list-style-type: none"> implement a logical system of naming personally created files compare characteristics of common storage media understand that saving is a process of placing data in non-volatile memory where it remains after the power is disconnected 	<ul style="list-style-type: none"> organise electronic folders and files distinguish between input, output and storage devices explain some basic functions of a system's internal and external components 	<ul style="list-style-type: none"> identify the function of a file by its extension, e.g. .exe, .com and .dll all indicate programs recognise an Operating System as managing input, output, processing and storage so that they all work together describe the interrelationships between a system's main components

Sample learning opportunities

Arts

- Perform a dance and have it videoed. Edit the video using video editing software making it suitable for sharing. Upload the video to a video sharing website such as YouTube (www.youtube.com) selecting private settings for sharing with a limited number of people. Download the video onto a storage device such as a mobile phone or CD. Share the video with family members and friends. Write a report to detail who you shared the video with, how you shared it, what feedback you received and how you will act on the feedback to improve future performances and also explain what input, output, processing and storage devices were involved in sharing the video.
- Take turns to use a video camera to record items at Assemblies. View the footage and discuss video and video editing techniques sharing useful strategies for operating video cameras and

editing videos effectively. Contribute to compiling an end of year 'Memorable Performances' DVD. Back up all material and discuss suitable backup methods.

- Contribute to planning for making a short class movie. Consider light, sound, vision, voice, narrative and setting. Select ICT tools. Decide who will assume responsibility for operating the tools. Those who do should also assume responsibility for sharing strategies for using the tools effectively with the rest of the class and pair up with students who assume that role in the future to assist them.
- Browse a website that explains what acronyms stand for and mean in files such as Ace Net's 'Almost every file format in the world!' (<http://www.ace.net.nz/tech/TechFileFormat.html>). Identify a common acronym for each letter of the alphabet and make a high-tech alphabet type song, for example 'D is for DOC, D. O. C. DOC stands for document DDD. E is for EXE, E.X.E. EXE stands for executable EEE' to a children's chant or other tune.
- Discuss where the best place is for storing music. Consider downloading a track from iTunes. (www.apple.com/itunes/) or another online music store. What options would you have for storing the song? Consider that once a song is downloaded from iTunes, it is stored on the computer's hard disk usually in a folder called iTunes Music. Discuss: What other types of disks and peripheral devices would you recommend storing the song on? Debate the best type of device for storing songs, for example mp3 player versus DVD versus mp3-compatible mobile phone.

English-literacy

- Visit a computer-troubleshooting forum such as Answerbag (http://www.answerbag.com/c_view/2650) Read some of the questions and answers. Find a question with accompanying answers that would be useful for the class to know about. Print it and the accompanying answers out. In pairs read the question and answers to the class with one person assuming the role of the person asking the question and others assuming the role of people who contributed answers stating their opinions. Discuss when these types of problems occur and if the advice provided was useful and worth remembering.
- Write down the exact nature of an ICT problem before seeking help to solve it. Read the problem to the person that help is being sought from. After the problem has been solved, ask the person who solved it to write how they solved the problem next to the problem description. Refer to the book when experiencing ICT problems. Use the advice provided if relevant or add to the problem list.
- Write a set of interview questions and interview the ICT trainee or Network Support Officer to find out some tips for protecting computers at home. The questions should also ask them to explain what tasks they perform to protect computer networks at school. Video the interview. Research 'protecting computers'. Discuss what information is the same as the information given in the interview. Write a set of guidelines for 'Protecting your Computer.' Reference all information sources including the name of the person interviewed. Include quotes from the person.
- View an ICT movie about data storage devices on Brainpop. (www.brainpop.com/technology/computers/datastoragedevices/preview.weml) (Free trial available or subscribe as a class or school). Take notes while watching the movie. Make a mindmap with Inspiration® illustrating understandings about data storage devices.
- Write procedures explaining how to take, upload and download digital photos. Include the phrases: input device, output device, processing device and storage device.

LOTE

- Use a digital recording device to record short dialogues in the target language. Edit using Audacity and upload to a website or the school Intranet for sharing.

- Explore the results of searching technical terms in English and the target language in a variety of search engines. Compare the information provided.

Health and wellbeing

- Research how using computers can cause musculoskeletal problems. Describe the types of musculoskeletal problems that computer use can cause and describe the types of ICT misuse that cause these problems. Create a poster with Publisher® or Word® displaying advice for preventing musculoskeletal problems.
- Research how using computers can cause eye strain. Describe the types of eye strain problems that computer use can cause and describe the types of ICT misuse that cause these problems. Create a poster with Publisher® or Word® displaying advice for preventing eye strain problems.
- Learn about the health implications of using ICT by visiting BBC School's bite-size ICT pages (www.bbc.co.uk/schools/gcsebitesize/ict/implications/3healthandsafetyrev1.shtml).
- Identify safety issues for using specific ICT tools such as mobile phones, ipods and computers. Describe the part of the body that can be adversely affected from using the ICT tool and recommend preventative strategies.
- Browse some ergonomics websites such as 'What are ergonomics?' (<http://www.typingpal.com/Ergonomics/ergonomics.swf>) Consider that the content on such websites delivers important health information that all computer users should be aware of. Create colourful posters using publishing software to remind computer users of ergonomic computer use. These will be displayed near computer workstations as a handy reference guide and healthy reminder.

ICT extension

- View the Computer Components video made by How Stuff Works titled: Computer Tour (www.youtube.com/watch?v=VWzX4MEYOBk&feature=user). It teaches about the 7 major components of computers by looking inside a computer. After watching it, write a brief definition for: motherboard, CPU, RAM, video card, power supply, hard disk and optical drive. Create an Inspiration® map to show how these computer components work together.
- Create a multiple-choice quiz based on the Howstuffworks (<http://computer.howstuffworks.com/>) website. Include questions about: hardware, peripheral devices and software. Make an accurate answer sheet. Test other students.
- Play a game that requires identifying computer parts and describing their functions. A picture of the inside of a computer will be printed out and displayed as part of the game. One can be found on Click n Learn. (www.kids-online.net/learn/clickjr/clickjr.html) One person pretends they know nothing about computers. The other is the expert. The first person asks the second person: 'What's this and what does it do?' The expert needs to give a correct answer. When a part stumps them, another expert takes over. A teacher will judge if enough information has been provided for an answer to be a successful one. Students will become better at the game as they spend more time exploring Click n Learn, clicking on the parts inside a computer to find out what each part is for.
- Consider that computer files and TV shows all have a name, location and length. Brainstorm genres that TV shows can be categorised into. Brainstorm what types of files there are. Files are named as follows: 'file name:type'. Go through a TV guide and write the TV shows as file names for example: 'The News.doc.' Underneath the list write a code interpreting what the acronyms stand for. The doc in this case would stand for documentary.
- Observe a teacher modelling how to use 'help' in various programs as well as searching for help online, using search engines and blogs to access ICT problem solving strategies.

Mathematics–numeracy

- Consider that a number system is defined by the base it uses. Binary means composed of two parts. Base ten is based on ten numerals. Conduct a search for 'binary code kids' and 'what is base ten? Compare the two systems and write a report expressing the difference between the two. Write a coded message in binary language and ask a peer to 'decode' it.
- Research: 'How many bytes in a kilobyte?' 'How many kilobytes in a megabyte?' and 'How many megabytes in a gigabyte?' Right click on desktop folders and icons. Select properties. Look at the size of each. Discuss why some are bigger than others. Record their name and size in a list from the smallest to the largest.
- Conduct a search 'bit calculator' and convert between bits, bytes, kilobytes, megabytes, and gigabytes using the online bit calculator/converter.
- Browse email inbox. Note the size of each email. Open the largest emails. What do they contain that makes them large? Compare these to smaller emails. Large emails take a long time to download and take up a large amount of designated email space. Share strategies for not sending large emails, for example not forwarding on joke emails, reducing the size of photos before sending them and thinking whether it is really necessary before attaching documents.
- Right click on 'My Computer' and click the 'Explore' option. Locate personal folder within the folders column and click on it. Details of the folder will be displayed in the right hand column. Go up to view and select the 'Details' option. Browse the contents of personal folder, noting the name, size of document, document type and date it was modified. Return to View and select 'Arrange icons by...' and arrange the icons by size. Predict what would happen if you inserted a photo into one of the documents. Insert a photo to see if the prediction is correct.

Science

- Learn how computer components work together by visiting Kaboose's Computers Connections lessons (<http://resources.kaboose.com/brain/comp-les2.html>). After reading the content, print out and complete the worksheets provided. View the other Computers Connections lessons and complete the accompanying worksheets. (10 lessons in total covering all aspects of Computer Connections.)
- Compare: How is RAM (Random access memory) like – and not like - human memory? Complete a Venn diagram to compare the two, noting common features in the interlocking circles, features specific to RAM in an outer circle and features specific to human memory also in an outer circle. Discuss diagrams in relation to the fact that saving is a process of placing data in non-volatile memory where it remains after the power is disconnected.
- Discuss: If you can buy a mini fridge now to keep a can of cordial cold that is powered by its USB compatibility, what types of things are likely to plug into USB ports in the future?
- Compare ways people think and work scientifically e.g. ideas, hunches, imagination, problem solving, investigations, theorising, decision-making, serendipity, trial and error with how people think and work to solve ICT problems.
- Visit Digg (www.digg.com). Click on the technology link. Browse some technology news stories. Locate one that combines science and ICT. Read it out to the class and explain how it relates to both areas.

Society and History

- Consider the impact of ICT on modern societies and how it has changed the world. How was information stored before computers were common in society? Interview an older person to find out. Share findings. Storage devices are getting smaller and smaller but can contain more and more information. Describe a storage device to the class describing its storage capacity and the type of information it can store. Describe how this type of material was stored before the invention of this device.

- Consider how ICT could make a difference in developing countries. Research the access of people in developing countries to technology such as phones and ICT and compare with other developed nations.
- View the YouTube video from How Stuff Works (www.youtube.com/watch?v=sxal3IzIKdE) to learn the basics of computer viruses. Determine what harm computer viruses cause to individual computers and computers in industry. Consider types of viruses and ways of protecting computers from them. Create Publisher® posters reminding people how to protect their computers from viruses.
- Consider: What does it mean to live in the 'Information Age'? Discuss the strengths and weaknesses of being dependant on the storage and communication of information. Brainstorm what types of storage and communication of information class members have come to depend upon. Interview people representative of different age groups. Do they rely on the same types of ICT tools or do different age groups prefer specific tools?
- Track the input, output and storage devices used over a day. List them. Next to each write what they connect to including whether they connect via a port. Think beyond computers. Consider hand-held devices and devices used around the home. Consider living 100 years ago. How has the reliance on input, output and storage devices changed life? Are children today advantaged or disadvantaged? Justify opinions.

Vocational and Applied Learning

- Make a set of interview questions and interview an adult about their work before ICT was common in the workplace. Within the questions, find out: What their main forms of communication were at work, how data was processed, how data was stored and how accounts were managed. Share and compare interviews with classmates.
- Assume the role of a computer monitor for a younger class in the school. A small group should be established for each early childhood class. Contribute to weekly meetings where problems that came up in the junior classes are discussed as well as strategies shared for how those problems were overcome.
- Contribute to designing a publication for print such as a cookbook. Research what type of software the printing firm requires the book to be compiled in. Get a quote for the publication, deciding on the size of the book, full-colour or black and white, how many pages and how the book should be bound. Browse the printer's website as a guide to making additional decisions. Add the cost of software required to printing costs for the amount of copies required. Assist one another to master using the software and to establish and use a template for layout consistency. Save and backup work regularly to consistent agreed on files. Compile the book and have it published.
- Publish a reference chart, detailing keyboard shortcuts for display. Use a resource such as the one provided on ABC's Roller Coaster (www.abc.net.au/rollercoaster/click/keyboard/default.htm) to define well-known short cuts. Use other sources to validate the short cuts and add to them. Refer to the chart regularly, using keyboard shortcuts to work more efficiently and share shortcuts with others to assist them problem solving and working more efficiently.
- Take a simple procedure such as a craft activity. Participate in a class competition to see who can design the best presented procedure. Change the layout and design of the publication. Work together to problem solve. Describe how you want the page to look. See if someone can share strategies for how to create that look. Continue to request help, noting the names of people contributing to the look of the document. The winner is required to share their award with the people who helped them. If no one helped them they can't accept the award. This encourages classmates to work together sharing word processing skills and solving problems together.

Sample resources for standard three (Operating ICT)

Web Links

Ace Net - 'Almost every file format in the world!' www.ace.net.nz/tech/TechFileFormat.html

itunes. www.apple.com/itunes/

Answerbag www.answerbag.com/c_view/2650

Brainpop www.brainpop.com/technology/computers/datastorgedevices/preview.weml

BBC School's www.bbc.co.uk/schools/gcsebitesize/ict/implications/3healthandsafetyrev1.shtml

Typing Pal www.typingpal.com/Ergonomics/ergonomics.swf

Youtube (How Stuff Works) www.youtube.com/watch?v=VWzX4MEYOBk&feature=user

Youtube video (How Stuff Works) www.youtube.com/watch?v=sxal3IzIKdE

Howstuffworks <http://computer.howstuffworks.com/>

Click n Learn www.kids-online.net/learn/clickjr/clickjr.html

Kaboose's Computers Connections lessons <http://resources.kaboose.com/brain/comp-les2.html>

Digg www.digg.com

ABC's Roller Coaster www.abc.net.au/rollercoaster/click/keyboard/default.htm

All web links accessed January 2008

Software packages

Microsoft Publisher®

Inspiration®

ICT Standard four

Standard four

Inquiring with ICT

Standard four students use ICT to demonstrate and extend their planning, thinking and learning. They use simulation software to model real world concepts and scenarios and test ideas for design and construction. They also use ICT to identify effective inquiry questions and determine information needs. They plan for and follow an inquiry process, facilitating the process with ICT. Students develop increasingly logical and sequenced methodologies to gather information. They ask questions about the type of information required and how best to gather and record it in appropriate formats. They use a range of search tools and techniques to locate, access, manage information, and evaluate it for accuracy, relevance, credibility and authority. They become selective about the information sources they use, understanding that some sources of information are more reliable than others. They access favoured social content websites, using them to compare, select, verify, discuss, formulate and construct understanding. Students routinely use search engines to conduct effective searches. They reflect on and evaluate sources of information using effective research strategies to analyse and synthesise information from a broad range of online sources, referencing these correctly. Students combine information from different sources, analysing and transforming information in order to develop new understanding.

Creating with ICT

Students regularly create with ICT, refining their products for specific purposes and applying recognised conventions to their work; for example they create functional spreadsheets. They create digital products, using text layout and graphics effectively. They experiment with creative ways to present their ideas to particular audiences and integrate emerging technologies. Their products generally feature a variety of applications integrated within them. Students design with ICT selecting the most appropriate tools to create for particular purposes and effects and to inform, persuade or influence audiences. They evaluate how the selection and application of ICT tools meets the purpose of a given task. They seek feedback to improve the quality of their work. They become skilled in using advanced features of favoured editing tools to refine productions.

Standard four students are aware of the major issues surrounding plagiarism and some relevant legislation. They can describe different forms of intellectual property and conform to intellectual property and copyright laws. They use ICT responsibly and apply principles that acknowledge ownership of digital information. They consistently protect personal information.

Communicating with ICT

Students communicate confidently in a variety of ways and with a range of ICT tools at standard four. They experiment with emerging technologies to communicate ideas. They use hand-held devices as well as online tools and software for effective communication.

Students collaborate with teams online to complete tasks and initiatives. They plan, participate in, and evaluate online projects. They use collaboration (groupware) tools such as email and chat for working with others. They communicate using appropriate conventions for specific ICT environments such as forums. They use social utilities safely, accurately and ethically presenting online identities. They establish trustworthy online reputations by consistently demonstrating respect and cultural sensitivity. They share materials such as photos responsibly respecting self and others. They recommend and follow netiquette guidelines for interactions.

Operating ICT

At standard four students have developed an extensive range of problem-solving strategies and demonstrate a capacity to independently select and use them. They provide others with advice regarding how to protect their computers and the information on them as well as recommending appropriate occupational health and safety guidelines for computer environments. They follow useful troubleshooting progressions to solve a broad range of common ICT problems for themselves and others.

Students file work effectively storing materials in clearly described folders and files naming and saving later versions of files. They interpret file addresses and recognise file types. They have a thorough understanding of how input, output, processing and storage devices work together. They evaluate hardware and software compatibility effectively. Standard four students describe the basic components of ICT systems and understand relationships between the basic components.

ICT Standard four

At each stage it is expected that students will:

	Performance criteria	Stage ten	Stage eleven	Stage twelve
Inquiring with ICT	Inquire and become critical information consumers	<ul style="list-style-type: none"> use a range of search methods and justify the best one for a given task use an online bibliography composer assess the relevance of an information source to a particular inquiry 	<ul style="list-style-type: none"> collect web based bookmarks relevant to inquiries cite sources in a consistent manner throughout a research presentation analyse 'hoax' websites and evaluate how convincing they are 	<ul style="list-style-type: none"> collect, organise and share web based bookmarks use preferred or recommended citing and referencing guidelines evaluate the accuracy, credibility and currency of information sources
	Inquire using appropriate strategies and tools	<ul style="list-style-type: none"> discuss the negative and positive consequences of choices made while playing an online learning game exchange reflective feedback in response to evolving web content such as blogs use simulation tools to solve problems based on 'real-world' scenarios 	<ul style="list-style-type: none"> articulate problem solving strategies used to successfully complete online learning games and challenges interact as a member of an online community to discuss, compare and clarify ideas demonstrate effective decision making in a simulation environment and reflect on how those decisions could influence 'real-world' scenarios 	<ul style="list-style-type: none"> share, reflect on and modify educational game strategies for improved results demonstrate intellectual integrity within an online community produce an inquiry-based simulation or game
Creating with ICT	Create, edit and share information and ideas	<ul style="list-style-type: none"> analyse how ICT tools were used to influence audience within a digital product use advanced features of software to create a digital product manage and edit original source materials such as photos and sound files with software 	<ul style="list-style-type: none"> identify the needs of a specific audience, manipulating digital tools to meet needs collaborate to create a multi-media presentation edit a digital product following advice from a source such as a digital editing online tutorial 	<ul style="list-style-type: none"> entertain, influence or persuade a specific audience by presenting an original digital product to them analyse the use of ICT tools and roles of people involved in creating an effective multi-media presentation use advanced functions of editing software to refine productions
	Follow recognised conventions to express ideas and information	<ul style="list-style-type: none"> create data representations following recognised conventions maintain consistency of style within a digital product seek and follow advice from intellectual property guidelines 	<ul style="list-style-type: none"> create a variety of data representations that are functional and correctly formatted layout text and graphics effectively in digital products describe different forms of Intellectual Property e.g. copyright, copyleft, patents, trademarks 	<ul style="list-style-type: none"> present a digital product that illustrates, analyses and reports data produce digital products that display a broad and refined use of conventions identify why people may seek a Creative Commons license

ICT Standard four

At each stage it is expected that students will:

	Performance criteria	Stage ten	Stage eleven	Stage twelve
Communicating with ICT	Express identity, communicate appropriately and maintain safety and privacy	<ul style="list-style-type: none"> describe ethical and unethical use of specific communication tools understand what cyber crime is and describe the impact it has on society discuss issues relating to online identity e.g it's okay to assume an avatar identity in a game but not to deceive others with a fake identity 	<ul style="list-style-type: none"> share materials responsibly respecting self and others demonstrate an ethical awareness of cyber crime by reflecting on and discussing cyber crime as reported in the media discuss how online identity might differ from one's physical persona 	<ul style="list-style-type: none"> promote and demonstrate application of netiquette protocols raise awareness about the potential harm cyber crime can cause and promote protection messages analyse and evaluate networking websites for their ability to protect user identity
	Contribute to and learn from others	<ul style="list-style-type: none"> collaborate to decide on, participate in, reflect on and share the outcomes of a suitable online exchange project describe some types of collaborative software (groupware) applications outlining when they are useful compare how materials are stored, created, distributed and shared with different devices 	<ul style="list-style-type: none"> understand how to design, create, draw participants to and moderate forums trial a range of collaborative software (groupware) tools for communicating with peers use devices ethically to create, distribute and share materials 	<ul style="list-style-type: none"> demonstrate increased understanding from participating in an online exchange project select and use appropriate collaborative software (groupware) solutions for a purpose pose concerns and opportunities when discussing the potential impact of emerging technologies on society
Operating ICT	Use recognised procedures to maintain a secure, safe and efficient ICT environment	<ul style="list-style-type: none"> state and justify school rules about data and software downloads identify what many ICT acronyms stand for and what they mean discuss ergonomic design 	<ul style="list-style-type: none"> describe potential threats to the security of systems and data recognise that many ICT issues can be divided into hardware, operating system or application issues predict trends in the impact of ICT on health and lifestyle 	<ul style="list-style-type: none"> describe some data and system protection measures such as firewalls provide advice on preventing ICT problems and upgrading systems promote best practice in occupational health and safety (OHS)
	Understand how ICT components and systems are used to store and retrieve information	<ul style="list-style-type: none"> implement a logical system of organising personal files into folders and sub-folders differentiate between software types give a comprehensive account of a system's components 	<ul style="list-style-type: none"> interpret file addresses as comprising strings of drives, folders, servers and/or network shares understand that connected devices often require device drivers to be added to the operating system to function as predicted understand 'firmware', where it resides (ROM) and how it may be periodically upgraded 	<ul style="list-style-type: none"> understand how to compress and decompress files and identify why this may be necessary discuss interoperability issues relating to hardware, software, systems and networks describe a type of network architecture such as a local area network (LAN)

Standard four

Strand I: Inquiring with ICT

Performance criteria

At each stage it is expected that students at standard **four** will:

Performance criteria	Stage ten	Stage eleven	Stage twelve
Inquire and become critical information consumers	<ul style="list-style-type: none"> use a range of search methods and justify the best one for a given task use an online bibliography composer assess the relevance of an information source to a particular inquiry 	<ul style="list-style-type: none"> collect web based bookmarks relevant to inquiries cite sources in a consistent manner throughout a research presentation analyse 'hoax' websites and evaluate how convincing they are 	<ul style="list-style-type: none"> collect, organise and share web based bookmarks use preferred or recommended citing and referencing guidelines evaluate the accuracy, credibility and currency of information sources
Inquire using appropriate strategies and tools	<ul style="list-style-type: none"> discuss the negative and positive consequences of choices made while playing an online learning game exchange reflective feedback in response to evolving web content such as blogs use simulation tools to solve problems based on 'real-world' scenarios 	<ul style="list-style-type: none"> articulate problem solving strategies used to successfully complete online learning games and challenges interact as a member of an online community to discuss, compare and clarify ideas demonstrate effective decision making in a simulation environment and reflect on how those decisions could influence 'real-world' scenarios 	<ul style="list-style-type: none"> share, reflect on and modify educational game strategies for improved results demonstrate intellectual integrity within an online community produce an inquiry-based simulation or game

Sample learning opportunities

Arts

- Encourage others to understand and appreciate the dance of a different cultural or ethnic group. Research a cultural dance. Give an oral presentation about the dance and perform it. Download music or video footage as additional support materials. Accompany the presentation with a summary report and bibliography.
- Explore and investigate the 'Key to Port Arthur' CD-ROM. Also explore and investigate the 'Samuel Cooper: putting to work' *Learning Federation* object. After navigating both resources, write a script, portray and role play characters from the resources with an accurate historical, social and political context.
- Research a musical era and compile a list of songs typical of the era. Play samples of the songs either on an instrument or via CD or MP3 files. Discuss the musical selections, justifying why the selected songs are typical of the era. Present a bibliography citing all sources used.

