Queensland the Smart State
Education and Training Reforms for the Future

Queensland Government
Education Queensland

ICTs for Learning

Years 4–9 Practical Ideas for Teachers

Information and Communication Technologies

ICTs for Learning

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Material collated and production coordinated by Barbara Gant (Senior Project Officer, ICTs for Learning) from information and materials provided by:

Phil Burley
Jane Carr
Stacy Cottam
Tasmin Cowling
Peter Evans
Mark Gillow
David Graham
Lissa Hodson
Gayleen Jackson
Chris Jeffs
Sel Kerans
Cheryl Kerr
Lindy McKeown
Cathy Nash
Damien O'Brien
Jacqui Osborne
David Reid
Barry Rieck
Doug Roach
Bob Rodgers
Jeff Souter
Trish Wade
Kirsty Weston.

For information regarding the ICTs for Learning strategy, please contact:

ICTs for Learning
Coorparoo Education Precinct
347 Old Cleveland Road
Coorparoo Q 4151

Ph: 1300 650 015

Web: www.education.qld.gov.au/ictsforlearning

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Information and Communication Technologies for Learning

Years 4–9
Practical Ideas for Teachers

ICTs for Learning

Foreword from the Minister for Education Anna Bligh MP

Dedicated and skilled teachers are the most valuable resource in our classrooms and are essential for ensuring the continued success of using information and communication technologies (ICTs) as tools for learning. The purpose of the ICTs for Learning Strategy is to support teachers and schools in creating the conditions where ICTs are integrated into daily teaching practice and curriculum delivery.

Learning and development is a key focus of the second year of the ICTs for Learning Strategy. Computers and cabling are not enough if our teachers are not adequately skilled in their use to enhance learning.

This year, in addition to the funds contained in the enhanced ICTs for Learning Annual Grants, Education Queensland will spend in excess of $2 million in supporting schools and teachers in the area of learning and development.

The ICT Learning and Development Strategy provides a range of professional development opportunities and resources to support teachers in developing ICT curriculum integration skills. Further explanation of the strategy can be found in the 2003–2004 ICTs for Learning School Information Kit distributed to you in July.

The *ICTs for Learning Practical Ideas for Teachers* booklets have been designed as an integral part of the ICT Learning and Development Strategy. These booklets describe approaches to ICT curriculum integration with practical, step-by-step examples of ICT use across a range of curriculum areas and year levels. They will assist teachers in planning, teaching and assessment and provide another avenue for teachers to move towards the destination of effective ICT integration.

I encourage all schools to make use of these valuable resources to support teacher practice. I know that you will engage fully with the ICT Learning and Development Strategy and continue your commitment to making ICTs a tool for teaching and learning in your school.

Anna Bligh MP
Minister for Education

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Introduction

ICTs for Learning – Overview of Learning and Development Strategy

Information and Communication Technologies (ICTs) are one of three major components in the reform package entitled *Queensland the Smart State – Education and Training Reforms for the Future.*

This three-year transition strategy is assisting teachers and schools to create the conditions under which ICTs can be integrated as everyday tools for learning and delivering curriculum.

A key action for the second year of the strategy is the implementation of the ICTs Learning and Development Strategy. This comprehensive framework provides a broad range of professional learning pathways and resources that will help all teachers to develop the skills needed to integrate ICTs into the curriculum.

This booklet has been designed as part of the ICTs Learning and Development Strategy. It aims to assist teachers to use ICTs in their planning, teaching and assessment by providing a range of practical, step-by-step examples of how ICTs can be used across a range of curriculum areas and levels. The examples have been developed through a framework of productive pedagogies and integration across all key learning areas. Further examples, unit plans, teacher stories and ICTs learning objects can be found in the online database of examples of ICTs curriculum integration, part of Education Queensland's Curriculum Exchange. This database includes examples of integration that will challenge and support teachers beginning to use ICTs as well as the advanced operators providing leadership in schools. Teachers should also consider how integration of ICTs in the curriculum is linked to:

Lifelong learning

- Knowledgeable person with deep understanding
- Complex thinker
- Active investigator
- Responsive creator
- Effective communicator
- Participant in an interdependent world
- Reflective and self-directed learner

Productive pedagogies

- Intellectual quality
- Supportive classroom environment
- Recognition and valuing of difference
- Connectedness

Cross-curricular priorities

- Numeracy
- Literacy
- Lifeskills
- Futures perspective

This booklet should be used as part of a school's total ICTs for Learning strategy. Each teacher also has access to a wide range of both systemic and locally developed learning and development activities through ICTs for Learning and the ICTs Learning Guarantees for Teachers.