- Research the various influences upon a particular artist's work. Plan: how to gather information, how to validate information, how to cite information sources and how to communicate and present new understanding. Follow the plan. Present to peers, answering questions about the inquiry process.
- Conduct a search 'Art lesson' on a video sharing website such as YouTube (www.youtube.com). Browse the search results and select an art lesson of interest to follow. Post a comment or response to the video, respecting the creator/s. Produce an art lesson video for others and upload it to YouTube or another video sharing website selecting private sharing settings as appropriate.

English-literacy

- Explore the 'Catch a thief' series of *Learning Federation* objects: considering oral, written and visual evidence, skimming, scanning and making notes to predict who committed a crime. Support claims with evidence.
- Become a member of an online service that performs searching, subscribing, creating and sharing news feeds, blogs and rich web content such as Bloglines (www.bloglines.com). Regularly log in to check the latest updates, to update your own reflective blog and share content of interest with friends.
- Explore Digg (www.digg.com) Determine how Digg works and discuss the advantages and disadvantages of collectively determining the value of web content. Sign up and use Digg for a number of weeks, reading articles and exploring the utilities provided. Complete a PMI to identify the pluses, minuses and interesting points about Digg. Refer to the PMI to write a review of Digg as an information source, outlining how it works and its strengths and weaknesses. Compare it to a similar social content website.
- Browse a list of teacher- selected websites. One will be a hoax site. Establish which the hoax website is and explain how you decided. Conduct a search for 'hoax websites' and browse further hoax websites.
- Investigate a controversial issue using a current media website, television, radio or hard copy publication. 'Letters to the editor' are a useful way of keeping track of current contentious community issues. Search an issue using advanced search techniques and applying Boolean operators i.e. AND/OR/ NOT. Use AND to retrieve web content containing all searched terms. Use OR to retrieve web content containing either of the searched terms. Use NOT to exclude a word. Refer to the National Library of Australia (www.nla.gov.au/pathways/pthw_global.html) website and search a variety of the listed search engines and subject directories. Paraphrase and quote web content, referencing sources. Put information into columns representing different viewpoints and citing sources. Use this information to write an essay about the issue, referring to the various viewpoints. Create a bibliography to accompany the essay.

LOTE

- Explore learning objects in the target language. Evaluate their effectiveness for learning the target language.
- Use the Internet to find local and target language TV guides and decide which programs you want to watch and give reasons why. Compare the guides with reference to text forms, program types, content etc.

Health and wellbeing

- Explore the 'Basketball clinic' *Learning Federation* object: examine and interpret diagrams from a coaching manual, selecting appropriate text to explain each drill and sequencing drill directions in the correct order. View the animated version of the drill showing the improved team winning the match. Research and discuss the importance in following drills using specific sports as examples.

- Explore Replay (www.metrac.org/replay/index.html), a website promoting equitable, healthy relationships between youth. Discuss gender stereotypes and the damage they can cause. Identify and discuss ways of countering the problems identified and design a digital product to communicate these messages.
- Take on the role of a surgeon in a simulation throughout a knee replacement surgery. (www.edheads.org/activities/knee/) Discuss how simulations are useful Health and wellbeing and general inquiry tools and how they differ from other information sources.
- Browse the 'Health and wellbeing' section of the CSIRO website (www.csiro.au/science/Health/whatsnew.html). Select an article of interest reading only the short description of what the article is about. Complete a KWL. In the K column list what you already know about the topic. In the W column, write what you would like to know. Read the article and in the L column, write what you learned from the article.
- Conduct a web search on 'vitamins and nutrients'. Reference viewed sources. Identify and classify the sources explaining why the websites were created, for example to sell a product, as a health service or as part of a reference website. Compare the websites. Discuss: Which had the most useful and trustworthy information and which had the least useful and trustworthy information? How can we be sure? Justify decisions. Synthesise information from various sources to create an 'All you need to know about vitamins and nutrients A-Zinc guide.' Accompany the guide with a bibliography.

ICT extension

- Consider how different information sources explain different ways of referencing information. Compare three referencing systems. How are they similar and different? Design your own reference system. Compare it with classmates' systems. As a class decide on an agreed way of referencing information. Use this to create pamphlets for the library, recommending appropriate referencing steps.
- Review a social content website in pairs. Group together with another pair, comparing website reviews, e.g. comparing a review of Digg (www.digg.com) with a review of Newsvine (www.newsvine.com). Discuss differences and similarities between the websites. Swap partners to compare other social content websites and decide on a preferred social content website.
- Locate a row of social content icons as found at the bottom of some web pages. Identify icons recognised e.g. Del.icio.us (<http://del.icio.us/>) is represented by a square divided into a white, blue, black and grey quarter. Find out what the other icons/buttons represent by hovering the mouse over them or clicking on them. Make an icon guide, linking icons with the names of the social content websites they represent. Write a paragraph to provide a description of the features within each website.
- Browse the game creation list provided on Game Creation Resources. (www.ambrosine.com/resource.html) Make a game selecting one of the resources that is simple to use and free. Share the game with others, showing them the resource you used to create the game.
- Identify five websites for finding the meaning/definition of ICT jargon words. Look up 'screensaver' using the five reference websites. Identify the most interesting fact about screensavers. Which websites included this information? Try some other ICT jargon in the 5 definition websites. Discuss: Which website do you prefer for ongoing ICT reference? Justify answer.

Mathematics-numeracy

- Explore the 'Journey Planner' *Learning Federation* object. Consider transport information presented in train and bus timetables and make decisions about transport alternatives.
- Explore the 'Biscuit factory' series of *Learning Federation* objects to inquire and problem solve using ratios.

- Assume the role of a farmer in the simulation, 3rd World Farmer (www.3rdworldfarmer.com/). Make budget decisions and track annual reports to try to build wealth and ensure the survival of your family.
- Browse the Internet to buy a car. Imagine you have \$23,000 to spend. The \$23,000 must cover the cost of the car as well as any on road costs. Select a car, printing out a picture of it. Design and conduct a competition to see who got the best value for money. Present your car to the class promoting why it should win. Discuss features such as: size, fuel efficiency, age, kilometres, total cost, engine performance, dimensions, luxury features, overall condition, environmental sustainability and safety. Read favourable reviews acknowledging reviewers. Compare cars to decide on an overall winner.
- Select a company listed on the Australian Stock Exchange (ASX). Research the company, presenting a report using informative text and graphics.
 - Describe: what the company does and when it first became a listed company.
 - Chart the high, low and last sale price for the company over the last five days.
 - Describe the general trend in the All Ordinaries Index in the last six months.
 - Compare the company's share price against the All Ordinaries Index over the last six months.
 - Identify what the company's last announcement to the market was and reflect on the significance of this announcement.
 - Investigate and summarise whether the company is due to pay a dividend in the near future.
 - Announce which Global Industry Classification Standard (GICS) industry group the company belongs to.
 - Explain how this sector of the market has performed over the last day.

Science

- Explore the 'Earth rotation' and 'Lunar cycles' *Learning Federation* series of objects to outline information about the relationship between the Sun, the Earth and the Moon, the concepts of night and day, sunrise and sunset and the apparent movement of the stars, moon phases, Earth glow and the 'dark' side of the Moon.
- Join The Jason Project (www.jason.org/) to learn about Earth, life and physical science concepts. Explore simulations. Listen to science news and presentations on webcasts and podcasts. Discuss science topics on message boards and interact with researchers.
- Design a roller coaster using an online simulation tool. (www.funderstanding.com/k12/coaster/) Apply scientific principles and method to make the roller coaster work effectively. Show your successful design to others explaining the science behind its successful operation. Discuss topics such as acceleration, force, energy, inertia, momentum, velocity and weight.
- Participate in a real time data projects such as those on The Centre for Innovation in Engineering and Science Education (www.ciese.org/realtimproj.html). Analyse real-time data to study factors that affect weather and climate.
- Create a detailed research proposal for a contemporary scientific issue. Present the proposal to the class before undertaking the research, sharing the title, a summary of what the research is about, a background context for the research, useful information sources for completing the research, research methods, data to be collected, how ICT will be used, how the research will be evaluated and a conclusion stating why the research is worthwhile. Modify the plan as inspired by audience and teacher feedback.

Society and History

- Explore 'Dorothy Griffen: great Australian women', 'Patrick Brennan: the legend of Ned Kelly', 'Fiona Chiu: Chinese family tree', 'Maggie O'Rourke: the Eureka Stockade', and the 'Beth Murray' series of *Learning Federation* objects to find out about Australia's past from individual social and political perspectives.
- Visit 'Picture Australia' (<http://www.pictureaustralia.org/>) a National Library of Australia resource. View the history picture trail. Select a favourite image with at least one person in it. Consider the setting of the image. Write a diary entry for a person in the image. Include a mix of fact and fiction. Use a variety of research sources to ensure a realistic diary entry, true to the era the photo was taken in. Read your diary entry out and discuss what aspects of the entry were based on fact and which on fiction. Present a bibliography to accompany the diary entry.
- Read about IT issues on the Choice website (<http://www.choice.com.au/subCat.aspx?id=100799&p=1&catId=100245>). Select an issue suitable for a community of inquiry. Write three open-ended discussion topics about it. Present the topics to the class for discussion. Research the issue to establish informed opinions around the discussion topics and to enable you to lead informed discussions. Use an online bibliography tool such as Bibme (www.bibme.org/) to cite useful sources.
- Explore the CD-ROM: 'Key to Port Arthur'®. Select a key life character and follow their life through a series of tasks and philosophical challenges. Watch video clips about the character and answer questions accurately about them to receive a key to unlock a series of follow up tasks. Complete the tasks.
- Use the Global Education (www.globaleducation.edna.edu.au/globaled/jsp/index.jsp) website as a research tool for inquiring about global issues. Follow the 'Information Process Checklist' to assist in defining, locating, selecting, organising, presenting and evaluating information.

Vocational and Applied Learning

- Explore the 'Innovation cycle' *Learning Federation* object to identify and apply research methods to advance an innovative design solution that meets pre-determined requirements.
- Conduct various searches to find out how to make a specific product. Conduct a general search, an image search, a video search, a news search and a search within a subject directory. Once the preferred search method has been established, find the most suitable website to guide you in making the product. Discuss what different searches are useful for. Collect, organise and share useful websites on a social bookmarking website such as Del.icio.us (<http://del.icio.us/>).
- Find two items for sale on different websites. Imagine a friend has emailed you the web links asking your advice about whether they should purchase the products. Read the Australian Competition and Consumer Commission website. (www.accc.gov.au/content/index.phtml/itemId/85568/fromItemId/8135) Complete the online shopping checklist for the items and write the advice you would give your friend.
- Conduct interviews asking people to nominate websites they regularly visit. What is it about the website that makes the person want to keep visiting it? List reasons for people being drawn to particular websites. Nominate an appropriate website that meets the listed reasons. Imagine you own a business. Make a list of the features you would include in your website, to make people want to keep visiting it.
- Explore a virtual world such as Horseland (www.horseland.com). Collaborate for learning within the virtual world. Write a review of the virtual world, expressing what you learnt through collaboration and describing opportunities available within the world and whether the virtual world can influence productivity offline.

Sample resources for standard four (Inquiring with ICT)

The Learning Federation <http://ecentre.education.tas.gov.au>

Learning Objects (Curriculum Corporation)

Catch a thief, Basketball clinic, Journey Planner, Biscuit factory, Earth rotation, Lunar cycles, Samuel Cooper: putting to work, Dorothy Griffen: great Australian women, Patrick Brennan: the legend of Ned Kelly, Fiona Chiu: Chinese family tree, Maggie O'Rourke: the Eureka Stockade, Beth Murray, Innovation cycle

Web Links

You tube www.youtube.com

Bloglines www.bloglines.com

Digg www.digg.com

Choice website www.choice.com.au/subCat.aspx?id=100799&p=1&catId=100245

Bibme www.bibme.org/

Edheads www.edheads.org/activities/knee/

Replay www.metrac.org/replay/index.html

CSIRO website www.csiro.au/science/Health/whatsnew.html

Newsvine www.newsvine.com

Del.ici.ous <http://del.icio.us/>

Game Creation Resources www.ambrosine.com/resource.html

3rd World Farmer www.3rdworldfarmer.com/

The Jason Project www.jason.org/

Funderstanding www.funderstanding.com/k12/coaster/

Australian Government bureau of Meteorology www.bom.gov.au/weather/tas/

Picture Australia www.pictureaustralia.org/

Global Education www.globaleducation.edna.edu.au/globaled/jsp/index.jsp

National Library of Australia www.nla.gov.au/pathways/pthw_global.html

Horseland www.horseland.com

Australian Competition and Consumer Commission website www.accc.gov.au

All web links accessed January 2008

Software packages

Key to Port Arthur®

Standard four

Strand 2: Creating with ICT

Performance criteria

At each stage it is expected that students at standard **four** will:

Performance criteria	Stage ten	Stage eleven	Stage twelve
Create, edit and share information and ideas	<ul style="list-style-type: none"> analyse how ICT tools were used to influence audience within a digital product use advanced features of software to create a digital product manage and edit original source materials such as photos and sound files with software 	<ul style="list-style-type: none"> identify the needs of a specific audience, manipulating digital tools to meet needs collaborate to create a multi-media presentation edit a digital product following advice from a source such as a digital editing online tutorial 	<ul style="list-style-type: none"> entertain, influence or persuade a specific audience by presenting an original digital product to them analyse the use of ICT tools and roles of people involved in creating an effective multi-media presentation use advanced functions of editing software to refine productions
Follow recognised conventions to express ideas and information	<ul style="list-style-type: none"> create data representations following recognised conventions maintain consistency of style within a digital product seek and follow advice from intellectual property guidelines 	<ul style="list-style-type: none"> create a variety of data representations that are functional and correctly formatted layout text and graphics effectively in digital products describe different forms of Intellectual Property e.g. copyright, copyleft, patents, trademarks 	<ul style="list-style-type: none"> present a digital product that illustrates, analyses and reports data produce digital products that display a broad and refined use of conventions identify why people may seek a Creative Commons license

Sample learning opportunities

Arts

- Plan a dance to be filmed and shared with parents. As well as planning the movement structure and sequences, plan the technical elements of the performance incorporating: light, sound, media equipment and editing tools. Decide which tools will be used and how they will be used. View the filmed dance, evaluating how appropriate the presentation format was for showcasing to parents.
- Create a film under 7 minutes duration to enter in a short film competition such as Tropfest Junior www.tropjr.com.au/. Follow all entry guidelines and ensure the film is entertaining for children aged 15 years and under.
- Compare technology used in advertisements on Australian Screen (<http://australianscreen.com.au/>). Search the advertisements by year. View one advertisement per decade represented. Compare the advertisements viewed with advertisements on television

today. Discuss how advertising has changed across the decades in Australia and the role technology has played in the changes. Remake an old advertisement giving it a modern twist.

- Assume the role of a television travel show host. Produce a segment for the show on the 'Pacific North West Tree Octopus,' (<http://zapatopi.net/treeoctopus/>) persuading members of the public to visit the Pacific North West in the hope of seeing the Tree Octopus in its natural surrounds. In the travel documentary, interview a local tourist guide, a local environmentalist, a local tourist operator and others telling of their 'sightings'. Interview each of the people on the importance of the 'Tree Octopus' and why people should visit the area. Evaluate the segment on its ability to persuade members of the public to visit the area.
- Seek the permission of a group of musicians to digitally record a music performance and use software such as WavePad (http://www.nch.com.au/wavepad/index_b.html) or Audacity (<http://audacity.sourceforge.net/>) to mix and alter the performance to create a more commercial product. Provide the original performers with the original and edited recording. Ask them to provide you with feedback.

English-literacy

- Explore the 'Finish the story' series of *Learning Federation* objects to assist a book publisher to complete a popular culture story that is designed to appeal to a particular audience.
- Explore the 'Online news' series of *Learning Federation* objects to explore how text choices can have impact in an online news page.
- Select and use tools to create a digital mini autobiography suitable for sharing with classmates to get to know each other better. After viewing all class autobiographies, asking people questions and give them feedback about content and tool selection. Evaluate own content, selection and application of tools.
- Create a digital story using online tools such as those provided by Story Creator 2 (<http://myths.e2bn.org/create/>).
- Represent an original poem in a number of different ways with word processing software. Ask classmates for feedback regarding which version most suits the poem. Discuss reasons why. Share word processing layout and design strategies.

LOTE

- Put yourself in the picture by superimposing photos of yourself onto photos from the target country and adding speech bubbles or captions in the target language
- Conduct a survey, recording results on an Excel® spreadsheet, analysing and reporting results in the target language.

Health and wellbeing

- Create a Health and wellbeing advice website using a program such as Publisher®. The website will not go online but a different student created website will be featured and discussed as part of weekly Health and wellbeing lessons. The website must promote health and wellbeing to your classmates. Research health and wellbeing websites for inspiration and include web links to useful websites. Ensure your website contributes to your classmates' general health and wellbeing and that it conforms to intellectual property and copyright laws.
- Make a pictorial tool to make people aware of nutrition in foods. Use photos of food or clipart to represent particular foods. Link the foods with nutritional information such as fat content, sugar content and salt content. Layout the text and graphics to make it easier for people to compare foods.
- Create a fitness calendar using online tools such as those provided by Centres for Disease Control and Prevention (www.bam.gov/sub_physicalactivity/index.html) to plan a personalised

activity roster. Plan in groups so that you can support each other by completing some of the activities together.

- Create a digital story about bullying following the seven steps outlined on DigiTales. (www.digitales.us/resources/seven_steps.php) Evaluate how you implemented each step and whether the digital story was effective in potentially assisting victims to overcome bullying.
- Plan to create an interactive kiosk style PowerPoint® presentation to promote daily fitness for teenagers. Incorporate action buttons to make the presentation interactive, giving users choices about information and activities they can investigate. Conduct a search for 'kiosk style slideshow presentation' to locate and apply strategies to make the presentation interactive.

ICT extension

- Refer to and complete printed worksheets from the 'Spreadsheets and Databases' section of 'Primary Resources' (www.primaryresources.co.uk/ict/ict1.htm) to learn to effectively create and use spreadsheets and databases.
- Open an original text document. Save it under a different name. Manipulate the text changing fonts and margins. Experiment with menu features of the word processing software. Add tables and graphics. Continue editing the document until it is different from and an improvement on the original. Show the original and edited document to a classmate or teacher, justifying why the edited version is an improvement on the original document. Consider feedback and answer questions, sharing word processing strategies.
- Read the questions on Cyberbee (www.cyberbee.com/cb_copyright.swf). Before clicking on the answers, have a go at answering them yourself. Click on the answer to see if you were correct. Create a digital copyright related quiz for the class.
- Create an interactive presentation that explains: intellectual property, copyright, copyleft, patents, designs and trademarks. Conduct web research for background information but ensure sources are Australian.
- View websites designed by Tasmanian web designers by conducting a search 'Tasmanian web designers.' View samples of their work. Select a favourite website creator. Write a review of their web designs. Consider: What universal design principles have been applied that enable accessibility and usability for all users?

Mathematics—numeracy

- Explore the 'Graph investigator' series of *Learning Federation* objects to investigate the features of different types of graphs including histograms, box-and-whiskers plots, scatter plots, pie, line and column graphs. Describe examples of when each particular kind of graph would be most useful.
- Explore the 'Triathlon' series of *Learning Federation* objects to increase understandings relating to data analysis, distance-time graphs, distances, gradients, line graphs, number patterns and speed.
- Analyse what is in your email inbox. Classify mail under headings such as: business, personal, spam, entertainment and newsletters. Estimate the percentage that each category takes within the inbox. Select a graphing tool to illustrate the percentages. Complete the same activity but include items in 'deleted items' and 'junk mail' folders. Evaluate the results.
- Contribute to a class investigation. Estimate the total money students at the school spend on mobile phones over a year. Frame questions for data analysis, e.g: boys mobile use compared to girls. Create a data collection form. Conduct data collection. Compile the data into a spreadsheet using correct cell formatting. Analyse the data. Answer initial questions and write a conclusion. Share results with the school community.
- Visit the student area of the Australian Bureau of statistics website (www.abs.gov.au/websitedbs/cashome.nsf/Home/Home). Explore the website to learn about data and information. Browse the statistics presented and represent a data set in a new presentation mode justifying why the choice of tool suits the data set being represented.

Science

- Conduct a search 'How to make paper helicopters.' Make a helicopter and contribute it to a class collection of helicopters with different rotor sizes. Conduct an experiment with the helicopters, timing their descent. Put the data into a spreadsheet and chart it to find the rotor size for the slowest helicopter. Discuss in relation to total aerodynamic force.
- Create a webpage about a mythical/hoax creature. Include pictures and scientific information about the creature. Locate two websites about unusual but 'real' creatures. Conduct a search on 'amazing animals' to assist you. Print the homepage of both websites along with your hoax page. Remove the web addresses from the top of the sites and any official information from the bottom and sides of the pages. Make sure the three pages are roughly the same shape. Show the three pages to a classmate who has to work out which creature is the hoax creature. After guessing, provide your classmate with proof that the other two creatures exist.
- View a science animation on a video sharing website such as Youtube. (www.youtube.com). Evaluate the science within the video. Is it an accurate representation? Establish how the video has been created. Create a science clay animation, illustrating scientific cycles such as the rock or water cycle, phases of the moon, plant or animal life cycles. Conduct a web search for 'How to make a simple clay animation'. Select an easy to follow website and make your animation. Share it on YouTube or similar. Provide classmates with feedback and consider feedback given.
- Create a portfolio of scientific documents on a topic such as 'global warming'. Keep a record of online contributions such as forum and blog posts. Create with a variety of Microsoft documents such as Word®, Publisher®, PowerPoint®, PhotoStory® and Excel® and cover a broad range of text types such as reports, graphic organisers, spreadsheets and interactive presentations.
- Produce a science show film. Participate in a group to conduct a chemistry related science experiment to show to lower primary students. Decide on a suitable experiment. Write a script to explain the science behind the experiment that younger children can understand. Assume roles, either in conducting the experiment or providing explanations. View all of the recorded experiments. Discuss what could make the science show more interesting such as providing a panel to introduce the show, including a discussion between each experiment segment and to conclude the show. Edit and refine the production before showing to younger students. Evaluate own role within the production.

Society and History

- Explore the 'Nhu Minh' and 'Fiona Chiu' *Learning Federation* objects to compile storyboards for films about multiculturalism in Australia based on Nhu Minh and Fiona Chiu's cultural heritage.
- Explore the 'Save our bridge' series of *Learning Federation* objects to collect data regarding how people feel about the potential replacement of an ageing bridge. Draw a conclusion about what the community wants and prepare a presentation combining text and images to present to the Council. Investigate a similar local example of development or restoration. Engage the local community in the debate.
- Plan for and create a local history digital presentation in a team integrating a variety of ICT applications. Within the planning process consider: What is the purpose of the presentation? What information will it deliver? How will you gather resources and information? How will the information and materials be reported? What roles will each team member assume? and What ICT tools will be used? Follow the plan and give the presentation. Evaluate the selection and application of tools.
- Create a digital presentation titled: 'Give credit where credit's due.' Within the presentation cover the benefits of intellectual property to society.
- Discuss a controversial local community concern with two conflicting points of view. Half the class will assume one point of view and half the class the other. Contribute to making a documentary to promote your side. Watch both documentaries before debating the issues.

Vocational and Applied Learning

- Imagine you own a restaurant or café. Decide what type of food it serves. Create a name for your restaurant or cafe. Publish a menu and website (non-live) to increase your customers. Present the menu and website to your classmates and consider their feedback regarding how appealing the restaurant/café is to them. Edit work to increase customer satisfaction. Browse restaurant and café websites to gauge what features of websites are likely to increase customers.
- Explore the basic features of Google Sketchup (www.sketchup.com/). Plan a construction or design. Sketch it in Sketchup before creating the real object. Discuss the contribution of Sketchup to the final product.
- Read an introduction to IP, at IP Australia (www.ipaustralia.gov.au/). Make a digital product that highlights different types of intellectual property.
- Develop an idea for a small business. Refer to websites such as ABC's Catapult (www.abc.net.au/catapult/basics/default.htm) to formulate a series of steps for establishing and developing the business. Turn the steps into a digital guide integrating ICT applications.
- Design and animate a 3D character using Anim8or (www.anim8or.com). Model the character using plastic, wood or other materials.

Sample resources for standard four (Creating with ICT)

The Learning Federation <http://ecentre.education.tas.gov.au>

Learning Objects (Curriculum Corporation)

Finish the story, Online news, Graph investigator, Triathlon, Travel back in time, Nhu Minh, Fiona Chiu, Save our bridge

Web Links

Australian Screen <http://australianscreen.com.au/>

Pacific North West Tree Octopus <http://zapatopi.net/treeoctopus/>

Tropfest Junior www.tropjr.com.au/

WavePad www.nch.com.au/wavepad/index_b.html

Audacity <http://audacity.sourceforge.net/>

Story Creator 2 <http://myths.e2bn.org/create/>

Centres for Disease Control and Prevention www.bam.gov/sub_physicalactivity/index.html

DigiTales www.digitales.us/resources/seven_steps.php

Primary Resources www.primaryresources.co.uk/ict/ict1.htm

IP Australia www.ipaustralia.gov.au

Cyberbee www.cyberbee.com/cb_copyright.swf

Australian Bureau of statistics website www.abs.gov.au/websitedbs/cashome.nsf/Home/Home

Youtube www.youtube.com

Google Sketchup www.sketchup.com/

ABC's Catapult www.abc.net.au/catapult/basics/default.htm

All web links accessed January 2008

Software packages

Microsoft Office®

Standard four

Strand 3: Communicating with ICT

Performance criteria

At each stage it is expected that students at standard **four** will:

Performance criteria	Stage ten	Stage eleven	Stage twelve
Express identity, communicate appropriately and maintain safety and privacy	<ul style="list-style-type: none">describe ethical and unethical use of specific communication toolsunderstand what cyber crime is and describe the impact it has on societydiscuss issues relating to online identity e.g it's okay to assume an avatar identity in a game but not to deceive others with a fake identity	<ul style="list-style-type: none">share materials responsibly respecting self and othersdemonstrate an ethical awareness of cyber crime by reflecting on and discussing cyber crime as reported in the mediadiscuss how online identity might differ from one's physical persona	<ul style="list-style-type: none">promote and demonstrate application of netiquette protocolsraise awareness about the potential harm cyber crime can cause and promote protection messagesanalyse and evaluate networking websites for their ability to protect user identity
Contribute to and learn from others	<ul style="list-style-type: none">collaborate to decide on, participate in, reflect on and share the outcomes of a suitable online exchange projectdescribe some types of collaborative software (groupware) applications outlining when they are usefulcompare how materials are stored, created, distributed and shared with different devices	<ul style="list-style-type: none">understand how to design, create, draw participants to and moderate forumstrial a range of collaborative software (groupware) tools for communicating with peersuse devices ethically to create, distribute and share materials	<ul style="list-style-type: none">demonstrate increased understanding from participating in an online exchange projectselect and use appropriate collaborative software (groupware) solutions for a purposepose concerns and opportunities when discussing the potential impact of emerging technologies on society

Sample learning opportunities

Arts

- Contribute to performing a dance for video. Suggest an audience who may like to view the video. Discuss how groupware tools/collaboration software could assist with sharing the dance, receiving feedback on improving the dance, reporting information about the dance, scheduling a discussion with the audience and inspiring others to share dances with you. Consider groupware applications such as: email, shared calendars, wikis and chat. Select and use suitable groupware tools. Evaluate how the application of tools transformed the video from a performance into a learning tool.
- Partner up with a buddy class at a different school. Perform the same play script and have it videoed. Upload it to a video sharing website such as Youtube (www.youtube.com) selecting private sharing settings. Watch both performances. Discuss similarities and differences between

the interpretations. Consider the various elements of the performances and how they have provoked specific audience responses. Ask one another questions using collaborative tools such as email or chat.

- Create a simple voice and music Podcast with Audacity (<http://audacity.sourceforge.net/>), clicking on the Audacity wiki link to learn how to use the tool effectively. Invite friends and family members to upload the podcast to their mobile devices such as I-Pods or MP3 players.
- Explore the features of Scratch. (<http://scratch.mit.edu/>) Go to the support page to undertake tutorials and explore tips for using its features. Create original material such as interactive stories, animations, games, music or art with Scratch. Share creations on the Scratch website, adding contributions to projects. View received feedback comments, using advice to refine future creations. View galleries and provide creators with positive constructive feedback.
- Make photo cubes featuring local landscape photography. Take six similarly themed photos, illustrating different aspects of a landscape to print out and stick on the faces of the cube. Adapt your own cube making procedure from browsing sites retrieved from a 'Make your own photo cube' search. As an enterprise, sell the photo cubes at a school fair, or decorate the school foyer with a selection of photo cubes and replace them with new photo cubes as they sell.

English–literacy

- Create and broadcast a digital story, incorporating elements such as animation and video. Use Roller Mache as a reference (www.abc.net.au/rollercoaster/rollermache/default.htm). View the gallery for inspiration. Plan to use the provided tools and templates. Create as inspired by the provided ideas. Upload creation to the gallery. All content is pre-moderated before going live.
- Browse an online news website. Decide on an issue you feel passionately about. Start a forum about the topic using a free forum creator such as Forumotion (www.forumotion.com/). Customise the forum. Promote the site in the forum directory. View forums of other class members. Consider the issues they have raised and post to their forums. Discuss polite ways of disagreeing with people. Influence and persuade others while respecting their ideas.
- View the Australian Government's NetAlert clips. (www.wiseuptoit.com.au/videoclips.htm). Match each clip with a text type and use the clip as a springboard for writing. Write a newspaper article about one of the clips. Retell a second clip as a narrative story. Write a letter to one of the characters in a third clip. For the final clip, imagine you are the featured character and write a journal or blog entry to describe their feelings when they are at the height of their problem. Discuss the differences between the text types.
- Contribute to a social networking website such as Imbee (www.imbee.com/discover/discover_imbee) safely, personalising content, creating, sharing and joining groups. Read and write content but maintain a private avatar protected identity. Establish a trustworthy online reputation beyond known friends after consistently communicating respectfully and with cultural sensitivity.
- Brainstorm netiquette protocols. Discuss the list, identifying protocols that should apply to all ICT environments. Make a digital product to promote the protocols. Consider the audience you want to reach selecting ICT tools that are most likely to capture the audience's attention. Share the product with a target audience. Evaluate the product considering the degree to which it made a positive impact on the target audience.

LOTE

- Record learning on a class blog in the target language, including photos, podcasts and text, using appropriate protocols. Discuss safety and ethical issues.
- Contribute appropriately to a social networking website such as VoxSwap (www.voxswap.com/), a social network for learning and improving languages

Health and wellbeing

- Video a peer to capture sporting action. Discuss appropriate and inappropriate ways of sharing the video footage, for example selecting private settings on video sharing websites. Discuss what the footage could be useful for and why it might be a good idea to share the footage. Discuss appropriate consequences for inappropriate video sharing.
- Participate in Internet safety education by visiting and exploring CyberNetrix (www.cybernetrix.com.au). Customise a character and interact to find out how to stay safe online.
- Show an online identity that you regularly use to the rest of the class by logging onto the website, giving a quick tour of the website and explaining why you frequent it. Answer critical questions about your identity such as 'With whom do you communicate?' 'What do you know about the people with whom you communicate?' and 'What do your online friends know about you?' Listen to the advice others give you to help you maintain a safe and ethical online identity.
- Create a digital product with advice on recognising and avoiding cyber crime. Research cyber crime and identity theft (phishing). Select an audience to educate. Select ICT tools to capture the attention of this audience, for example making a movie about a victim of cyber crime to show to elderly citizens new to the Internet or creating a brochure about cyber crime for students to be available in the school library. Evaluate the target audience's response to the product.
- Identify what information should not be shared in social network environments. Discuss potential implications of revealing too much information online.

ICT extension

- Track text messages class members receive on their mobile phones over a week. Ignore personal texts but track junk mail or spam text messages. Share some for the class to analyse. Which messages are spam and which are scams? Determine what it is that the sender wants the user to commit to and why. Determine costs involved for the user if they subscribe, both short-term and longer term. What advice would you give to someone receiving a text of this nature?
- Complete a Venn diagram to compare synchronous and asynchronous collaborative software (groupware) tools. Research synchronous and asynchronous software tools, classifying typical collaborative software tools. Use the diagram to discuss the advantages and disadvantages of both forms of communication. Communicate with a friend regularly using only synchronous tools for a week and regularly the next week using only asynchronous tools. Re-assess the advantages and disadvantages of using each.
- Work with a partner to explore the potential of a mobile device. Class members should bring a range of mobile devices along to share. Consider: what applications does it possess? What material can be collected or created with it? Who could this material inform or entertain? Where on the web would be an appropriate place to share materials created with the device? Consider sharing sites such as video, photo and podcast sharing sites. Plan to share original material with the device. Decide what to share, how to create it, where to upload it and how to ensure you are following safe and ethical sharing protocols.
- Communicate with known friends online using social networking tools such as email and chat tools and communicate with strangers online, contributing to forums, blogs and providing them with feedback on uploaded materials. Discusses how communicating with strangers is different to communicating with friends online and compare the ethical expectations that apply.
- Share digital content and discussions with friends within social networking spaces such as Multiply (<http://multiply.com>). Different social networking spaces have different age restrictions so check the space you are using and do not use the space if you are under the recommended age. Users over the age of twelve years can access and use 'Multiply'.

Mathematics–numeracy

- Contribute to planning a mathematics online project with a class overseas. Use a website such as epals (www.epals.com) to locate a partner class. Brainstorm a list of data that could be shared and compared. Share ideas. Negotiate what items from both lists will be shared and collected as well as negotiating what ICT tools will be used for communication and for data collection, sharing and presenting.
- Browse data sets and representations on a data-sharing website such as Google’s Swivel (www.swivel.com) or Graphwise (www.graphwise.com). In small groups discuss: What would be interesting data shared online? What data is it possible for us to collect and represent that others would be interested in? Collect the data. Represent it using software and upload it to a data sharing website.
- Use Google sketchup (<http://sketchup.google.com/>) to create a model of a building such as your house. With parental permission upload the creation to Google Earth (<http://earth.google.com/>) to share with a global audience.
- Contribute to participating in an online project of interest to the class. Browse a project website such as Oz Projects (www.ozprojects.edna.edu.au/sibling/home) locating a mathematics project of interest.
- Compete and play multi-player mathematics games online against other players. Conduct a search for ‘multiplayer maths games’ and work on improving your personal score and working your way up the top score board.

Science

- Read and contribute to ABC’s science forums (www.abc.net.au/science/play/forums.htm). Before posting to a forum read the ‘Science Forum Rules’. Follow these and post to conversations of interest as well as starting new conversations. Draw on science information using the extensive ABC science website (<http://www.abc.net.au/science/>) for inspiration, to raise your curiosity and provide you with background understanding.
- Check the weather forecasts, current temperatures and warnings on a site such as the Australian Government bureau of Meteorology (www.bom.gov.au/weather/tas/). Click on the global link to compare weather in other countries. Find a country experiencing extreme weather conditions. Conduct a search to find out more about the weather in that country. Consider: Is the extreme weather the country is currently experiencing typical for the country? Explain why it is or is not. Communicate with a person who lives in the country, locating a suitable person on a website such as epals (www.epals.com) to ask them for a first-hand account of the weather. Consider whether their account supports and enriches your research.
- Contribute to completing an environmental comparisons project with a partner school in a different location, using a range of ICT tools such as social networking (groupware) tools to communicate and work together across schools to share ideas and materials. Select a range of ICT tools and plan for how to use them within the project. Keep a list of tools used. At the end of the project assess how each tool contributed to increasing understanding of both groups of students. Rank the tools from most useful to least useful. Discuss: How could the least useful tools be used for greater impact in a school to school project? How can we continue to use those ranked most useful on a regular basis to contribute to our learning?
- Interview a person whose job relates to science using a digital voice recorder or video camera. Ask them about the role of science in their job. Contribute to compiling the collection of interviews into a podcast (www.mypodcast.com) or documentary. View or listen to it discussing the varied application of science within peoples’ work.
- Regularly browse and read blog excerpts from the New Scientist website (www.newscientist.com/home.ns). Read blogs, view videos and reflect on the latest science news. Register and subscribe to free email updates or RSS (Really Simple Syndication) feeds. Use

collaborative software tools to reflect on emerging science news by discussing issues via email and chat and reflecting on current science in blogs.

Society and History

- Consider how virtual worlds, chat rooms, video sharing websites and social networking services all present users with risks. If particular websites are risky for children, should they be banned? Debate for and against banning the websites. Design surveys and interview people about whether the sites should be banned. Invite email responses from community members on the school newsletter. Use their opinions to support your debates or to analyse and produce counter-arguments. After debate, formulate a policy and present it to senior staff and the school council.
- Browse the Australian Competition and Consumer Commission's Scam Watch website (www.scamwatch.gov.au/content/index.phtml/tag/scamwatch/). Read and discuss stories about people who have been exposed to Internet and mobile phone scams. Share and expose emails and websites that are scams. Refer to the website links: 'How to protect yourself', 'Report a scam' and 'Little black book of scams' in order to support each other and take the best steps towards dealing with scams.
- Communicate with an overseas epal on a regular basis, exchanging information and building up a friendship. Use a website such as epals (www.epals.com) to locate an epal. Initially use email for communications. Over time experiment with using a range of technologies, selecting preferred tools for regular correspondence.
- Develop a code of behaviour for communicating with an epal. Use it to guide future communications. Cover ethical issues associated with using different communication tools. Also consider varying cultural values and cultural respect. Develop strategies for dealing with inappropriate incoming communication.
- Contribute to constructing a class wiki incorporating the collective knowledge of the class. Use an ad-free wiki creator such as pbwiki (<http://pbwiki.com/education.wiki>). Use the class shared password for editing the wiki. View the website tour for a wiki introduction. Collaboratively create pages about historical figures and local heroes from the community to celebrate their achievements, adding files and suggesting links.

Vocational and Applied Learning

- Contribute to filling a postage satchel with miniature models of Australian icons such as a vegemite jar, a Tasmanian Devil and a lifeguard. Swap satchels with a partner class in a different country using a website such as epals (www.epals.com) to communicate with a suitable class. Display their items and exchange comments and questions about the articles sent and received, discussing both the cultural significance of items as well as the techniques used to make the models. Make large models of the miniature models the partner class sent. Photograph them and upload them into a slideshow with text or vocals to demonstrate understanding of the cultural significance of them. Exchange slideshows.
- Take photos of products made and upload them to a website. Consider the steps you would need to take to make the website corporate. How would you promote and market your products online to sell them? How would you bring visitors to your website? Research, share and implement strategies.
- Create a lifestyle show for a class overseas. Plan what segments will be in the show, e.g: cooking, craft, gardening, pet care or health tips. Share ideas with your partner class through email, shared calendar, chat or video conferencing to ensure both present shows with similar formats to make cultural comparisons easier. Assume roles participating as a presenter in one of the segments or participating behind the camera in a technical role to assure sound, lighting, filming and editing are attended to. Respect self and others within material presented. Find a partner class on a website such as epals (www.epals.com). View the video they send you, discussing cultural differences. Use collaborative software (groupware) tools to share questions, answers and

general feedback with the partner class. Trial some of their lifestyle tips and describe your progress.

- Become a 'celebrity chef'. Share a favoured family recipe with the class. Cook it while being videoed discussing each step and contributing anecdotes about why it's important to your family and discussing the positives of the ingredients within it as celebrity chefs are prone to do. Upload the videos to a video sharing website such as you tube (www.youtube.com), selecting private settings, to share the video with a limited group. A video cookbook could be compiled for the class. As an enterprise, this could be sold as a fundraiser.
- Interview a few people about their jobs. Find out what mobile devices they use. Find out how the mobile device increases productivity in the work place. How much harder would tasks be to perform without these mobile devices? Ask the same people about what mobile devices they use personally. Do they believe the devices improve their quality of life? If so, how? Write a report 'Mobile devices in the modern world' to document your findings.