This booklet is a valuable tool that will help teachers to:

- select learning strategies and resources that cater for students' learning needs and styles
- create learning experiences that enable students to actively use ICTs to organise, research, interpret, analyse, communicate and represent knowledge
- utilise resources within their schools
- adopt and use new knowledge, skills and attitudes
- explore new approaches to integrating ICTs
- develop creative ways of using ICTs, inspired by ideas in this booklet
- demonstrate how ICTs link to productive pedagogies
- work with colleagues to explore and discuss new and innovative techniques for integrating ICTs into the curriculum.

Using this booklet

The activities that have been included in this booklet can be used across a number of key learning areas and across various levels. They can be followed step by step or used as a starting point for developing new ideas. Activities can also be modified depending on the context and particular needs of students. Students with a disability may need assistance with some of the activities.

These examples should be embedded into a current unit of work. Examples of units of work that embed ICTs are available from the Curriculum Exchange.

Understanding learners in the middle school phase and ICTs

Each student is unique and has needs and interests that differ according to age, gender, physical abilities, aptitude, aspirations, dispositions, experiences, learning opportunities and learning preferences. Sociocultural backgrounds further characterise the individual learner. Individuals at various stages of growth and development share characteristics that can guide the planning of a developmental curriculum program that includes the use of ICTs.

As capable learners, students in the middle phase of schooling:

- are socially aware and developing a strong sense of justice. They may:
  - investigate the relationships between ICTs, people and society
  - negotiate systems for managing equitable access to ICTs
  - discuss how technologies can be used to challenge inequality
  - discuss ethics in applications of technologies
- can be reflective about their experiences and are responsive to a teacher's modelling of reflective behaviour. They may:
  - recognise and respond to a teacher's models of equity and fairness in the use of ICTs
  - reflect on their ICTs activities, adapt or confirm strategies and evaluate information and experiences
- are able to discern subtle qualities and want clarification and detail
  - they may explore and apply a wider range of the options offered by software programs
- develop and refine skills in gathering, interpreting and presenting information
  - they may use ICTs to gather, present and interpret information
- develop a greater degree of social independence
  - they may monitor their own development of ICTs skills and make choices about the appropriate use of ICTs
- begin to learn by interacting with their peers
  - they may work effectively in small groups and engage in collaborative problem solving and peer tutoring when working with ICTs
- are becoming interested in culturally shared skills and information
  - they may use electronic information systems to conduct research and relate their ICTs experiences to procedures used in the wider society
- are able to sustain interest in topics for longer periods
  - they may undertake in-depth tasks over time using ICTs
- have a strong urge to create and invent
  - they may explore and express ideas by using ICTs to reach a variety of outcomes.

Supporting students with a disability

Some students may need assistance to be able to engage in ICTs activities because they have a disability that makes using conventional technology difficult.

Assistive technology enables students with a disability to participate in ICTs for Learning activities. The scope of assistive technologies is vast and provides, for example, an alternative method of input that is more suitable to a student's learning style, by increasing accuracy, input and output rates.

When students with a disability participate in ICTs activities such as those outlined in this booklet, it is important to focus on their abilities and provide avenues, technologies and strategies that will allow all students to maximise their participation, engagement and success.

Responding to the diversity of students

When preparing ICTs activities, it is important to identify and accommodate both the learning styles and the sensory and cognitive access, response, input and output needs of all students. Assistive technologies and appropriate learning strategies should be considered when identifying hardware, software and sequenced learning for ICTs activities. If a word processor is needed for an activity, consider the range of software programs that could be used to provide and present information for a range of learning styles and abilities, rather than limiting students to a mainly text-based program. If an activity requires the use of pictures or images, consider how the information could be provided in an alternative format to allow students with a vision impairment to participate in the activity. If an activity requires input through a computer's keyboard or mouse, consider alternative methods of data input that accommodate students with a range of input needs.

All the activities in this booklet have the capacity to be undertaken by all students; any activities that are developed as a result of reviewing this booklet should also have the capacity to be undertaken by all students. It is critical for a student's successful participation in ICTs activities that their needs and ability are recognised. This includes identifying suitable technology for each student and developing appropriate learning strategies that maximise participation and learning outcomes. Obtaining input from support staff such as advisory visiting teachers, education advisers, learning support teachers, occupational therapists, physiotherapists and speech-language pathologists will ensure that all students are given every opportunity to participate and succeed in ICTs activities.