Sample resources for standard four (Communicating with ICT)

Web Links

Scratch <http://scratch.mit.edu/>

YouTube www.youtube.com

Audacity <http://audacity.sourceforge.net/>

Australian Government's NetAlert clips www.wiseuptoit.com.au/videoclips.htm

Roller Mache as a reference www.abc.net.au/rollercoaster/rollermache/default.htm

Imbee www.imbee.com/discover/discover_imbee

Forumotion www.forumotion.com/

CyberNetrix www.cybernetrix.com.au/

Multiply <http://multiply.com>

epals www.epals.com

Google's Swivel www.swivel.com

Graphwise www.graphwise.com

Google sketchup <http://sketchup.google.com/>

Google Earth <http://earth.google.com/>

Oz Projects www.ozprojects.edna.edu.au/sibling/home

ABC's science forums www.abc.net.au/science/play/forums.htm

ABC science www.abc.net.au/science/

Australian Government bureau of Meteorology www.bom.gov.au/weather/tas/

My podcast www.mypodcast.com

New Scientist www.newscientist.com/home.ns

Scam Watch www.scamwatch.gov.au/content/index.phtml/tag/scamwatch/

pbwiki <http://pbwiki.com/education.wiki>

VoxSwap www.voxswap.com/

All web links accessed January 2008

Standard four

Strand 4: Operating ICT

Performance criteria

At each stage it is expected that students at standard **four** will:

Performance criteria	Stage ten	Stage eleven	Stage twelve
Use recognised procedures to maintain a secure, safe and efficient ICT environment	<ul style="list-style-type: none">state and justify school rules about data and software downloadsidentify what many ICT acronyms stand for and what they meandiscuss ergonomic design	<ul style="list-style-type: none">describe potential threats to the security of systems and datarecognise that many ICT issues can be divided into hardware, operating system or application issuespredict trends in the impact of ICT on health and lifestyle	<ul style="list-style-type: none">describe some data and system protection measures such as firewallsprovide advice on preventing ICT problems and upgrading systemspromote best practice in occupational health and safety (OHS)
Understand how ICT components and systems are used to store and retrieve information	<ul style="list-style-type: none">implement a logical system of organising personal files into folders and sub-foldersdifferentiate between software typesgive a comprehensive account of a system's components	<ul style="list-style-type: none">interpret file addresses as comprising strings of drives, folders, servers and/or network sharesunderstand that connected devices often require device drivers to be added to the operating system to function as predictedunderstand 'firmware', where it resides (ROM) and how it may be periodically upgraded	<ul style="list-style-type: none">understand how to compress and decompress files and identify why this may be necessarydiscuss interoperability issues relating to hardware, software, systems and networksdescribe a type of network architecture such as a local area network (LAN)

Sample learning opportunities

Arts

- Consider ways dance performances can be shared. Imagine it is twenty years ago. Consider how performances could be shared. Imagine ways of sharing performances in twenty years. Research interoperability to discuss the types of features future technology will need to be competitive products. Invite family members to download a dance you have performed onto a mobile device. Provide access to the dance on a video sharing website such as YouTube (www.youtube.com), selecting private sharing options. Ask people who downloaded the dance what devices they downloaded it onto. Contribute the devices to a class list of devices used and discuss the devices in terms of interoperability.
- View the 'Growing with Technology' (www.growing.course.com/index.html) website. Go to Level 5, 'Yasmin's Room'. Examine the time machine. Animations show developments in ICT throughout time. In a small group select an animation to create a plot around and dramatise. Perform the act to the rest of the class, ensuring the groups are sequenced from the earliest developments through to the most recent ICT systems.

- Create an advertisement for a device driver with a partner. Each pair in the class will select a different device driver. Sell the advantages of using the device driver using few words and make the advertisement appealing with graphics and sounds. View all advertisements and compare and discuss the device drivers featured.
- Compose a rap in a small group about future trends in the impact of ICT on health and lifestyle. Brainstorm a list of impacts before manipulating the words into a rap form. Perform the rap.
- Design a screensaver. Decide on a purpose for the screensaver, for example advertising, to display family photos, a record of an event, to portray an organisation in a positive way or to showcase the local community. Create a .scr file and copy it in with other .scr files. Select the file to be the displayed screensaver. Use a free program such as Irwfan View (www.irfanview.com) to construct a slideshow-like screensaver. Select the screensaver by using the 'Display' settings in the Control Panel.

English–literacy

- Write a simple step-by-step instruction guide incorporating diagrams or illustrations for using a mobile phone, ipod, set top box or other ICT tool that someone with little or no experience with the technology can understand and use as a practical guide.
- Watch 'episode 103: Whatware?' of Labrats (www.labrats.tv/episodes/ep103.html) to find out about different types of 'ware.' After viewing the episode write an article suitable for inclusion in a children's magazine to explain different types of 'ware' to them.
- View a collection of videos on a video sharing website such as YouTube (www.youtube.com). Conduct a search 'Protect your computer.' Watch several clips. Determine what the most useful video clip is that offers advice that you will use. Write a review for the video. Give a summary of the content and explain why the video is more useful than others. Draw attention to the most important points the video makes and describe how it makes these points. Provide the video creator with feedback.
- Make a list of 10 commonly used ICT acronyms. Feature these in a slideshow presentation. In each slide explain what the acronym stands for and give a definition of each. Add a visual element to enhance meaning.
- Research and compare: commercial software, limited trial software, shareware, non-commercial use, royalty free binaries and open source, writing a guide to software distribution. Start researching each on Wikipedia (<http://en.wikipedia.org/wiki/>). Research further to validate information. Create a bibliography to accompany the software distribution guide.

LOTE

- Use a digital camera/ voice recorder and upload images/audio to computer. Transform these into a digital product to share with students who live in the country where the target language is spoken.
- Write and perform in pairs a hip-hop/rap song in the target language. Select appropriate tools for editing uploading and sharing.

Health and wellbeing

- Create a rubric for analysing ICT environments at home. Consider how safely tools are used and how ergonomic home environments are. Assess homes for safe, healthy, efficient and comfortable ICT use. Write a summary paragraph of recommendations for improving ICT use at home to accompany the rubric. Discuss your work on the rubric and summary at home. Share how you were able to improve ICT environments at home.
- Conduct a search for 'ergonomic office furniture.' Find Australian businesses that sell office furniture and allow you to browse their furniture online. Imagine you are given the responsibility of purchasing a desk and chair for a home office. You can also buy accessories but only if you can justify the purchase for ergonomic reasons. Your budget is open. Which desk and chair would

you purchase? Assess the ergonomics of the products and how successful the business has been in promoting the ergonomics of the products. Show pictures of your supposed purchases. Justify why you made your selections. Compare with the decisions your classmates made. Agree on criteria that makes furniture ergonomically suitable.

- Conduct a search 'How do you set up a work station?' Browse websites and determine five useful websites. List the URL of each and under the URL, make dot points to summarise the advice each website gives. Compare dot points. Make a list of dot points to use as a reference guide to maintaining ergonomic workspaces.
- Identify the Occupational Health & Safety (OH&S) school officer and discuss what their role might involve in relation to ICT environments. If you were appointed student health and safety officer of the school, what would you do in relation to ICT environments? Research the role of an OH&S officer. Give a speech to nominate yourself for the role. Students vote for an OH&S student officer to volunteer support to the appointed school OH&S officer.
- Research 'mobile phones and health risks.' Write a report to outline conflicting reports that you read regarding the impact of mobile phones on health. Describe some of the reported risks and describe practices that should be adopted in order to limit health risks.

ICT extension

- View Microsoft's presentation 'The Museum of Modern Technology'-networks (www.actden.com/skills2k/) for an introduction to basic networks. Complete the multi choice quizzes provided to test your understanding.
- Make a digital product to explain file compression and decompression. Start by researching the topic on a website such as Learn the Net (www.learnthenet.com/english/html/36compr.htm). Ensure that the digital product is easy for people who have never heard of file compression or decompression to understand and that encourages them to use compression and decompression for sending and viewing files.
- Draw a diagram displaying what is inside a computer and showing how computer components connect with one another in order for the system to operate. Use Click-N-Learn (www.kids-online.net/learn/click/table.html) as a reference.
- Make a mindmap using software such as Inspiration® to demonstrate your understanding of firewalls. Start with what you already know about firewalls. Conduct a search: 'What are firewalls?' Summarise new information learnt in your own words into your diagram, connecting ideas that flow logically together. Compare your mindmap with those of other students. Discuss similarities and differences between them, editing your mindmap as your understandings increase. Reference all sources used.
- Conduct searches for: 'hardware troubleshooting', 'operating system troubleshooting' and 'application troubleshooting.' Find a preferred website for each and bookmark these on a web-based bookmark website such as Del.icio.us (<http://del.icio.us/>). Conduct a search for an IT forum and read troubleshooting problems people have submitted. Select one and share it with all students in the class. Students will first classify the problem as a hardware, operating system or application issue. They will then consult their matching saved website to see if it offers advice to help solve the problem. Have a competition to see who can solve the problem first. Whoever does should share the strategy on the forum. Other students will take turns sharing problems. Share the most useful websites for troubleshooting.

Mathematics–numeracy

- Create an electronic diagram to illustrate that an operating system interprets a file as a set of binary numbers. Illustrate that a program interprets and presents a file's information to present it to the user. Research binary numbers and operating systems as a reference to creating your diagram. Use a website such as TeacherTube (www.teachertube.com) to conduct a search for 'binary numbers.'

- Imagine you have just moved into a flat and are responsible for paying your own bills. You need to subscribe to a suitable mobile phone plan and broadband Internet plan. Compare some of the plans as advertised online. Decide on a mobile phone and broadband Internet plan to subscribe to. Justify why your selections. Give evidence comparing the plans to alternative plans. Make sure you read the fine print and decipher what you are committing to.
- You have a budget of \$2000 to buy a new computer. Research what is available in local stores online. List your first, second and third choice. Justify why your first choice is a better deal, considering screen size, memory capacity, processor specifications, operating system, brand reputation, environmental issues, hard drive capacity, graphic card capacity, optical device, service offered and extras offered.
- Create a digital product for people with limited exposure to ICT. The product is to help them make informed decisions when making ICT purchases. It should de-code technical specification terms used to advertise ICT products.
- Compare similar ICT devices of varying brands. Make a list of things to compare e.g. memory, capacity and price. Create a spreadsheet to illustrate the differences.

Science

- Consider differences between ROM and RAM. Create a Venn diagram to show similarities and differences between both. Discuss how computer memory is similar to human memory.
- In a small group contribute to writing an email to a health professional or scientist. Ask them to outline their thoughts in relation to health and safety concerning ICT tools and environments. Put their concerns forward so that they can be compiled into a class list of concerns. Research and provide detailed scientific evidence that backs the concerns. Address the concerns by writing a list of recommendations for each concern.
- Research: How are scientists trying to improve ICT devices to make them safer and healthier? Create a new imaginary ICT gadget using a drawing software program such as DrawPlus 4 from Free Serif Software (www.freeserifsoftware.com/software/DrawPlus/default.asp). Show the gadget to the class, advertising it as being safe and healthy. Draw from articles regarding new devices. Use a website such as PC World (www.pcworld.com/) to read about the latest ICT devices on the market.
- Visit a website such as How Stuff Works (www.howstuffworks.com/tv/htm) to find out how specific ICT devices work. Consider the links, images, videos and expert reviews provided. Create a mind map with Inspiration® to illustrate how a specific device works.
- Keep up to date with the latest news in technology, regularly visiting and reading content from a website such as Digg (www.digg.com). Draw the class's attention to articles which detail scientific advances and if the class agree that the article is noteworthy, print it out to be added to a compilation of 'Scientific ICT Advances' articles. Small groups can use the articles as a springboard for further research, negotiated projects and innovations.

Society and History

- Write an essay titled 'The threat of insiders and outsiders.' The essay is to detail the way outsiders such as hackers damage information systems as well as detailing how insiders with approved access to information systems can damage systems. Give examples of the types of consequences suffered by personal users, by organisations and by society in general.
- Consider school software download rules. Discuss whether you agree with the rules justifying how you feel. What rules do you think should guide society in general regarding software downloads? Imagine you have been given the task of formulating a set of rules for all ICT environments in Australia. Formulate the set of rules. Write a separate report to accompany the rules, pointing out how the rules will benefit society.

- Imagine it is 25 years in the future. You are a journalist. ICT has had an impact on health and lifestyle. Write an article describing a 'worst case scenario' of the impact ICT is having on health and lifestyle. Consider your article. Is it applicable today? What is likely to change within the next 25 years? Write a second article detailing a 'best case scenario.' Report on the impact of ICT on health and lifestyle detailing innovations that have led to ICT being part of a society's balanced, healthy lifestyle. Discuss: What needs to happen to make the best-case scenario become a reality? How can we contribute to that?
- Consider that not all communities (and countries) have equitable access to ICT. Research a group who are working to provide disadvantaged communities with increased access to ICT and report the benefits to health and lifestyle that the group are trying to promote through ICT.
- Review a film or literature that depicts a futuristic portrayal of the influence of ICT on quality of life and human relationships e.g. I Robot, AI.

Vocational and Applied Learning

- Consider that most ICT devices are designed to be firmware upgradeable, so that they can have new software loaded onto them to increase their performance. Type the name of your favourite device into a search engine followed by 'firmware update'. Find a website that clearly describes how the system can be enhanced with the latest firmware. Design your own 'dream firmware' for the device. Summarise the true latest firmware to the class as well as your 'dream firmware'. Ask students to guess which the true firmware is and justify their choices.
- Create a diagram using Inspiration® software. List a file address or URL in the centre of the diagram. Mark separate parts of the address/URL with arrows. Describe the parts of the URL/address, such as: protocol, domain name, path and extension. Draw further arrows from these defining what they mean.
- Compare three operating systems. Determine the type of users and businesses each operating system would suit.
- Make a top 10 tips for file management guide. Present the guide to a group, giving demonstrations of each tip, demonstrating how you have followed your own advice.
- Browse your email inbox and deleted items. Look at attachments you have been sent. Identify the file extensions on the end of the files you have been sent, e.g: .doc. Keeping in mind that file extensions reveal what type of document you are being sent, list the different types of file extensions that you have received. Try to decode each file extension. Look up any you are unsure about on a website such as Webopedia.
(www.webopedia.com/quick_ref/fileextensionsa.asp) Browse the alphabetical list of file extensions. Discuss why it might be useful to decipher what type of file you have been sent before downloading it.

Sample resources for standard four (Operating ICT)

Web Links

YouTube www.youtube.com

Growing with Technology www.growing.course.com/index.html

Infan View www.irfanview.com

Webopedia www.webopedia.com/quick_ref/fileextensionsa.asp

Microsoft's The Museum of Modern Technology www.actden.com/skills2k/

Labrats www.labrats.tv/episodes/ep103.html

Click-N-Learn www.kids-online.net/learn/click/table.html

Learn the Net www.learnthenet.com/english/html/36compr.htm

How Stuff Works www.howstuffworks.com/tv/htm

PCWorld <http://cssvc.pcworld.comuserve.com/computing/cis/article/0>

Digg www.digg.com

My Podcast www.mypodcast.com

Wikipedia <http://en.wikipedia.org/wiki/>

Del.icio.us <http://del.icio.us/>

TeacherTube www.teachertube.com

Free Serif Software www.freeserifsoftware.com/software/DrawPlus/default.asp

PC World <http://www.pcworld.com/>

Central Connecticut State University <http://chortle.ccsu.edu/CS151/cs151.java.html>

All web links accessed January 2008

Software packages

Inspiration®

Microsoft Office®

ICT Standard five

Standard five

Inquiring with ICT

Students use ICT as inquiry resources and understand how ICT can broaden the available range of information and perspectives. They plan for research and investigations and identify how ICT can be used as a tool to conduct and evaluate research. They identify how project management ICT tools can assist them. They select and use a range of research strategies. They use ICT tools to access, analyse and synthesise information to develop and present new and established knowledge.

Students present compelling arguments based on sound research and balanced viewpoints. Students consider valid primary and secondary sources and present annotated bibliographies. They evaluate their sources for accuracy, relevance, authenticity, validity, credibility and bias.

Students use simulation software to effectively model real world concepts and scenarios and to test ideas for design and construction. They reflect on inquiry processes, identifying changes in their understanding of issues. They evaluate the effectiveness of their selection and use of ICT inquiry tools and suggest improvements for future inquiries.

Students understand how they can assist others with inquiries, contributing to online forums and blogs. They understand the significance and ethical implications of establishing a web presence and apply this understanding to their own web spaces, inviting feedback for reflection. They link online presence with the ability to reach out to people and contribute to enriching their lives through business ventures, entertainment, social outlets or through educating and helping others.

Creating with ICT

Students display initiative when creating with ICT both independently and in groups. They collaborate to create online and offline for a range of audiences. They select and develop ideas and creative elements to achieve intended outcomes. They demonstrate the skills, techniques and use accepted conventions and formats to structure creative works in a range of forms. They select and use appropriate ICT tools competently for each stage of the construction of products. They integrate ICT applications by applying and manipulating advanced features of tools and applications. They use ICT to create and broadcast for local and global audiences.

Students use a range of ICT in creative ways to think, inform, entertain, move and persuade. They develop criteria for success, planning, refining and editing their creations to suit audience, purpose and context. They demonstrate innovation by applying creative thinking strategies and exploring emerging technologies to present ideas to influence a diverse range of audiences. They use constructive feedback to evaluate and modify their ICT products.

Students identify the forms that plagiarism and copyright infringements can take in ICT environments. They adhere to codes of practice and recognise copyright and intellectual property laws by fully acknowledging sources and permissions.

Communicating with ICT

Students contribute to building effective online learning communities using ICT. They use online collaboration tools (groupware applications) to interact and learn with and from others. They use ICT to communicate in formal and informal networks for a range of purposes. Social networks are increasingly important to standard five students.

They collaborate to solve problems, exchange ideas and information and present critical points of view about ideas and issues. They reflect on how their use of ICT could be more effective in future communications. They consistently apply protocols and conventions in their communications with others. They recognise the ethical issues that ICT communications and emerging technologies present and make recommendations for ethical communication. They describe actions required to protect selves and others from 'cyber crime'. They protect their identities while using shared work spaces and social networking services.

Operating ICT

Standard five students perform common maintenance procedures to aid the effective functioning of ICT systems. They provide others with advice on preventing ICT problems and know how to upgrade systems. They make recommendations for ergonomically sound environments when using ICT.

Students interpret file extensions and recognise their abbreviations as descriptors of file types and can export work using different file formats for specific purposes. They understand and identify ways that ICT interoperability can enhance productivity. They describe how the components of a computers operating system work together including basic networking concepts. They understand some simple programming languages.

ICT Standard five

At each stage it is expected that students will:

	Performance criteria	Stage thirteen	Stage fourteen	Stage fifteen
Inquiring with ICT	Inquire and become critical information consumers	<ul style="list-style-type: none"> use the Internet as a research tool, routinely seeking information from a variety of websites cite references consistently following agreed conventions validate the credibility of information sources 	<ul style="list-style-type: none"> develop a web presence for own website following researched strategies plan and present research with annotated bibliographies analyse electronic information sources, critiquing their credibility and validity 	<ul style="list-style-type: none"> design a search-engine friendly website and improve its search engine rankings demonstrate consideration of primary and secondary research sources in bibliographies self- evaluate own information sources such as websites and blogs, critiquing their credibility and validity
	Inquire using appropriate strategies and tools	<ul style="list-style-type: none"> modify strategies and solve complex problems when playing interactive educational games participate in an online community such as a forum as an inquiry strategy demonstrate effective use of a simulation tool and discuss its application to 'real world' contexts 	<ul style="list-style-type: none"> collaborate to problem solve and compete with others in multiplayer interactive educational games work with an online community to achieve a common research goal assuming responsibility for the learning of all community members demonstrate understanding of complex systems after problem solving with them in simulation environments 	<ul style="list-style-type: none"> reflect on results of playing a multiplayer educational game, identifying strategies for future success establish and work with an online community for mutual research apply knowledge gained through problem solving in a simulation environment to a real-life context
Creating with ICT	Create, edit and share information and ideas	<ul style="list-style-type: none"> create digital products that inform, entertain, influence or persuade determine quality design specifications for an ICT product and follow the specifications to create a product use advanced editing functions to refine a digital product for desired effects 	<ul style="list-style-type: none"> create, promote and deliver a broadcast to a large audience collaborate to plan and present a technically refined digital product that integrates suitable ICT applications assume responsibility for editing an element of a collaboratively produced digital product 	<ul style="list-style-type: none"> create complex, persuasive and highly individualised media products select, integrate and evaluate design elements and tools for their potential to achieve desired effects demonstrate specialised digital editing experience
	Follow recognised conventions to express ideas and information	<ul style="list-style-type: none"> collect, analyse, represent, organise and manage data with digital tools create digital products that illustrate a broad use of conventions appropriate to text type demonstrate understanding of intellectual property and copyright laws 	<ul style="list-style-type: none"> manage and organise data using tools such as mail merge maintain a broad collection of digital products that comply with ICT presentation conventions describe Creative Commons and their relationship with intellectual property 	<ul style="list-style-type: none"> select and use data management systems suitable for specific requirements discuss the future of digital product design explain how to obtain legal rights of ownership and how to protect intellectual property (IP) rights

ICT Standard five

At each stage it is expected that students will:

	Performance criteria	Stage thirteen	Stage fourteen	Stage fifteen
Communicating with ICT	Express identity, communicate appropriately and maintain safety and privacy	<ul style="list-style-type: none"> identify appropriate codes of conduct for ICT communications outline the forms that cyber crime can take and describe how to avoid being a victim of it establish and maintain appropriate online identities to broaden social, intellectual and extra-curricular networks 	<ul style="list-style-type: none"> promote respect of self and others in communications discuss challenges regarding the emergence, prevention and control of cyber crime raise opportunities and concerns presented by specific online networks 	<ul style="list-style-type: none"> identify ways ICT can be used to promote human rights demonstrate understanding of cyber crime legislation compare and evaluate how different online networks protect identity
	Contribute to and learn from others	<ul style="list-style-type: none"> contribute to the learning of others and learn from others in online exchange projects enhance group work by using a range of collaborative software demonstrate awareness of the latest technology news and emerging devices 	<ul style="list-style-type: none"> plan an online exchange project, implementing it and drawing participants to it select and recommend collaborative software (groupware) solutions appropriate for specific purposes make recommendations for the ethical use of emerging devices 	<ul style="list-style-type: none"> plan, implement, draw participants to and showcase the results of an online exchange project facilitate group work with collaborative software (groupware) and project management tools compare and evaluate emerging technologies for the impact and issues they present
Operating ICT	Use recognised procedures to maintain a secure, safe and efficient ICT environment	<ul style="list-style-type: none"> demonstrate understanding of network security risks, protection and prevention strategies apply problem solving and troubleshooting progressions for the efficient operation of tools identify occupational health and safety concerns and solutions for ICT environments 	<ul style="list-style-type: none"> describe specific system threats such as mobile malware and how to remove them compare common connection systems such as dial-up, ADSL, Wireless Broadband and two-way Satellite analyse and compare ICT responsible use policies of different organisations 	<ul style="list-style-type: none"> demonstrate knowledge and understanding of the latest ICT security news diagnose computer faults and repair them and upgrade systems provide well informed ICT occupational health and safety (OH&S) advice for specific environments
	Understand how ICT components and systems are used to store and retrieve information	<ul style="list-style-type: none"> maintain files in a clear, logical structure demonstrating understanding of file size, type and naming conventions understand the field of ICT sufficiently to be an effective consumer of ICT goods and services demonstrate understanding of basic network concepts 	<ul style="list-style-type: none"> implement a logical and failsafe system of saving files, organising them and backing them up distinguish between the functions of operating systems software and applications software describe basic networking features of an operating system, such as access control, directory services, and sharing 	<ul style="list-style-type: none"> demonstrate efficient and effective file management understand how a CPU performs digital logic (using the binary number system) participate in network design and construction

Standard five

Strand I: Inquiring with ICT

Performance criteria

At each stage it is expected that students at standard **five** will:

Performance criteria	Stage thirteen	Stage fourteen	Stage fifteen
Inquire and become critical information consumers	<ul style="list-style-type: none">use the Internet as a research tool, routinely seeking information from a variety of websitescite references consistently following agreed conventionsvalidate the credibility of information sources	<ul style="list-style-type: none">develop a web presence for own website following researched strategiesplan and present research with annotated bibliographiesanalyse electronic information sources, critiquing their credibility and validity	<ul style="list-style-type: none">design a search-engine friendly website and improve its search engine rankingsdemonstrate consideration of primary and secondary research sources in bibliographiesself- evaluate own information sources such as websites and blogs, critiquing their credibility and validity
Inquire using appropriate strategies and tools	<ul style="list-style-type: none">modify strategies and solve complex problems when playing interactive educational gamesparticipate in an online community such as a forum as an inquiry strategydemonstrate effective use of a simulation tool and discuss its application to 'real world' contexts	<ul style="list-style-type: none">collaborate to problem solve and compete with others in multiplayer interactive educational gameswork with an online community to achieve a common research goal assuming responsibility for the learning of all community membersdemonstrate understanding of complex systems after problem solving with them in simulation environments	<ul style="list-style-type: none">reflect on results of playing a multiplayer educational game, identifying strategies for future successestablish and work with an online community for mutual researchapply knowledge gained through problem solving in a simulation environment to a real-life context

Sample learning opportunities

Arts

- Sign up for an account on a video sharing website such as YouTube (www.youtube.com). Add five dance videos to a playlist and rate each dance using stars. For each justify the star rating. Leave appropriate critical feedback for each clip. Plan a group dance to upload to YouTube. With parental permission, perform and upload the dance. Discuss feedback received over time to improve future performances.
- View the National Film and Sound Archive website www.nfsa.afc.gov.au/. Research how audio visual materials are preserved. Write a report to compare how NFSA preserves audio visual materials with at least two other organisations. Create an annotated bibliography, listing each citation and describing each with an evaluative paragraph.

- Visit a virtual music studio such as BBC OneMusic (www.bbc.co.uk/radio1/onemusic/studio/). Make music on a sequencer. Explore using a mixing desk and investigate different jobs in the music industry. Assume a virtual industry personality and research how to succeed in the music industry.
- Explore the 'Mervyn Bishop' series of *Learning Federation* objects. Analyse and reflect upon Merv's story and photographs to determine the influences on one of Australia's best known photographers. Use the Internet to conduct further research about Mervyn Bishop. Compare the primary information source that the learning object provided with information provided from secondary sources on the Internet. Write an essay about Mervyn Bishop's contribution to photography in Australia. Create a bibliography detailing primary sources such as the learning object and other primary sources such as online interviews and detailing secondary sources.
- View the 'Indigenous Art-colonial and Indigenous perspectives' *Learning Federation* collection of artworks. Consider that some of the collections reveal historical European perceptions of Aboriginal culture and that others reveal contemporary Aboriginal artists' representations of culture. Imagine you are adding to the collection. Conduct an Internet search to locate another work of art representing European perspectives of Aboriginal culture and a further example of a contemporary work of Aboriginal art. Accompany each with text, describing what the images depict. Contribute to compiling the images and accompanying text into a class digital collection for viewing and reflecting on. Discuss the differences between contemporary Aboriginal and past European perspectives.

English-literacy

- Explore the 'Celebrity garbage' series of *Learning Federation* objects. Help a private eye solve the case of a missing celebrity. Examine clues and evidence and sort the evidence into chronological order. Scan text and take notes on an evidence chart. Explore an interactive model and use a template to construct a factual recount of the case.
- Browse Digg (www.digg.com). Locate an article that you are sceptical about. Determine what makes you sceptical for example: 'the photo looks as though it has been manipulated with photo editing software.' Conduct research to see if you had good reason to be sceptical. Email the article to your teacher with evidence arguing the validity of the article contained in the body of the email.
- Compare the way information is presented in regard to a current affairs issue. Compare blog and forum opinions, news websites and social content websites such as Newsvine (www.newsvine.com). Conduct a web search to consider further sources. As a critical web consumer, decide which website would win each award: 'Most reliable source', 'Most interesting source', 'Most biased source', 'Most controversial source' and 'Best written source.' Justify opinions. Discuss information that is consistent to all sources and information which varied or conflicted.
- Select a topic of interest. Search Wikipedia (www.wikipedia.org/) for articles on the topic. Select some of the information and critically examine it. Validate the facts presented and comment about their accuracy, bias or authority. Edit the wikipedia article if required. Discuss the pros and cons of community construction of knowledge.
- Analyse and describe a popular computing programming language. Give a brief history including what it was designed for. Describe the source code, specialised algorithms and formal logic within it. Compare with a student who has analysed a different programming language. Complete a Venn diagram to illustrate similarities and differences between the two. View tutorials for both. Agree on which provides the clearest step-by-step tutorials for learning the programming language. Discuss when knowing that language could be useful.

LOTE

- Participate in an online discussion forum in the target language using a tool such as Google Groups (<http://groups.google.com.au/>).

- Investigate the information needs of your target audience. Create a digital product to advertise your school or your environment to an exchange student or sister school from the target language addressing their information needs.

Health and wellbeing

- Explore the ‘Sunscreens’ *Learning Federation* object to investigate the impact of sunscreen on different skin types. Work out the SPF of some sunscreens and calculate safe exposure times for a range of skin types and sunscreens.
- Explore the ‘UV index’ series of *Learning Federation* objects interacting with UV simulators to gain an understanding of ultraviolet (UV) radiation. Discuss in relation to sun exposure.
- Browse health articles on a social content website with a health page such as Mixx (www.mixx.com/categories/health) to keep up to date with the latest and most popular health news. Sign up as a user and vote for your favourite health articles. Discuss your views about the articles with other members of the class. When you have formed a considered opinion, contribute comments to the article on the website building an online reputation for intellectual integrity.
- Play the Unicef simulation Ayiti - The Cost of Life (www.unicef.org/voy/explore/rights/explore_3142.html) to manage a rural family of five in Haiti over four years. Keep the family healthy, educated and help them to survive. Reflect on factors that influenced the family’s health and survival. Discuss these in relation to current events in Haiti.
- Evaluate the website of a local community health service. Consider whether their website encourages you or others to use the service. Suggest improvements for building their web presence.

ICT extension

- Research how to build a search-engine friendly website. Make a list of tips. Create a website following the list of tips. Use an ICT reference tool such as WhatIs.com (<http://whatis.techtarget.com/>) to research unfamiliar ICT terms.
- Demonstrate how you have achieved a web presence for your website. Provide valid evidence such as hit counters, comments, feedback and materials received and demonstrate that your website is easy to find with a search. Describe the factors that helped you achieve web presence.
- List your 10 favourite websites. Investigate who owns the websites and if they are connected or jointly owned by large companies. Consider how some large companies own and control a considerable amount of the web. Read ‘Who Owns What V 2.1’ by Amy Webb (www.mydigimedia.com/WhoOwns.html). Acquisitions and mergers in media are common for the companies listed. Were any of your top 10 websites included in the lists? If so, how many? Discuss how companies such as Yahoo, Google, Microsoft, IAC, News Corporation and AOL influence web consumption. What do you think the new media landscape will look like in five years time?
- Learn computer programming basics with Alice (www.alice.org/). Use simple programming to produce a series of problem solving games for primary school children.
- Edit a digital product until it has been vastly improved. Show the product and its original form to the class. Allow the class to interview you, asking you questions about the editing decisions you made, techniques and tools you used. Accept constructive feedback. Ask question of and provide others with feedback.

Mathematics-numeracy

- Explore the ‘Mobile phone plans’ series of *Learning Federation* objects to analyse the costs associated with different mobile phone plans. Interpret pattern to make predictions and

comparisons between different plans. Analyse graphs to compare costs associated with different plans. Recommend the best plan for each user profiled.

- Write a report on the latest Federal Budget (www.budget.gov.au/) considering the benefits gained by different sections of the community and determine whether you consider the budget to have achieved the aims outlined by the Government. Consider the opinions of others who have analysed the budget such as Alia Publishing (www.alia.org.au/publishing/budget.analysis/).
- Find a house you would like to purchase on an online real estate guide such as Real Estate.com (www.realestate.com.au). You can afford to pay \$300.00 per week to cover the mortgage and have a \$10,000 dollar deposit. Your other savings will cover extra costs such as stamp duty and legal fees. Use the mortgage calculator to find a house that you can afford. Imagine the interest rates went up by 3%. Could you still afford to pay the mortgage? Discuss the importance of making conservative decisions that take into account interest rate fluctuations.
- Use geometry software such as Geometer's Sketchpad® to construct and manipulate geographic figures and to discover relationships and theorems.
- Explore online tools such as Gizmos by Explore Learning (www.explorelearning.com/) to use online simulations for mathematical inquiry.

Science

- Explore the 'Tectonics investigator' and 'Tectonic boundaries' series of *Learning Federation* objects. In 'Tectonics Investigator,' investigate scientific evidence that leads to our understanding of the current model of the Earth's structure. Look at the scientific observation of magnetic stripes at divergent plate boundaries and consider how this supports tectonics plate theory. In 'Tectonic boundaries,' use models of tectonic processes to understand geologic events on the Earth. Apply understandings of plate tectonics to world regions and to explain how major geological features were created.
- Explore the 'Green machine' series of *Learning Federation* objects to investigate relationships between a vehicle's features and its greenhouse gas emissions. Design and assemble a vehicle that meets specific targets for fuel consumption. Consider the responsibilities of Australian drivers regarding global warming and climate change.
- Participate in BBC's 'Climate Challenge' (www.bbc.co.uk/sn/hottopics/climatechange/climate_challenge/). Choose policies and persuade competing regional blocs to reduce their carbon emissions. Investigate the science behind 'Climate Challenge'. Play Planet Green Game www.planetgreengame.com/play_again.html and reduce CO₂ emissions and reduce the impact of global warming in the game. After playing both games, discuss new understanding of some causes of climate change and new awareness of policy options available to governments. Research possible policy options for the Australian government.
- Conduct an environmental project to improve an area of the local environment. Define the location of the area and explain why it needs to be conserved or improved. Anticipate the potential impact of the project. Plan solution options – considering what, how, who, timeline, materials needed and budget. Execute the plan. Use project management software such as the Open Source Open Proj (<http://openproj.org/>) to apply efficient project management. Monitor progress and present the project outcomes. Critically self and peer-evaluate strategies used in the design and completion of the task.
- Use a virtual scanning electron microscope (SEM) such as the Virtual Lab provided by NASA (<http://learn.arc.nasa.gov/vlab/index.html>) to zoom and focus into a variety of built-in microscope samples. View the animated tutorial on the inner workings of an electron microscope. Discuss the benefits of exploring virtual environments for learning.

Society and History

- Browse the 'Protests and land rights' *Learning Federation* collection. Select an item for further research. Extend the text provided into a detailed essay. Research a variety of sources. Create an annotated bibliography, listing each citation and describing each with an evaluative paragraph.
- Use a knowledge sharing community such as Diigo (www.diigo.com/) for research. Maintain web-based bookmarks. Use sticky notes and create groups to pool resources for specific projects.
- Visit the Education and history section of the Australian Screen website (<http://australianscreen.com.au/education/history/>). View clips of interest. Locate a clip that makes an impact on you regarding how it depicts an aspect of Australian society. Research the time and events that the clip depicts using a variety of information sources. Play the clip to the class after an introduction about the historical context. After viewing, explain the historical accuracy of the production using your research as evidence.
- Investigate politician's use of social networking spaces such as myspace (www.myspace.com) and facebook (www.facebook.com). Select a politician who uses a social networking space. How are their policies and party promoted? Look up a website about the politician. Does it promote the policies and party in the same way? Critically evaluate web resources relating to the politician for bias, validity and currency and highlight differences between conflicting web sources.
- Read a current news article to the class. Also read a parody news story relating to it as located on a website such as The Onion (www.theonion.com/content/index) or The Chaser (www.chaser.com.au/). Consider: Can parody news be offensive and is its uncensored content appropriate? Or: Can we learn from news written to parody the real news? Lead a community of inquiry using the articles as a focus. Investigate the legal and ethical guidelines about what constitutes acceptable parody in contemporary Australia. At the end of the discussion, reflect on which article inspired the most conversation and discuss any ethical or legal issues raised.

Vocational and Applied Learning

- View the 'Exploring careers' series of *Learning Federation* objects to investigate jobs and learning pathways for a number of careers related to a specific industry.
- Explore the 'Café consultant' *Learning Federation* object evaluating market demand to determine features such as opening times, décor style and menu options.
- Explore the 'Global workplace' series of *Learning Federation* objects to apply for work from a selection of nine overseas vocations. Register with an international recruitment agency, indicating preferences and attitudes towards various cultural and workplace practices in a questionnaire. Investigate which countries you are best suited to work in. Read a profile of the matching countries and consider why you were not regarded as being suitable to work in other countries.
- Create a digital product for small businesses titled: 'How to build web presence cheaply and effectively.' Provide realistic advice based on thorough research. Rather than referring businesses to other web site businesses, provide clear steps for them to simply and independently build their own web presence. Describe the impact that stronger web presence can have on a small business. Create a bibliography to accompany the product, citing all sources used. Distribute the products to some interested small business owners.
- Play a multiplayer game such as Runescape 101 (<http://runescape.agame.com/>). Complete quests and training and increase your construction skills so that you can build better homes and furniture. Reflect on the results of the game and discuss alternative strategies.

Sample resources for standard five (Inquiring with ICT)

The Learning Federation <http://ecentre.education.tas.gov.au>

Collections (curriculum Corporation)

Indigenous Art-colonial and Indigenous perspectives/ Protests and land rights

Learning Objects (Curriculum Corporation)

Mervyn Bishop, Celebrity garbage, Sunscreens, UV index, Mobile phone plans, Tectonics investigator, Tectonic boundaries, Green machine, Exploring careers, Café consultant, Global workplace, languages (various) - Chinese, French, German, Greek, Indonesian, Italian and Japanese

Web Links

Austalian Short Films.com www.australianshortfilms.com/default.php

Austalian Short Films.com www.australianshortfilms.com/default.php

BBC OneMusic www.bbc.co.uk/radio1/onemusic/studio/

YouTube www.youtube.com

National Film and Sound Archive website www.nfsa.afc.gov.au/

Digg www.digg.com

Newsvine www.newsvine.com

Wikipedia www.wikipedia.org/

Google Groups <http://groups.google.com.au/>

Mixx www.mixx.com/categories/health

Alice www.alice.org/

Unicef- Ayiti: The Cost of Life www.unicef.org/voy/explore/rights/explore_3142.html

WhatIs.com <http://whatis.techtarget.com/>

Federal Budget www.budget.gov.au/

Alia Publishing www.alia.org.au/publishing/budget.analysis/

Real Estate.com.au www.realestate.com.au

Explore Learning www.explorellearning.com/

BBC's Climate Challenge www.bbc.co.uk/sn/hottopics/climatechange/climate_challenge/

Planet Green Game www.planetgreengame.com/play_again.html

Open Proj <http://openproj.org/>

Virtual Lab - NASA <http://learn.arc.nasa.gov/vlab/index.html>

Australian Screen website <http://australianscreen.com.au/education/history/>

Diigo (www.diigo.com/)

Myspace www.myspace.com

Facebook www.facebook.com

The Onion www.theonion.com/content/index

The Chaser www.chaser.com.au/

Runescape 101 <http://runescape.agoame.com/>

All web links accessed January 2008

Software packages

Geometer's Sketchpad®

Standard five

Strand 2: Creating with ICT

Performance criteria

At each stage it is expected that students at standard **five** will:

Performance criteria	Stage thirteen	Stage fourteen	Stage fifteen
Create, edit and share information and ideas	<ul style="list-style-type: none"> create digital products that inform, entertain, influence or persuade determine quality design specifications for an ICT product and follow the specifications to create a product use advanced editing functions to refine a digital product for desired effects 	<ul style="list-style-type: none"> create, promote and deliver a broadcast to a large audience collaborate to plan and present a technically refined digital product that integrates suitable ICT applications assume responsibility for editing an element of a collaboratively produced digital product 	<ul style="list-style-type: none"> create complex, persuasive and highly individualised media products select, integrate and evaluate design elements and tools for their potential to achieve desired effects demonstrate specialised digital editing experience
Follow recognised conventions to express ideas and information	<ul style="list-style-type: none"> collect, analyse, represent, organise and manage data with digital tools create digital products that illustrate a broad use of conventions appropriate to text type demonstrate understanding of intellectual property and copyright laws 	<ul style="list-style-type: none"> manage and organise data using tools such as mail merge maintain a broad collection of digital products that comply with ICT presentation conventions describe Creative Commons and their relationship with intellectual property 	<ul style="list-style-type: none"> select and use data management systems suitable for specific requirements discuss the future of digital product design explain how to obtain legal rights of ownership and how to protect intellectual property (IP) rights

Sample learning opportunities

Arts

- Showcase dance achievements throughout a school term. As well as performing a variety of dance styles, provide the audience with information about the dances performed including their origin and cultural significance. Collaboratively select ICT tools to use in the planning, creating, editing and sharing stages of the showcase. Evaluate how effectively dance achievements were shared with audiences and how ICT solutions impacted on audience responses.
- Use ACMI (Australian Centre for the Moving Image) (www.acmi.net.au/digital_stories.htm) to learn about how to become confident in digital story telling. View the general 'digital storytelling' clip on the website before viewing some of the created stories for inspiration. Work with a partner, supporting them to tell their story and using them as a resource to support your own narrative. Integrate a variety of ICT applications such as digital photos, videos, text, music and sound and combine the elements with your own narration. The digital stories will be played to an audience of invited parents and friends. Answer audience members' questions about your story and use their feedback and that of your peer to assist in evaluating your endeavour.

- Explore the 'Character maker' and 'Game maker' series of *Learning Federation* objects. In 'Character maker', discover how characters and animated scenes are assembled to suit audience preferences in the process of making a TV advertisement. In 'Game maker', explore how video game makers change the look and feel of a game through combinations of sound, image, word and movement.
- Download the Open Source: 'Tux Guitar' (www.tuxguitar.com.ar/). Compose music using features of the program such as tablature editor, score viewer and multi track display. Click on the 'Documentation' link to access material such as user guide, commonly addressed problems and plug-ins and related programs.
- Create traditional hand-drawn animation (cartoon) using both bitmap and vector graphics with software such as Pencil (www.les-stooges.org/pascal/pencil/index.php?id=Home). Browse the online gallery for ideas and consult the user manual for best results.