Ideas

An inclusive clothes catalogue

Suggested levels	Years 4–7
Key learning areas	English, Technology, LOTE
Purpose	To design and create a clothes catalogue that refects the cultural diversity of their local area.
Hardware and software	• Computer with Internet access • Colour printer • Digital camera • Desktop publishing software such as Microsoft Word, Microsoft Publisher or AppleWorks • Clip art
Sequenced learning activities	Students: • collect and examine store catalogues • discuss whether the catalogues include items and people that represent the cultural diversity of their local area • design an inclusive clothes catalogue that better represents the cultural diversity of the local area by: – gathering and electronically storing appropriate graphics for inclusion in the catalogue, including digital photos, scanned images, WordArt, clip art and pictures downloaded from the Internet – using desktop publishing software to format their catalogue • print the catalogue in colour.
Links to support materials	Making a splash www.teachers.ash.org.au/andrewd/teachers/integrating_ict/dtp_graphics/index.htm Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2b01.html QSA The Arts module: Pizzazz! Where information comes alive www.qsa.qld.edu.au/yrs1_10/kla/arts/pdf/modules/me_3_p.pdf SOFWeb IdeaBank: Creating a Brochure for an Industry www.eduweb.vic.gov.au/ideabank/activityDetail.asp?id=1593 Technology and Teaching: Tutorials www.pbs/org/teachersource/teachtech/tutorials.shtm TIPS: Making Multimedia http://education.qld.gov.au/tal/tips/ealthelp/docs/makemm.doc

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An inclusive clothes catalogue

Suggested levels	Years 4–7
Comments	Teachers and students will need to be able to: • create, save and print documents • add text and textboxes • insert, resize, crop and move graphics • take digital photos and save them to the computer. To make the activity more relevant, the students and/or their parents could model items to be included in the catalogue. The catalogue may be used to advertise actual items for sale at school stalls. This activity is a great way to ensure that students from diverse backgrounds are actively engaged in learning.

Book chat online

Suggested levels	Years 4–9
Key learning areas	English
Purpose	To discuss a book or poem they have read with students from another school.
Hardware and software	• Computers with Internet access • Data projector and screen (optional)
Sequenced learning activities	Teacher: • uses their contacts to find a partner class within a local network or cluster • arranges a time for the online chat • prepares a project room in The Learning Place. Students: • read a book or poem and discuss it in class • develop starter questions for the partner class, either individually or as a class • practise the techniques for an online chat within the class • log on and start chatting using the prepared starter questions.
Links to support materials	The Learning Place – About chat http://education.qld.gov.au/itt/service/communication/chat/aboutchat.html The Learning Place – Active projects http://eq.janison.com.au/EQ/list.asp?type=project Tips for using Chat with students http://education.qld.gov.au/tal/tips/docs/01873/usingchat.doc
Comments	To learn more about using chat, refer to the link 'The Learning Place – About chat'. Practise a few times with your partner teacher without the students. Then practise with your class to get the students used to the software and the etiquette. Consider inviting the author to join a chat with your students. There may be costs involved.

Choose your own adventure narratives

Suggested levels	Years 7–9
Key learning areas	English
Purpose	To recognise the main features of this type of narrative and plan their own stories.
Hardware and software	• Computer • Inspiration or similar mind-mapping software • Word processing program such as Microsoft Word • Microsoft PowerPoint or similar program
Sequenced learning activities	Students: • read/share several examples of the choose-your-own adventure genre • use mind-mapping software to analyse the text and identify the features • brainstorm possible plots, characters and settings for their own story. Teacher: • demonstrates how to plan a storyboard using mind-mapping software. The final step in planning is to insert page numbers. • prints the plan. Students: • use mind-mapping software to plan their storyboards • print their storyboards • write their stories using a word processing program • save their stories • open a new presentation in PowerPoint or a similar program • add text to each slide, matching the page numbers from the storyboard to the slide numbers • begin adding hyperlinks between pages • change background and text colours to suit • view their slideshow using the slideshow option.
Links to support materials	Buzz Rod and the Light http://hillside.coled.umn.edu/class1/Buzz/Story.html Inspiration software: Kidspiration (30-day trial) www.inspiration.com/productinfo/kidspiration/index.cfm Interactive stories: Lesson plan and resources www.mpsomaha.org/willow/p5/projects/interactivestories/resources.html Lesson plans: 'Choose Your Own Adventure' Stories www.teachervision.com/lesson-plans/lesson-3139.html

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Choose your own adventure narratives

Suggested levels	Years 7–9
	Lesson plan: Choose your own mystery www.kent.k12.wa.us/curriculum/tech/lessons/5/choose_myst.html Pick-a-path Stories in PowerPoint www.tki.org.nz/r/ict/ictpd/pick_a_path_e.php The Concept Mapping Homepage http://users.edte.utwente.nl/lanzing/cm_home.htm TIPS: PowerPoint for beginners http://education.qld.gov.au/tal/tips/01798.htm
Comments	Students will need a thorough understanding of the genre and the processes involved with the different software applications. A data projector is useful for demonstrating software such as Inspiration.