English-literacy

- Explore the 'Cricket talk' *Learning Federation* object to construct a persuasive oral text about a cricket match between Australia and New Zealand. Use descriptive and emotive language targeted at a particular audience. Check feedback received relating to the intensity of the vocabulary you selected. Play back the audio commentary. Print out the full text. Read and record it.
- Collaborate to build an innovative website in the category: 'Books and Literature' to enter in ThinkQuest (www.thinkquest.org/index.html). Use the evaluation criteria on the website to guide your work. Follow all rules. Ensure the website educates its viewers. View past winning entries for inspiration.
- Browse subject-specific content on Wikipedia (http://en.wikipedia.org/wiki/Main_Page), acting as a detective to try to find content which originated elsewhere. Select a phrase that you think is suspect. Conduct a search for the phrase. Determine who copied whom. If you find copied information on Wikipedia that does not reference sources, contribute your findings to the Wikipedia discussion tab which allows users to recommend improvements to the article. Identify the forms that plagiarism and copyright infringements can take and discuss how users should respond when they find examples of plagiarism.
- Use the website 'Write to Done' (<http://writetodone.com/>) as a reference point for building a successful blog. Use the advice on the website to become an effective blog writer and to gain advice about writing for a profit.
- Collaborate in a small group to create an electronic story set in the local area. Use a tool such as StoryMaker (<http://story-box.co.uk/sm.php>). Negotiate story elements such as plot, character and sequence of events. Create text and decide whether to attach a video, an audio recording or up to five images. Submit the story. Geo-tag the story and add it to Google maps. (www.mapsgoogle.com.au) Reflect on feedback.

LOTE

- Create a blog in the language being studied. Draw an audience to the blog by following the tips in the Write to Done (<http://writetodone.com/>) website.
- Investigate and discuss cultural differences through email communication with students from the target language country.

Health and wellbeing

- Promote fitness activities during recess and lunch by producing an advertisement. Collaborate to plan for the advertisement, deciding on its content incorporating dialogue, jingles and visual footage. Decide on roles, such as camera person, actors and director. Use video editing software such as Jumpcut (www.jumpcut.com) to refine the advertisement. Experiment with the remix

button, editing other movies for practice first and then apply editing to create a professional looking advertisement.

- Using own photos, create a 'Healthy Living' slide show with text, voice and music. Use a resource such as PhotoStory 3 for Windows (www.microsoft.com/downloads). Present positive health messages with original content. Show the slide show to the class who will critically analyse the delivery according to the content and the application of ICT. Invite them to question you and suggest ways of improving the slide show. Respond to the feedback, editing work and sharing it again to reflect on improvements together. Contribute to critically analysing the work of others.
- Video interview each other about sporting achievements. Take photos and videos of each other participating in the discussed sport. Use collected material to create a video montage celebrating personal sporting achievements. Use a tool such as One True Media (www.onetruemedia.com/). Follow the website steps. Share your montage on the website. Also, upload it to your favourite social networking website or embed it into your blog. Reflect on feedback received.
- Track the performance of favourite athletes in a sporting event such as Olympic or Commonwealth games. Decide what data you will collect and compare. Set up a database and aggregate and extract portions of the data to analyse and report on findings.
- Aim to increase your speed in a fitness activity. Track dates, results and personal best times. Manage the information in a spreadsheet and evaluate the effectiveness of the spreadsheet.

ICT extension

- Use game creation software such as Game Maker 7 (www.yoyogames.com/gamemaker/), to make simple games. Undertake the series of tutorials provided to build your skills and understanding of how to make effective games. (www.yoyogames.com/make/tutorials/). Collaborate with others to create an educational game. Research the learning needs of the targeted age group. Interview people in that age range to find out what makes a game enjoyable to them. Establish the features of their favourite games. Understand what learning is occurring when those games are played by playing them yourself and reflecting on them. Within your original game design, incorporate a background, animated graphics, music and sound effects. Observe participants in the targeted age range playing the game. Use their feedback, general comments and their ease of use to improve the game.
- Design a website accessible to all users. Refer to 'web content accessibility guidelines' as located from a search. Use the guidelines to self evaluate the finished design. Discuss the importance of creating accessible websites and share examples of websites strong in accessibility and examples of websites weak in accessibility.
- Conduct a search, 'mail merge screencast.' Watch a variety of clips. Produce your own screencast, explaining mail merge to people with only basic computer experience. Create your software tutorial using a resource such as FreeScreencast.com (<http://freescreencast.com/pages/whatisit>).
- Conduct a search for 'Introduction to CAD tutorial'. Browse the various tutorials and select one to investigate in detail. Upon completion, share skills with a student who has completed an alternative tutorial. Discuss ways CAD work could be incorporated into interactive simulations and games. Plan an interactive simulation or game incorporating CAD. Invite other students to use the simulation or game and ask questions about its design for sharing design strategies and understanding.
- Determine what makes a quality website. List design specifications. Contribute this to a class list of quality design specifications. Negotiate on the list's content. Use the final list to create a website. The website should promote a small business, real or imaginary. Share created websites. Identify the steps you would have to go through to make the website live.

Mathematics–numeracy

- Conduct four web searches: 1) 'introduction to databases' 2) 'database wizard' 3) 'database lesson' and 4) 'What are databases useful for?' Cite one useful website for each of the four searches. Thoroughly read the four websites, trialling suggested activities. Within a small group plan for and create a useful database. Identify: the purpose for the database, the data it will contain, materials needed for its compilation and the forms required to create it. Work collaboratively, sharing database creation strategies. Compare database with those created by other groups. Share further creation strategies. Discuss how the four websites studied influenced your work.
- Explore the Google 3D Warehouse (<http://sketchup.google.com/3dwarehouse/>) in order to use Google SketchUp, Google Earth and Google 3D Warehouse to build, organise and upload models. Place your models, using real-world coordinates and share them with the world using the Google 3D Warehouse.
- Use software such as Cruncher 2.0 (www.nh.com.au/search/moreinfo.php?id=449200) to use spreadsheets in mathematics to organise, chart and evaluate data.
- Consider a statistics dataset. Represent the dataset within a spreadsheet and within a database. Conduct a search 'databases vs spreadsheets.' Read several of the returned articles. Select which method shows the data you have represented best, justifying why.
- Use 'Fathom™ Dynamic Data' software to represent data in a variety of graphs and determine which graphs are most useful in a given situation. Analyse datasets. Demonstrate the effects of variables and build simulations illustrating probability and statistics concepts. Demonstrate statistical analysis and create sampling distributions.

Science

- Explore ACD/ChemSketch 10 (www.acdlabs.com/download/chemsk.html). Complete the tutorial (www.acdlabs.com/download/docs/chemsk_t10.pdf). Consider that thousands of chemists have incorporated ACD software into their daily routines. Review the product, citing examples of how it is used to effect in the scientific world. Provide examples of original ACD/ChemSketch creations to illustrate your report.
- Use an online tool such as Tabblo (www.tabblo.com) to make a composition of text and images to create a profile of your local environment. Select one aspect of the local environment. As well as capturing different aspects of that environment in images, select and plan scientific information you would like to share and validate your background knowledge with research. Combine relevant images with text. Share your work, enabling users from around the world to increase their knowledge of your environment. Edit your work in relation to the feedback and questions provided by visitors.
- Create a flash movie of a science experiment using a tool such as Toufee (www.toufee.com/). Either take a series of photos to illustrate an experiment or video it. Upload the media, apply explanatory text, add effects, publish and share the production. Publish it to a social networking website that you visit as a regular member.
- Read/view/listen to the latest news in science on ABC's science (www.abc.net.au/science/) website over several weeks. Make reflective notes in Microsoft Word®, posing questions and committing to research at least one aspect of the latest news per week. Incorporate skills learnt from online Word tutorials to record efficient notes. After several weeks, demonstrate how you have incorporated elements such as tables, templates, macros and style sheets into your reflective notes and referencing. Reflect on how word processing incorporating styles and efficient techniques assists you to make clear notes and demonstrate scientific understanding.
- Create a website about an area of science that you have an interest in. Select suitable web publishing tools, undertaking online web publishing tutorials if necessary. Make a website, fully accessible for all users and present it with suitable content, graphics and / or audio. Allow users

to submit feedback. Share and compare website with other class members. Discuss the web publishing tools that were used and share web publishing strategies. Reflect on feedback received to improve both the content and design of the website. Monitor traffic received and share strategies for increasing traffic. Save all versions of the website, to compare before and after improvements over time and to demonstrate how your scientific knowledge has increased.

Society and History

- Create an Inspiration® mindmap featuring what you know about Australia and the Second World War. Explore 'Australia and the Second World War' through a 'Learning Federation' collection incorporating a learning object, speeches, documentaries, songs, photographs, propaganda posters and films. After browsing each aspect of the collection, add to the mindmap.
- View the video 'Wanna Work Together?' (<http://support.creativecommons.org/videos>) to gain an understanding of what Creative Commons are and how they relate to intellectual property. Recommend and debate how intellectual property should be protected in the future considering Creative Commons and the impact of a growing 'free-for-all' culture.
- Imagine you have invented a new ICT gadget. Briefly describe the gadget. Write a series of steps to describe how you would obtain legal rights of ownership of the gadget and protect your intellectual property. Consult IP Australia (www.ipaustralia.gov.au/index.html) for advice.
- Put a personal channel on your website, blog or social networking page with 'Splashcast' (<http://web.splashcast.net/>). Mix together your own videos, music, photos, narration, RSS feeds of interest, presentations and documents suitable for sharing that reflect your cultural or ethnic background, your personal history and your reflections on society and current affairs. Integrate various ICT applications within your 'cast' and aim to connect with local and global audiences. Reflect on feedback received and refine your 'cast' as a result.
- View the Water Aid international website (www.wateraid.org) and access the 'learn zone'. View films and read documents about the work of Water Aid. Play online games to help villagers in Nepal, Ghana and Ethiopia to gain access to a clean water supply. Browse the 'Get involved' activities in Australia (www.wateraid.org/australia/get_involved/) and discuss realistic ways you could become involved in making a difference. Plan a way of getting others in the school involved and use ICT tools such as desktop publishing and video advertisements to promote initiatives.

Vocational and Applied Learning

- Explore the 'Creativity: Fifi Colston' Learning Federation object to discover how Fifi creates wearable art. Discover the importance of inspiration, motivation, planning and techniques. Plan a design to communicate a message through your own piece of virtual wearable art. Select everyday objects and materials to include on a design palette. Reflect on your art and the artistic process.
- Explore the 'Robots: make a catalogue' Learning Federation object to investigate the characteristics of a range of robots and prepare an advertising catalogue using appropriate language and illustrations.
- Design, build and programme a robot for the RoboCup (www.robocupjunior.org.au/) competitions. Register your entry, abide by the competition rules and set target dates for progress. Make an inventory of available resources. Research wish list resources and conduct fundraising to purchase items. Manage input/output and control devices. Plan and design robots that are able to perform the required tasks. Investigate appropriate programming languages and learn and use these to enable a robot to perform a task. Investigate and select suitable circuit boards to design. Document progress within a blog, journal or website.
- Use mail merge to create form letters, mailing labels and change the data source using Microsoft Access® and Word®. Work through an electronic step-by-step guide such as that provided by the University of Leeds (www.leeds.ac.uk/iss/training/mailmerge/MailMerge.pdf).

- Build a bank of professional resources for your own small business. Decide what your business will be, e.g. an online shop. Create professional resources for the business such as business logo, letter head, flyers, website and promotional video. Research 'design elements' to refine the resources and self assess the resources against the design elements of: line, mass, shape, colour and value.

Sample resources for standard five (Creating with ICT)

The Learning Federation <http://ecentre.education.tas.gov.au>

Collections (Curriculum Corporation)

Indigenous Art-colonial and Indigenous perspectives

Australia and the Second World War through a multimedia lens

Learning Objects (Curriculum Corporation)

Character Maker, Game Maker, Cricket talk, Creativity: Fifi Colston, Robots: make a catalogue

Web Links

Pencil www.les-stooges.org/pascal/pencil/index.php?id=Home

ACMI (Australian centre for the moving image) www.acmi.net.au/digital_stories.htm

Tux Guitar www.tuxguitar.com.ar/

Wikipedia http://en.wikipedia.org/wiki/Main_Page

Write to Done <http://writetodone.com/>

StoryMaker <http://story-box.co.uk/sm.php>

Think Quest www.thinkquest.org/

Google maps www.mapsgoogle.com.au

PhotoStory 3 for Windows www.microsoft.com/downloads

One True Media www.onetruemedia.com/

Jumpcut www.jumpcut.com

Game Maker 7 www.yoyogames.com/gamemaker/

Yoyo games www.yoyogames.com/make/tutorials/

FreeScreenCast.com <http://freescreencast.com/pages/whatisit>

Cruncher 2.0 – publisher Havas www.nh.com.au/search/moreinfo.php?id=449200

Google 3D Warehouse <http://sketchup.google.com/3dwarehouse/>

Toufee www.toufee.com/

ACD/ChemSketch 10 www.acdlabs.com/download/chemsk.html

ABC Science www.abc.net.au/science/

Tabblo by HP www.tabblo.com

Creative Commons <http://support.creativecommons.org/videos>

Splashcast <http://web.splashcast.net/>

IP Australia www.ipaustralia.gov.au/index.html

RoboCup www.robocupjunior.org.au/

University of Leeds –mail merge www.leeds.ac.uk/iss/training/mailmerge/MailMerge.pdf

Water Aid www.wateraid.org/australia/get_involved/

All web links accessed January 2008

Software packages

Microsoft® – Excel, Access, PhotoStory 3 and Word

Inspiration ®

Fathom™ Dynamic Data' software.

Standard five

Strand 3: Communicating with ICT

Performance criteria

At each stage it is expected that students at standard **five** will:

Performance criteria	Stage thirteen	Stage fourteen	Stage fifteen
Express identity, communicate appropriately and maintain safety and privacy	<ul style="list-style-type: none">identify appropriate codes of conduct for ICT communicationsoutline the forms that cyber crime can take and describe how to avoid being a victim of itestablish and maintain appropriate online identities to broaden social, intellectual and extra-curricular networks	<ul style="list-style-type: none">promote respect of self and others in communicationsdiscuss challenges regarding the emergence, prevention and control of cyber crimeraise opportunities and concerns presented by specific online networks	<ul style="list-style-type: none">identify ways ICT can be used to promote human rightsdemonstrate understanding of cyber crime legislationcompare and evaluate how different online networks protect identity
Contribute to and learn from others	<ul style="list-style-type: none">contribute to the learning of others and learn from others in online exchange projectsenhance group work by using a range of collaborative softwaredemonstrate awareness of the latest technology news and emerging devices	<ul style="list-style-type: none">plan an online exchange project, implementing it and drawing participants to itselect and recommend collaborative software (groupware) solutions appropriate for specific purposesmake recommendations for the ethical use of emerging devices	<ul style="list-style-type: none">plan, implement, draw participants to and showcase the results of an online exchange projectfacilitate group work with collaborative software (groupware) and project management toolscompare and evaluate emerging technologies for the impact and issues they present

Sample learning opportunities

Arts

- Participate in a dance which is being filmed. Consider options for sharing the dance. Who would you want to share the dance with? Would you be happy for a complete stranger to download your dance onto a mobile device and view it regularly? Would you prefer to select private sharing on a video sharing website such as YouTube (www.youtube.com)? Once a small group of friends have downloaded the dance, how can you control who views or shares it with others? Discuss these issues and how you feel about sharing footage of yourself.
- Explore the 'Anthony McClorey' *Learning Federation* object considering arguments for and against the 1981 proposal to dam the Franklin River from individual, social and political perspectives. Use a SWOT analysis tool to evaluate arguments and help Anthony cast his vote. Use the SWOT tool as a springboard for creating a drama about Anthony McClorey. Write a script, assume roles and produce and perform the production as a short film. Use a short film website such as Australian Short Films (www.australianshortfilms.com/default.php) as a resource to guide the

production. Share the film with a class overseas. Answer their further questions regarding Tasmanian events in 1981. Invite them to submit a film to describe a local history event.

- Upload an original video to Eyespot (<http://eyespot.com>) and edit it online. Explore editor's picks for inspiration. Try remixing someone else's video for video editing practice. Use Eyespot tools to mix your own media and share an edited result to a mobile device. Send it to friends.
- Share your five favourite songs that promote a social conscience with other students. Within a team compose a song promoting social conscience. It can be in any music style. Perform songs to one another. Upload the song to a social networking space such as Myspace (www.myspace.com) to promote and share your music as well as promoting a social conscience within your lyrics.
- Photograph an original visual art work that you have created. Upload it to an educational voice thread website such as ed.Voice Thread (<http://ed.voicethread.com/#home>) Record your voice explaining your art work, describing what inspired it, the techniques you used and how you feel about the final product. Invite other students in your class to add to your Voice thread with their own comments about your art. Reflect on feedback received. Contribute to the voice threads of others who have uploaded art work accompanied by a voice thread, providing them with feedback.

English–literacy

- Tell a story within a digital storytelling community such as Show Beyond TM (www.showbeyond.com/show/home), a slide cast, combining a slideshow with a podcast. Upload and sequence images such as photos or digital art to illustrate a story. Read the story aloud to accompany the slides, adding text, sound effects and music if desired. Share your story by posting it to your blog or a social networking site that you regularly visit as a member. Reflect on feedback to continue to produce slide cast stories, using feedback to improve the quality of the productions.
- Develop a set of advertisements for school newsletters or school websites to alert parents to cyber-crime and outline steps they can take to protect themselves and their families.
- Create a guide to describe the 'best five ICT gadgets money can buy'. Describe the platforms of these gadgets and explain why they are so desirable. Compare work with other students. Do any of their featured products make you want to change your top five list? Explain your reasoning.
- Write an original poem. Recite the poem on Voice Thread (<http://ed.voicethread.com/#home>). Invite friends to listen to the Voice Thread and contribute their personal responses to the poem.
- Discuss: How much information is too much information? Use this question as the title of a newspaper article, reviewing a social utility and providing advice for how to use it safely. Identify some possible consequences of teenagers revealing too much information online.

LOTE

- Compare how English and the target language are used in different text types e.g. SMS, email, telephone message and letters with students who speak the target language.
- Use a web cam and voice chat to communicate with a student buddy who speaks the target language as their first language. Generate an exchange of ideas and interests as well as helping to improve each other's conversation and pronunciation.

Health and wellbeing

- Discuss how you present your identity online in different communities. Show an online identity that you have established in an online network to other class members. Explain the benefits of visiting the community and why you express your identity in a particular way within it. Answer questions from other students and listen to their advice. Offer advice to other students regarding protecting personal information and respecting self and others.

- Conduct a search: 'Internet safety for teens.' Read the information on several websites. Make a digital product such as a video, slideshow or podcast and deliver the most important safety messages in under 3 minutes. Listen to/view each other's safety messages and discuss them.
- Design a netiquette guide in a digital product of your choice. Present the guide to the rest of the class and discuss how it relates to self respect and respecting others.
- Become a member of a forum related to your favourite sport or sports team. Read comments left by other members, respond to them respectfully and begin new threads.
- Visit Wet paint popular lifestyle wikis (www.wetpaint.com/category/Lifestyles). Use wiki sandbox to learn how to edit content (www.wikisandbox.com/?t=anon). Work collaboratively with original authors by editing their work. Create own lifestyle wiki basing it on a subject such as a favourite sport or fitness activity. Invite others to contribute to it and edit it. When you are happy with a page's content, lock it from editing. Reflect on whether online collaboration improved your lifestyle wiki.

ICT extension

- Participate in a virtual world for children or teens such as Habbo (www.habbo.com/). Explore the virtual world and review it. Discuss what you think you can learn within this virtual world and describe any risks associated with it. Provide advice to teenagers and worried parents regarding spending time in virtual worlds.
- Consider a collaborative software (groupware) tool. All students will consider a different one. Partner with another student. Complete a Venn diagram to compare features of both tools. Swap partners several times, completing a number of diagrams. All diagrams will be displayed together. Write a special report about your groupware tool explaining its special features particularly those that are lacking in other tools. Describe any ethical concerns or technical issues such as lack of interoperability/compatibility. Explain what types of purposes and groups the tool is most suited for. Imagine you were given the job of improving the tool. How would you change it and why? All reports will be compiled together. Use the compilation to recommend appropriate groupware tools for specific hypothetical purposes.
- Read about the latest ICT gadgets on The Sydney Morning Herald's Technology guide ([/www.smh.com.au/technology/](http://www.smh.com.au/technology/)). Click on the gadgets tab. Select a gadget to investigate. Read the associated article. Conduct a search for the gadget. Read at least three additional articles relating to the gadget. Create a PMI for the gadget listing its pluses, minuses and interesting points. In the interesting column, comment on the impact and issues that you believe the device will present.
- Research the work of computer scientists in preventing email 'phishing' and other Internet scams. Conduct a search 'computer scientists prevent phishing' and write a report to describe some of the innovations that can protect you while online.
- Select four social utilities such as Facebook (www.facebook.com) and Twitter (www.twitter.com). Compare them and describe potential risks within each environment. Make recommendations for using each of the social utilities safely. Which of the four do you believe offers the greatest protection to users? Justify your decision.

Mathematics–numeracy

- Problem solve and collaborate within a maths forum such as Math Help Forum (www.mathhelpforum.com/math-help/math-help-forum-lounge/).
- Research and compare the growth of different social networking websites. Present a spreadsheet to illustrate growth comparisons. Research Metcalfe's law to explain the rates of growth.
- Investigate: How can a virtual community increase users' mathematical understanding? Participate in a virtual world such as Whyville (www.whyville.net/smmk/nice) investigating the use of mathematics.

- Browse maths projects in Scratch's (<http://scratch.mit.edu/galleries/view/6423>) gallery. Locate quality examples of maths projects, justifying why you selected the projects you did. Create a Scratch maths project and add to the gallery. Reflect on feedback received. For background support, follow the step-by-step Scratch guides and video tutorials (<http://scratch.wik.is/Support>).
- Browse Upperfold's gallery (www.upperfold.com/cgi-bin/gallery.cgi) to experiment with the images that can be created with Blender. Undertake the tutorials offered on the Education tab of Blender (www.blender.org/education-help/). Learn how to create interactive 3D content including modelling, animation, rendering, video postproduction and game creation. Contribute to the forums to support your self paced journey of mastering Blender. Discuss how mathematical knowledge can be useful in mastering Blender.

Science

- Complete a team science project. Use Google Apps Team Edition (www.google.com/apps/business/index.html) to work on shared documents, share a calendar, access work from anywhere or from mobile devices and to invite new members to the team. Use the feature of Team Edition incorporating: Google docs, Google calendar, Google talk and Start page. Manage your time, collaborate and keep in touch throughout the course of the project. Learn about Team Edit in the two minute video provided.
- Create a Wet Paint education group project wiki (www.wetpaint.com/category/Education--Group-Project-Wikis) about an area of science you are interested in. Fill in one of the provided templates to name and describe your wiki. Select a style for the wiki. Set up your account and invite a group of other students to collaborate on the project. Decide on roles such as administrator, moderator, writer or registered user. Review the growth of your wiki. Research information to check the validity of information that appears on your wiki, ensuring it has credible information. Regularly check for plagiarism. Maintain the wiki and after two months, share it with the class, describing how the wiki has evolved, how your knowledge of your topic has increased and any issues raised.
- Photograph a local body of water. Write a scientific report about the water to describe its properties. Include information such as location, inflows and outflows, and water quality. Describe how the water is used. Also describe how the water has changed over time by speaking to locals who have lived in the area for a long time. Collect a sample of water and analyse it. Include findings in your report. Upload your photo and record your report as a voice thread. (<http://ed.voicethread.com/#home>) Encourage others to contribute their own voice threads to discuss your report and photo. Reflect on feedback received. Contribute to the science voice casts uploaded by others.
- Moderate forum discussions about topical issues e.g. create and moderate a forum to discuss climate change. Ensure respect for others is demonstrated in the forum. Create a free forum with a creator such as Forumotion (www.forumotion.com/). Customise the forum and promote the site in the forum directory. View science related forums of others. Consider the issues raised and submit postings. Influence and persuade others while respecting their ideas.
- Plan an online science exchange project and draw participants to it. Use the resources at iEARN (www.iearn.org/) to guide your work. Every project has to answer the question: "How will this project improve the quality of life on the planet?" (iEARN). Participate in the Collaboration Centre to learn together with students around the world and to draw participants to your project. As the project unfolds provide other students in your school with progress updates and share the project outcomes with them.

Society and History

- Create a digital timeline using a tool such as Xtimeline (<http://xtimeline.com/>). Mark Australian history key events on it, basing your timeline around a theme such as multiculturalism in Australia or Australian politics. Browse Xtimeline for inspiration, clicking the explore tab and go

to the history category. Take the site tour and begin your creation. Share it and respond to comments and questions received.

- Collaborate in a small group to plan for, implement and participate in an online exchange project designed to promote human rights. Submit project proposals to the teacher who will use a resource such as Oz Projects (www.ozprojects.edu.au/) to register suitable projects. Update the class with regular progress updates.
- Visit news websites and participate in their forums or opinion pages. Demonstrate respect for others while voicing your opinion on current affairs.
- Design a survey to analyse an issue of importance to the community. In a team decide on a purpose for the survey. Consider different types of questions such as open versus closed questions. Initially brainstorm questions. Examine the list for ambiguity, relevance to the aims of the survey, wording of possible answers and construct the final set of questions. Use an online survey tool such as Survey Monkey.com (www.surveymonkey.com/) to present the survey questions. View the video tutorials to guide your use of the tool. Advertise the survey on the school newsletter and website encouraging participation. Reflect on survey results. Share survey results and reflections. Describe a course of action your group will take as a result of the survey.
- Design a survey to collect information about student behaviour in online environments. Survey a group. Present the data collected. Reflect on the data to identify and recommend improvement targets to the group.

Vocational and Applied Learning

- Read articles from the 'Australian Journal of Emerging Technologies and Society' (www.swin.edu.au/sbs/ajets/). Lead a community of inquiry related to one of the articles, raising awareness of the ethical issues that emerging technologies bring to Australian society and considering the pros and cons of specific technologies.
- Research ten organisations and online services such as banks and online shops and determine how each protects your privacy and security when conducting online business and services. Summarise how each provides consumers with peace of mind regarding security and protection from cyber crime. Identify who you might and might not feel secure conducting your business with.
- Upload a photo of an original recipe into Flickr. (<http://flickr.com>) Annotate the photo. Download Fototagger 2.8 (www.fototagger.com/downloads/). Upload and download photos from Flickr to Fototagger. Take a tour (www.fototagger.com/home_users/product_tour/tag_image/) to find out how to add notes to the recipe. The notes should detail ingredients used and the steps used for the cooking procedure. Use Flickr features to create a group for sharing annotated photo recipes.
- Conduct a search for 'Course management system.' Login as a guest to a course management system. Participate in the community. After exploring it over a few weeks, review it. Discuss your experiences of using the system and identify its potential for contributing to your future learning needs. Compare notes with another student who has investigated an alternative course management system.
- Complete a 'Buyer's Guide to Gadgets'. Within the guide list a variety of mobile platforms and briefly explain the technical specifications of each. Describe their pros and cons.

Sample resources for standard five (Communicating with ICT)

The Learning Federation <http://ecentre.education.tas.gov.au>

Learning Objects (Curriculum Corporation)

Anthony McClorey

Web Links

Austalian Short Films.com www.australianshortfilms.com/default.php

Voice Thread <http://ed.voicethread.com/#home>

YouTube www.youtube.com

Eyespot <http://eyespot.com>

Show Beyond TM www.showbeyond.com/show/home

italki (www.italki.com/)

Wetpaint lifestyle wikis www.wetpaint.com/category/Lifestyles

Wet Paint project wiki www.wetpaint.com/category/Education--Group-Project-Wikis

Wiki sandbox www.wikisandbox.com/?t=anon

Facebook www.facebook.com

Twitter www.twitter.com

Habbo www.habbo.com/

The Sydney Morning Herald's Technology guide www.smh.com.au/technology/

Scratch <http://scratch.mit.edu/galleries/view/6423> + guides and tutorials <http://scratch.wik.is/Support>

Math Help Forum www.mathhelpforum.com/math-help/math-help-forum-lounge/

Whyville www.whyville.net/smmk/nice

Upperfold's gallery www.upperfold.com/cgi-bin/gallery.cgi

Blender www.blender.org/education-help/

Forumotion www.forumotion.com/

Google Apps Team Edition www.google.com/apps/business/index.html

Xtimeline <http://xtimeline.com/>

iEARN www.iearn.org/

Oz Projects www.ozprojects.edu.au/

Survey Monkey.com www.surveymonkey.com/

Flickr <http://flickr.com>

Australian Journal of Emerging Technologies and Society www.swin.edu.au/sbs/ajets/

Fototagger 2.8 www.fototagger.com/downloads/

Fototagger. Take a tour www.fototagger.com/home_users/product_tour/tag_image/

All web links accessed January 2008

Standard five

Strand 4: Operating ICT

Performance criteria

At each stage it is expected that students at standard **five** will:

Performance criteria	Stage thirteen	Stage fourteen	Stage fifteen
Use recognised procedures to maintain a secure, safe and efficient ICT environment	<ul style="list-style-type: none">demonstrate understanding of network security risks, protection and prevention strategiesapply problem solving and troubleshooting progressions for the efficient operation of toolsidentify occupational health and safety concerns and solutions for ICT environments	<ul style="list-style-type: none">describe specific system threats such as mobile malware and how to remove themcompare common connection systems such as dial-up, ADSL, Wireless Broadband and two-way Satelliteanalyse and compare ICT responsible use policies of different organisations	<ul style="list-style-type: none">demonstrate knowledge and understanding of the latest ICT security newsdiagnose computer faults and repair them and upgrade systemsprovide well informed ICT occupational health and safety (OH&S) advice for specific environments
Understand how ICT components and systems are used to store and retrieve information	<ul style="list-style-type: none">maintain files in a clear, logical structure demonstrating understanding of file size, type and naming conventionsunderstand the field of ICT sufficiently to be an effective consumer of ICT goods and servicesdemonstrate understanding of basic network concepts	<ul style="list-style-type: none">implement a logical and failsafe system of saving files, organising them and backing them updistinguish between the functions of operating systems software and applications softwaredescribe basic networking features of an operating system, such as access control, directory services, and sharing	<ul style="list-style-type: none">demonstrate efficient and effective file managementunderstand how a CPU performs digital logic (using the binary number system)participate in network design and construction

Sample learning opportunities

Arts

- Make a video compilation of dances performed by class members. Consult an online 'digital video troubleshooting guide' after conducting a search and follow its advice when problems arise and to refine the video.
- Make an advertisement for a new range of imaginary products that promote safe, healthy and comfortable ICT environments. In small groups, create models of the featured products, a jingle and video the advertisement. View the advertisements produced by other groups. Critique one another's advertisements for their ability to convince the consumer to purchase the products.
- Browse a range of music production suites as found at Hitsquad Musician Network (www.hitsquad.com/). Work with a partner to trial a production suite. Demonstrate its capacity

to record, edit and compose music. Others will also demonstrate the production suites they have selected. Compare different production suites. Discuss different ways that integrated software applications such as production suites are beneficial to musicians. Discuss how application software differs to operating system software such as Microsoft Windows.

- Produce a rap with a music video clip to explain the components of a computer's operating system and to describe how the components work together. Use Click-N-Learn (www.kids-online.net/learn/click/table.html) as a reference guide.
- File your digital visual art work and scanned art work into a suitable location. Store your work in more than one location e.g. filed on a memory stick and in a personal online gallery. Enter art competitions. Ensure the work meets competition guidelines. Convert files to those requested by the guidelines according to preferred size and format. Conduct a web search to find suitable competitions for your art such as POTD (www.potd.com.au/adpotd.shtml) for digital photography.

English-literacy

- Consider the fact that you need certain skills and experience to be able to interpret some of the jargon accompanying ICT advertisements. Some people have not had a chance to gain the skills and experience to make informed purchases. Produce a podcast to explain what to look for when making purchases and to explain typical technical terms. Give advice about considering the fine print and what advice to ask the seller while avoiding being a victim of 'the hard sell approach.' Plan for the podcast in a small group, writing a script for it before recording voices. Use an online tool such as mypodcast.com to create the podcast (www.mypodcast.com). Advertise the podcasts on the school newsletter as a resource for community members.
- Browse articles on Zdnet (www.zdnet.com.au/) relevant to operating ICT. Print an article of interest. Other students will also be printing articles of interest. Discuss your article with other students. Form a group with students whose article is related to your article in some way. Create an Inspiration® diagram with your group to show the issues and the connections between them.
- Search 'broadband jargon'. Make a list of 20 terms related to broadband. Write a brief, clear definition next to each of the terms. Sort the terms into a logical order. Transform them into a slideshow presentation with appropriate graphics. Include a bibliography at the end of the slideshow.
- Research 'mobile malware' and write an essay to describe current mobile malware types. Explain how you can protect your mobile device.
- Imagine a friend has just purchased a new computer and sends you an email asking you the question: 'How should I maintain my computer?' Write an email response to them, summing up the answer to the question briefly in the email body and attaching a more detailed Word document explaining more thorough steps for effectively maintaining a personal computer. Include terms such as defrag, scan and reformat. Research and express information in your own words, simplifying the language so that your friend with limited computer experience can understand it. Create a bibliography of sources you used and also attach to the email as a list of useful web links for your friend. Send the email to your teacher, who will be assuming the role of 'the friend.'

LOTE

- Keep a record of all LOTE products made, achievements gained and communications. Select and use practical solutions for transferring, storing, filing and archiving electronic media and use the solutions consistently.
- Develop a strategy to support ICT problem solving in the target language. Trial with a peer and report back on its effectiveness.

Health and wellbeing

- Create a digital portfolio of your sporting or health and fitness achievements incorporating messages, images, videos and sound clips such as speeches. Discuss why an online tool such as 'Coroflot Portfolios' (www.coroflot.com/) is a practical solution for transferring, storing, filing and archiving electronic media. Compare online solutions with offline solutions and discuss what directions transferring, storing, filing and archiving electronic media is heading.
- Conduct a Google image search (<http://images.google.com.au/>) for 'ergonomics'. Discuss which images best depict good ergonomics. Make your own ergonomic image. Take a digital photo of another student demonstrating good ergonomics. Annotate the photo using a tool such as Foto Tagger (www.fototagger.com/), adding notes such as 'arms and elbows relaxed close to body'. Upload photo to a sharing website such as Flickr (www.flickr.com)
- Research 'ICT occupational health and safety (OH&S) concerns.' List OH&S requirements all ICT environments should apply. Use the list to conduct an audit of your home. Write a report, recommending practices that should remain and practices that should change, justifying your reasons, to foster healthy and safe ICT use at home.
- Research ergonomics in Australia. First consult the 'Ergonomics in Australia' (www.ergonomics.com.au/) website. Use your research to create an ergonomics website for children. Include diagrams and other graphics, simple definitions, advice and warnings about what can happen if good ergonomics are lacking.
- Analyse a business or organisation's ICT responsible use policy as detailed on their website. What areas of acceptable use have been covered? How are infringements managed and what consequences of misuse are detailed? Are there any parts of the policy that you would change? Explain why. Work with a student who has analysed a different policy. Compare the two policies completing a Venn diagram to illustrate what is the same and what is different between the two policies. Look at the school's ICT responsible use policy. Are there any changes that you would recommend? Recommend changes through an official student body.

ICT extension

- Undertake general networking tutorials such as those provided at Computer Technical Tutorials & More (www.techtutorials.info/netgen.html). Rate tutorials undertaken for their ability to contribute to your knowledge about networks.
- Read the webopedia (www.webopedia.com/TERM/N/network.html) page on networks. Distinguish between different types of networks. Browse the provided links to increase your knowledge of networking concepts. Follow teacher modelling and consult guides and tutorials to set up a simple Local Area Network (LAN). Set up the network hardware: server, clients, router/switch, power, data leads. Install and configure server software. Create usernames / passwords / permissions. Install virus protection software. Establish network protocols and conditions of use. Troubleshoot network issues.
- Read and discuss security news as reported on websites such as ZDNet Australia (www.zdnet.com.au/news/security/) Reflect on the articles and submit comments to 'Talkback'.
- Imagine you are a Network Security Solutions company. Create an electronic advertisement using text and graphics or video. Advertise your services describing threats to network security and the solutions you would provide such as 'managed firewall' and 'content filtering' and other services. View all student produced advertisements. Discuss which company you would select to provide you with network security solutions.
- Produce a 'Top 5' of Network Security risks list, putting the least risk at number 5 and the biggest risk at number 1. Write a paragraph for each to describe the risk and its priority for network administrators. Compare your list with the Top 5 lists of other class members. Debate the importance of different security risks. In a small group negotiate a Top 5 list that everybody agrees with.

Mathematics–numeracy

- Conduct a search for: 'small business file management'. Imagine you are responsible for selecting one file management tool for establishing and maintaining a productive small business. Which would you select? Justify your choice, describing the features of the file management tool and assessing how that could transfer to greater profit margins for the business. Listen to other students describe the tools they have selected. Compare these with the tool you proposed using.
- Make a digital product to introduce and explain the binary number system.
- Conduct a search: 'numbering systems tutorial' and complete three tutorials. Select the preferred tutorial explaining why it was the most useful for teaching numbering systems.
- Research 'What is a Codec?' Make a digital product to explain how these mathematical formulas are used to compress or decompress files and that explains when file compression or decompression might be necessary.
- Create, upload, interpret and rate network diagrams at Rate My Network Diagram (www.ratemynetworkdiagram.com/). Reflect on the network diagrams created by others to learn about computer networking and network documentation. Rate network diagrams and leave comments or questions for the creators. Upload your own diagrams. Reflect on the ratings you receive to refine your ability to create logical network diagrams.

Science

- Recommend a solution for transferring, storing, filing and archiving a completed science project. Consider hard drive, hand-held device and online solutions. Which solutions ensure safe storage, easy retrieval for sharing, descriptions of content, date created and use minimal space?
- Keep a science collection of interest containing science podcasts, articles, personal reflective notes or voice recordings, pictures, web links and other material. File the material effectively, compiling material with similar science themes together. Ensure material can be easily retrieved for sharing with others and for building on content. Share your filing strategy with your classmates explaining why you filed the material as you did. Review your filing after listening to the filing strategies of others.
- Learn the science behind defragmenting computers by watching Lab Rats (www.labrats.tv/episodes/ep54.html) episode 54. Defrag your computer.
- Create a digital product with images and text to show the relationship between computer science and interoperability. Describe how interoperability encourages innovation and enhances productivity.
- Read reviews for new ICT products on ZDNet Australia (<http://www.zdnet.com.au/reviews/>). Select one product to conduct further research on. Imagine you are its inventor, trying to win a prize for new innovations. Another student will interview you and you must explain the operational functions of the product, how it's compatible with and works with other devices and also promote the product in a positive light.

Society and History

- Conduct a search on 'interoperability' in Digg (www.digg.com) or a news website. Consider and discuss articles in relation to innovation, ICT and lifestyle impact.
- Store, organise, browse, search and edit history files from your phone or PC. Place your history files in a timeline and store them online. Include text such as blog entries, multimedia messages, pictures, videos and sound clips. Use a tool such as Dipity (www.dipity.com/).
- Discuss the contributions you can make to others, particularly family members in providing them with ICT support. Watch the video 'Remote control your moms' from Lab Rats episode 60 (www.labrats.tv/episodes/ep60.html). Download LogMeIn. (<https://secure.logmein.com/home.asp?lang=en>) As a homework assignment, form a partnership

with a family member introducing them to and setting up their details in LogMeIn. Gain user control to troubleshoot their system remotely and provide them with ongoing ICT support.

- Consider a hand-held device. Create a consumer guide to purchasing it. Look up the website of the company who produced the device. What positive features of the device does it promote? Look up independent reviews and criticisms of the device. In the style of *Choice* magazine, refer to the free access computer articles on their website, (www.choice.com.au) write an article describing the pros and cons of purchasing the device. Cover aspects such as: interoperability, expense, accessories provided, customisation features, navigation, cost, capacity, quality and warranty.
- Make a digital product to describe types of connection (e.g. cable, dial-up, satellite, ADSL, ISDN) that can be used to access the Internet. Considering that consumers have to subscribe to an Internet Service Provider (ISP) and pay a fee for the service, outline the pros and cons of different types of connections.

Vocational and Applied Learning

- Renovate computers for community members with little exposure to ICT, installing software and teaching the owner how to operate the computer. Provide ongoing support.
- Imagine a neighbour is buying a new computer. The neighbour is elderly and would like to use the Internet. They do not understand what broadband or wireless means. They have had basic word processing and Internet experience but have no idea what computer specifications mean as advertised in catalogues. The neighbour has also never signed up for any type of 'plan' before. Create a series of video tutorials to assist your neighbour and those in similar situations. Use a tool such as CamStudio (<http://camstudio.org/>) to create the videos.
- Select a field that you would consider working in. Locate three ICT responsible use policies of different organisations in the field. Make a 3 circle Venn diagram to make note of similarities and differences between the policies, writing similarities inside the interlocking segments and differences in the outer circle segments. Select a preferred user-policy justifying why you would prefer to use it to guide you at work.
- Investigate what a typical retailer filing system looks like. Interview a business owner to find out how they file their records. Refer to the Australian Taxation Office's 'Record keeping' (www.ato.gov.au/businesses/) to be aware of record keeping recommendations and expectations. Imagine you established a new business. Describe how your records would be filed and how you would back them up.
- Research and follow 'tips for effective file management.' Make a checklist of effective file management procedures. Use the checklist as a reference for your own filing.

Sample resources for standard five (Operating ICT)

Web Links

Click-N-Learn www.kids-online.net/learn/click/table.html

Hitsquad Musician Network www.hitsquad.com/

Youtube www.youtube.com

POTD www.potd.com.au/adpotd.shtml

Zdnet www.zdnet.com.au/

Computer Technical Tutorials & More www.techtutorials.info/netgen.html

Rate My Network Diagram www.ratemynetworkdiagram.com/

Coroflot Portfolios www.coroflot.com/

Google image search <http://images.google.com.au/>

Foto Tagger www.fototagger.com/

Flickr www.flickr.com

Ergonomics in Australia' www.ergonomics.com.au/

del.icio.us <http://del.icio.us/>

webopedia www.webopedia.com/TERM/N/network.html

Australian Taxation Office www.ato.gov.au/businesses/

Lab Rats www.labrats.tv/episodes/ episodes 54 and 60

Digg www.digg.com

Dipity www.dipity.com/

LogMeIn. <https://secure.logmein.com/home.asp?lang=en>

Choice www.choice.com.au

CamStudio <http://camstudio.org/>

Tasmanian government jobs www.jobs.tas.gov.au/search/index.php?formtype=short

All web links accessed January 2008

Software packages

Inspiration®

Assessment evidence guide for ICT

The Assessment Evidence Guide provides examples of evidence of student achievement across each standard and is formally assessed for ICT at years 6 and 10 against the Tasmanian ICT Skills Checklist. There is an expectation that all teachers should contribute to building student's skills in ICT. The skills are aligned to the Performance Indicators that are in all strands from stage one to fifteen. The Strands are: Inquiring with ICT, Creating with ICT, Communicating with ICT and Operating ICT.

The Year 6 Checklist is aligned to Standard 3 Stage 8 and the Year 10 checklist is aligned to Standard 5 Stage 13.

Sample Performance Indicators showing student progress (stages 2, 4, 6, 8, 10 and 13) from Standard one to Standard five have been provided. These provide examples of skills that can be taught through learning opportunities at stages leading towards the Year 6 and 10 Checklists. To assist teachers in recording student progress towards mastery at Year 6 and Year 10, these have also been presented in checklist format. It is important that teachers also use them as a reference guide to inform their teaching.

ICT in Tasmania is embedded across the curriculum. They are tools for achievement throughout all curriculum areas. It is also important that students gain a broad range of ICT skills within cross curricular contexts. The ICT Cross-Curricular Framework provides examples of student achievement evidence that can be collected across each standard and stage. In order for students to be challenged to improve their learning, opportunities to learn should be provided in advance of expected assessment ratings.

Teachers can use the Assessment Evidence Guide to help make on-balance judgements when assessing student ICT achievements as they progress towards being assessed against the year 6 or 10 checklists. Students need as many opportunities as possible across the curriculum to demonstrate their understanding and skill level. Teachers make an on-balance judgement about whether a student's performance is at a similar level to the evidence described in this guide.

Checklist assessments for ICT

At primary schools, it is suggested that **Year 6 classroom teachers** assume the role of 'Checklist Administrator' taking ultimate responsibility for assessing the Year 6 ICT Checklist.

At secondary schools, it is suggested that **a school nominated person** assume the role of 'Checklist Administrator.' All subject teachers should assess students against the checklist as relevant to their subject and circumstances. Agreed structures for record keeping and sharing would direct the 'Checklist Administrator' when entering the formal Year 10 Checklist assessment data.

The points of reference for assessment are illustrated below:

	Standard 1			Standard 2			Standard 3			Standard 4			Standard 5		
Stage	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Stages for assessment ratings

Year levels	Kinder and Prep	Years 1 and 2	Years 3 and 4	Years 5 and 6	Years 7 and 8	Years 9 and 10
Standards 1 – 5	1	1 – 2	2 – 3	2 – 4	3 – 4	4 – 5
Assessment ratings Stages 1 – 15	Stages 1 – 3	Stages 2 – 5	Stages 4 – 8	Stages 6 – 10	Stages 8 – 12	Stages 10 – 15

Assessment evidence at each stage

The table below describes sample indicators of performance at each standard. It does not map the entire territory of ICT. It provides examples of what might be expected at each standard in relation to the Year 6 and 10 checklists.

This following evidence guide is organised by strand. The four strands of ICT are:

Strand 1: Inquiring with ICT

Strand 2: Creating with ICT

Strand 3: Communicating with ICT

Strand 4: Operating ICT

Sample skills – Students should show evidence of their capacity to...

Stage 2	Stage 4	Stage 6	Stage 8 Year 6 Checklist	Stage 10	Stage 13 Year 10 Checklist
Inquiring with ICT					
suggest key words for class Internet searches	conduct a search and click on returned hyperlinks	conduct different types of searches such as image search and map search	retrieve information relevant to an inquiry by conducting an effective search	use a range of search methods and justify the best one for a given task	use the Internet as a research tool, routinely seeking information from a variety of websites
identify the titles of useful information sources	recount information learnt from a website	quote and paraphrase material, citing sources and using quotation marks	cite all sources used when presenting research	use an online bibliography composer	cite references consistently following agreed conventions
identify a preferred website from a selection about the same topic	understand that some information sources are more useful and reliable than others	understand that not all web sources are reliable	compare and evaluate information sources relating to a research topic	assess the relevance of an information source to a particular inquiry	validate the credibility of information sources
navigate ICT resources relevant to an inquiry	problem solve to successfully complete games and learning objects	describe and find locations and identify routes in online environments and maps	investigate, question, analyse and problem solve while playing interactive educational games	discuss the negative and positive consequences of choices made while playing an online learning game	modify strategies and solve complex problems when playing interactive educational games
identify changes in websites with evolving content	log onto a website with a username and password after being registered (with support) as a member	personalise a website and log on to it regularly to update or be updated with content	contribute ideas to online networks and reflect on the contributions of others	exchange feedback in response to evolving web content such as blogs	participate in an online community such as a forum as an inquiry strategy
identify tasks undertaken when using simulation tools e.g. 'I am building a train track and then I will test it to see if the train can run on it.'	experiment and problem solve in a simulation environment, reflecting on the outcome of decisions made	demonstrate successful problem solving within a simulation environment	demonstrate understanding of real-world concepts by using simulations	use simulation tools to solve problems based on 'real-world' scenarios	demonstrate effective use of a simulation tool and discuss its application to 'real world' contexts

Sample skills – Students should show evidence of their capacity to...

Stage 2	Stage 4	Stage 6	Stage 8 Year 6 Checklist	Stage 10	Stage 13 Year 10 Checklist
Creating with ICT					
contribute ideas for a class digital product such as a slideshow to entertain families	create a digital product suitable for a significant person	identify what makes a digital product appealing to a specific audience	plan and create digital products with logical sequences and content for specific audiences	analyse how ICT tools were used to influence audience within a digital product	create digital products that inform, entertain, influence or persuade
demonstrate familiarity with specific creativity software	reflect on creative work, describing the subject and use of tools	create various digital products for different purposes using a range of tools	integrate materials such as images and sound files into digital products	use advanced features of software to create a digital product	determine quality design specifications for an ICT product and follow the specifications to create a product
suggest edits for class created digital products	understand that work can be edited, even after it has been saved	share editing strategies e.g.- by showing 'before and after' examples	reflect on digital products, refining/editing them	manage and edit original source materials such as photos and sound files with software	use advanced editing functions to refine a digital product for desired effects
manipulate data in simple mathematical software packages or online	represent a data set in a digital product	represent data collections in different ways with ICT	use digital tools to collect, analyse and represent data for a specific purpose	create data representations following recognised conventions	collect, analyse, represent, organise and manage data with digital tools
explore and use a broad range of keys such as alphabet and number keys, delete, enter, backspace, shift and space bar	select and change font specifications and typefaces	insert pictures, symbols, diagrams and text boxes and copy, cut and paste appropriately	manipulate layout, style and content to create a digital product appropriate to a text type	maintain consistency of style within a digital product	create digital products that illustrate a broad use of conventions appropriate to text type
demonstrate ownership of digital work by naming it, showing it and discussing it	understand that the Internet is a place for sharing material and discuss some reasons why people contribute material	understand what the word plagiarism means	adhere to copyright regulations when creating and downloading	seek and follow advice from intellectual property guidelines	demonstrate understanding of intellectual property and copyright laws

Sample skills – Students should show evidence of their capacity to...

Stage 2	Stage 4	Stage 6	Stage 8 Year 6 Checklist	Stage 10	Stage 13 Year 10 Checklist
Communicating with ICT					
contribute to positive and considerate conversations using ICT	use positive social skills consistently in ICT communications	interpret netiquette as 'online etiquette' and apply it to own behaviour	identify and consistently follow online etiquette (netiquette)	describe ethical and unethical use of specific communication tools	identify appropriate codes of conduct for ICT communications
understand that people exchange information online for different purposes	understand that there is a stranger danger risk online	understand that people may not be who they claim to be online	describe appropriate levels of personal information disclosure for specific online environments	understand what cyber crime is and describe the impact it has on society	outline the forms that cyber crime can take and describe how to avoid being a victim of it
log onto classroom computers with class username and password	keep a private password	use anonymous nicknames, avatars and private passwords appropriately	establish and use an online identity to broaden communication with friends	discuss issues relating to online identity e.g. it's okay to assume an avatar identity in a game but not to deceive others with a fake identity	establish and maintain appropriate online identities to broaden social, intellectual and extra-curricular networks
participate in class-to-class online sharing projects	contribute to class discussions reflecting on the progress of class-to-class online sharing projects	collaborate and interact while participating in online class-to-class sharing projects	contribute to planning for, participating in and reflecting on class-to-class online exchange projects	collaborate to decide on, participate in, reflect on and share the outcomes of a suitable online exchange project	contribute to the learning of others and learn from others in online exchange projects
suggest ideas for class messages such as emails	compose a message such as an email and send it with support	use ICT tools for ongoing communications with people of personal significance	send messages with relevant files attached	describe some types of collaborative software (groupware) applications outlining when they are useful	enhance group work by using a range of collaborative software
connect with another person using a digital device or toy	identify and describe a range of communication devices	identify how different communication devices are used in and have changed society	use a variety of devices to collect and share ideas and information ethically	compare how materials are stored, created, distributed and shared with different devices	demonstrate awareness of the latest technology news and emerging devices

Sample skills – Students should show evidence of their capacity to...

Stage 2	Stage 4	Stage 6	Stage 8 Year 6 Checklist	Stage 10	Stage 13 Year 10 Checklist
Operating ICT					
save work with support	save work regularly during its creation	suggest solutions to protect data from accidental loss	identify how ICT systems become infected with malware and describe how to reduce infection risks	state and justify school rules about data and software downloads	demonstrate understanding of network security risks, protection and prevention strategies
know when something has not worked as expected and seek help	take initial steps in coping with the unexpected and then seek help	make attempts that contribute to the eventual resolution of common problems	follow problem solving strategies to solve common ICT problems	identify what many ICT acronyms stand for and what they mean	apply problem solving and troubleshooting progressions for the efficient operation of tools
follow agreed rules for using tools	identify a health/safety issue for an individual using a specific device	identify a community health and safety issue that arises from the widespread use of a specific device	identify factors that assist people to use ICT healthily, comfortably and safely	discuss ergonomic design	identify occupational health and safety concerns and solutions for ICT environments
understand that data can be saved in files and organised into folders	identify places or devices for storing data	understand common choices within the 'file menu' of different applications	organise electronic folders and files	implement a logical system of organising personal files into folders and sub-folders	maintain files in a clear, logical structure demonstrating understanding of file size, type and naming conventions
identify some reasons for connecting different devices together	connect and disconnect devices carefully	categorise some common devices as input, output and/or storage	distinguish between input, output and storage devices	differentiate between software types	understand the field of ICT sufficiently to be an effective consumer of ICT goods and services
name visible system components such as monitor, keyboard, printer and connection ports	describe the function of some system components	understand that within the main system unit a central processor rapidly processes instructions	explain some basic functions of a system's internal and external components	give a comprehensive account of a system's components	demonstrate understanding of basic network concepts

ICT Glossary

Acronyms

Acronyms are abbreviations composed of the first letter of each successive word.

Adware

Adware is software that causes disruptive and unwanted advertising to appear in various programs.

Asynchronous

Asynchronous communication is communication that is not conducted in real time. Email is an example of asynchronous communication.

Avatar

An avatar is the visual identity people represent themselves with in online environments.

Binary

Computers use binary number systems. The binary number system uses two digits, 0 and 1.

Bits

Bit stands for binary digit. A byte is composed of 8 consecutive bits.

Blog

Blog is short for web log. Entries are commonly displayed in reverse chronological order and often take the form of journal entries.

Bookmarks

Bookmarking websites enables the storage and retrieval of favourite websites.

Boolean search

Boolean searches make use of key words such as *and*, *or*, *not* to refine searches and obtain more relevant search results.

Bytes

Bytes describe data storage in amounts. Large amounts of memory are described in kilobytes, megabytes and gigabytes.

Cache

The Cache stores data temporarily. The data can be rapidly accessed, e.g. a website may not take as long to load during subsequent visits due to the cache functioning.

Chat rooms

Chat rooms are online spaces where people can chat in real-time.

Chipset

A chipset is a set of integrated circuits that work together as one product. The chipset and controllers are the logic circuits of the motherboard.

Computer aided design (CAD)

Computer aided design software programs are for the design, drafting and presentation of graphics. It is used in applications such as architecture, engineering and manufacturing.

Computer chip

Computer chips perform computer processing.

Central processing unit (CPU)

The CPU is sometimes referred to as the computer's processor. It contains the logic circuitry and performs the instructions of a computer's programs.

Customisation

Some websites allow users to change them to reflect user personal style and preferences. This is known as customisation.

Database

A database is a data collection, organised for easy access. It can be easily updated and managed.

Defragmentation

Defragmentation is performed on computers to make them operate more efficiently. It rearranges the layout of files enabling the computer to run faster.

Dialogue windows

Dialogue windows display information to the user informing them of something such as an error message.

Domain name

Domain names are used in URLs (Uniform Resource Locator) to describe internet addresses.

Download

To download is to transfer data from one location to another.

Email

Email enables composing, sending, receiving and storing electronic mail.

Ergonomics

Ergonomic work spaces are safe, comfortable and promote good health.

Expansion card

An expansion card is a printed circuit board. It can be inserted to provide systems with extra functionality.

Favourites

Favourites are also known as bookmarks. They enable the storage and retrieval of favourite websites.

File extension

A computer file extension is the characters that follow a file name. The file extension enables computers to identify what program to associate the file.

Font

Selecting a font enables a user to determine the style and size of the typed text.

Forum

Online forums offer a series of topics that users can discuss; similar to a bulletin board system.

Freeware

Free downloads of software applications are known as freeware.

Groupware

Groupware are online tools that enable social collaboration such as email.

Hard drive

The hard drive is the storage space on a specific computer.

Hardware

Hardware refers to the physical components of an information system.

Hyperlinks

Hyperlinks are the links that enable navigation from one website to another or to a different section of a website.

Icon

An icon is a small graphic image representing a file, application or command.

Image search

Some search engines such as Google™ enable users to conduct image only searches.

Input device

An input device is a hardware device that sends data and control signals to a computer or another information processing system.

Interactivity

Interactivity is dialog between a person and a computer program. Games generally foster interactivity.

Internet

The Internet is a global system of computer networks where users can access and share information.

Interoperability

Interoperability is about systems and organisations operating together.

Ipod

Ipods are created and marketed by Apple. They are portable digital media players.

KWL

A KWL is a graphic organiser. The K stands for 'What we know'. The W stands for 'What we want to find out' and the L stands for 'What we have learnt.'

Learning object

Learning objects cover specific learning focuses. Each focus can be thought of as a building block. They can be reused and reassembled for different knowledge constructions.

Local area network (LAN)

A local area network enables computers within close proximity of each other to be networked together so that they can interconnect.

Log on/off

Some websites require users to log on to them with a username and password to access them and use their features. Users click a log off button when they have finished accessing the site.

Mail merge

Mail merge is a process where information such as names and addresses from a list such as a database are inserted into a letter to produce multiple personalised copies.

Malware

Malware is malicious software. It is software designed to damage a computer's system.

Modem

Modem is short for modulator-demodulator. Modems enable computers to transmit data.

Motherboard

A motherboard contains a computer's basic circuitry and components.

Mp3

MP3 stands for Mpeg-1 Audio Layer 3. MP3 files are compressed music and audio files. MP3 is a file format for digital music and audio. The files are stored and played via software or via a handheld device such as an MP3 player.

Mp4

MP4 stands for Moving Picture Expert Group-4. MP4 files are compressed video files. M4 is a file format for digital videos. The files are stored and played via software or via a handheld device such as an MP4 player.

Mind map

A mind map is a diagram representing and connecting factual information and ideas. Software such as Inspiration® enables the creation of digital mind maps.

Netiquette

Netiquette is made up of two words, net and etiquette and refers to using positive social skills and consideration while online.

Networking

Networking enables computers to interconnect with each other.

Open source

Open source describes the development method used for particular software. The source code is freely available. It can be used for free or modified.

Operating system (OS)

Operating systems perform basic computer tasks such as recognising input, sending output, tracking files and controlling peripheral devices.

Output device

An output device is a peripheral device that receives and may display information downloaded from a computer. A computer monitor is an output device.

Parallel ports

A parallel port is an interface found on a computer to connect peripheral devices.

Peripheral device

Peripheral devices can be external e.g. printer or internal e.g. C-DROM drive. Peripherals are not part of the essential computer but are devices which can expand a computer's functionality.

Personalise

Some websites allow you to customise or personalise them, enabling users to reflect their personal preferences within that site.

Phishing

Phishing is a form of cyber crime where an attempt is made to gather personal information from someone to steal from them, e.g. hoax emails pretending to be from a bank in an attempt to gather someone's banking information.

PMI

A PMI is a 3 column graphic organiser devised by De Bono with the P standing for Pluses, the M standing for Minuses and the I standing for Interesting.

Podcast

A podcast is a broadcast designed for sharing over the Internet. Podcasts can be downloaded. Users can access podcasts whenever they choose to rather than waiting for a scheduled broadcasting time.

Processor

A processor is sometimes referred to as the CPU (Central Processing Unit). It contains the logic circuitry and performs the instructions of a computer's programs.

RAM

RAM stands for Random Access Memory. RAM chips remember information but forgets it when the computer is turned off requiring users to save work.

Rebus

Text composed of words and symbols.

Register

Users are invited to register their details on websites that they will be visiting regularly. Once registered, users access the website with a username and password.

ROM

ROM stands for Read Only Memory. ROM stores information that cannot be changed.

RSS feeds

Subscribing to an RSS feed provides users with a website's latest updates. Feeds can be accessed from a central website rather than having to access and navigate individual websites for updates.

Search

A search is conducted in a search engine such as Google™. Any topic or phrase can be typed into a search engine box with web links relevant to the search appearing underneath the search box.

Search engine

Search engines are internet tools that enable users to conduct searches on the World Wide Web.

Search strategy

Developing a search strategy involves clarifying the research question being investigated, identifying and listing key concepts in the question and considering whether there are alternate ways of expressing the key concepts.

Serial port

A serial port connects devices to computers. Most modern computers use USB ports rather than serial ports. Network devices still use serial ports for configuration.

Shareware

Shareware is software. It is copyrighted but usually available to download for free and use for a limited time as a trial before purchase.

Simulations

Simulations allow users to experience real life scenarios in a virtual environment.

Skype

Skype is social networking software. It allows members to communicate with each other using chat or by making free calls to one another over the Internet.

Slideshow

Slideshows are a digital presentation method. Applications such as Microsoft PowerPoint® enable slideshow presentations.

Social bookmarks

Collecting social bookmarks enables users to bookmark favourite websites and store them on a shared website such as Del.icio.us (<http://del.icio.us/>).

Social content websites

Registered users determine the content of social content websites

Social networking websites or social utilities

A social networking website or social utility is an online social networking web space.

Software

Software provides a set of instructions that tell a computer what to do.

Spam

Spam is electronic junk mail, usually unsolicited.

Spreadsheet

Spreadsheets organise data into rows and columns. Data can be analysed, manipulated and updated.

Spyware

Spyware slows computers down. It is software that is installed without the user realising and tracks downloads and web surfing habits.

Storage device

Storage devices store data.

Switching systems

Inclusive technology enables a switch to be used as an alternative to a mouse.

Synchronous

Synchronous communication enables real-time communication.

TALIS

TALIS is an electronic library 'look up' system.

Tamagotchi

A tamagotchi is a hand-held electronic toy / pet.

Text justification

Justifying text or an image means aligning it in a document.

The Learning Federation (TLF)

Australian and New Zealand schools online curriculum content initiative.

Treasure hunt

A treasure hunt is an online quest.

Upload

Uploading material involves importing data into a system.

Uniform resource locator (URL)

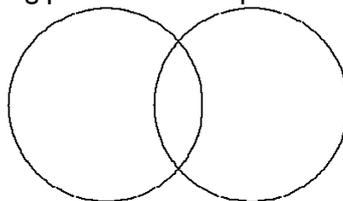
A URL is the address of a web page.

Universal serial bus (USB) and USB port

USB ports allow ICT devices to connect with one another for uploading and downloading materials.

Venn diagram

A Venn diagram is a graphic organiser diagram that shows the relationship between sets. Common attributes are described in the interlocking portion and unique attributes in the outer circle sections.

**Virtual environment**

Virtual reality environments are electronic environments that mirror real life.

Virus

Computers can become infected with viruses. There are many different types of viruses and they prevent computers from working efficiently. A virus is a computer program. It can be spread from system to system by downloading material such as email attachments.

Web address bar

A web address bar appears near the top of the screen when a web browser is open. Users type web addresses (URLs) into it to access specific websites.

Web presence

People or things have web presence when an internet search displays that there are a collection of web links that feature information about that person, group or thing.

Webquest

A webquest challenges students to investigate inquiries by searching the web to successfully complete the quest.

Wiki

A wiki is a website which is collaboratively created and maintained. It is a database of pages that visitors can edit.

Wizard

A wizard is a utility that simplifies tasks. It directs the user through a series of steps. Some wizards provide users with templates for content.

Y Chart

A Y chart is a graphic organiser where the page is divided into a Y shape. One section details- 'sounds like', the other details – 'looks like' and the other detailing – 'feels like'.