Class newspapers

Suggested levels	Years 4–9
Key learning areas	English
Purpose	To create and edit a class newspaper and to learn about the roles, tasks and various writing and design parameters involved.
Hardware and software	• Computer • Word processing program such as Microsoft Word • Scanner • Digital camera • Publishing program
Sequenced learning activities	Students: • examine and deconstruct online/printed editions of newspapers • collect and write stories, using templates • save the files to a common folder so all stories are available for multiple editors • after final editing, copy all the stories to a publishing program for formatting or merge the stories into a single Word document and format • publish the newspaper, including on the school's intranet site.
Links to support materials	Australia newspapers www.onlinenewspapers.com/australi.htm Hot topics: News services for kids – quick links http://education.qld.gov.au/tal/tips/hot_topics/01624.htm Multimedia Online http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/index.html QSA SOSE module: Read all about it: Participating www.qsa.qld.edu.au/yrs1_10/kla/sose/pdf/modules/sose2_03.pdf QSA Technology module: The school newspaper www.qsa.qld.edu.au/yrs1_10/kla/technology/sourcebook_modules.html TIPS: Newspapers http://education.qld.gov.au/tal/tips/01555.htm TIPS: Writing newspaper articles http://education.qld.gov.au/tal/tips/01337.htm
Comments	Students could create a newsletter or brochure instead of a newspaper.

Creating a historical profile

Suggested levels	Year 4
Key learning areas	Studies of Society and Environment
Purpose	To go into the role of a historical person from their local area.
Hardware and software	• Computer • Digital camera • Word processing program such as Microsoft Word
Sequenced learning activities	Students: • become familiar with historical roles and jobs from the local area • use a digital camera to take head shots of each other • print out the photos • cut around their heads and glue them to a sheet of drawing paper • select a historical job from the local area and draw an appropriate body below their head – for example, the body of a bullock driver because bullocks were part of history in the local area • use a word processing program to create a profile of their character by answering the following questions: What is my name? What is my age? When did I come to ...? Why did I come to ...? Am I married? How many children do I have? What is my occupation? What is the most difficult thing about my job? What is the best thing about my job?
Links to support materials	Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2b01.html TIPS: A Day in the Life http://education.qld.gov.au/tal/tips/docs/00969.doc TIPS: Local history project http://education.qld.gov.au/tal/tips/01280.htm Years 4–6 Rich Task #5: Oral Histories and Diverse and Changing Lifestyles http://education.qld.gov.au/corporate/newbasics/html/richtasks/year6/resourcesrt5.html
Comments	The students in my class used their character profiles to go to a dinner party, in these roles, to celebrate the fiftieth anniversary of the formation of the township of Beenleigh.

Creating the ideal country

Suggested levels	Years 7–9
Key learning areas	Studies of Society and Environment
Purpose	To design and create the ideal country.
Hardware and software	• Computer • Graphical organiser software such as Inspiration • Civilisation simulation software such as SimTown, SimCity, SimIsle or Civilization
Sequenced learning activities	Students: • may spend several weeks playing civilisation simulation games to develop their background knowledge • use the Think, Pair, Share strategy to discuss what makes up a country • brainstorm all the elements that make up an ideal country, such as resources, geography, government, customs, laws, industry and culture, and use graphical organiser software to record their ideas • work in small groups to design the ideal country by voting on their preferred elements • use the graphical organiser software to present their 'country' and justify their decisions and invite feedback from the rest of the class.
Links to support materials	AskERIC lesson plan: SimCity and PowerPoint www.askeric.org/cgi-bin/printlessons.cgi/Virtual/Lessons/Computer_Science/EDT%200203.html Inspiration (includes free 30-day trial) www.inspiration.com. The Concept Mapping Homepage http://users.edte.utwente.nl/lanzing/cm_home.htm Using SimCity in the classroom http://education.qld.gov.au/tal/tips/pdfs/tn042.pdf
Comments	A whiteboard could be used instead of graphical organiser software. Students need group-working skills and the ability to reach a consensus decision. The teacher and students need to become familiar with graphical organiser software. A range of civilisation simulation games are available, which students would ideally (informally) play before the unit begins.

Descriptive writing – My monster

Suggested levels	Years 4–6
Key learning areas	English
Purpose	To improve students' descriptive writing skills and to practise reading comprehension.
Hardware and software	• Computer • Email • Digital camera/scanner
Sequenced learning activities	Teacher: • partners students off. This can be done within one class, between different classes within the school or between two classes anywhere in the world. www.monsterexchange.org/ is a good place to find e-pals. • asks Student A to write a description and draw a picture (on paper) of a monster and to email the description only to Student B, keeping the picture for later on • asks Student B to write a description and draw a picture (on paper) of a monster and to email the description only to Student A, keeping the picture for later on. Students: • interpret the emailed description they received and draw a picture of the monster (on paper) • either scan their interpreted picture or take a photo of it with a digital camera • send an email to their partner with their interpreted image as an attachment • compare their original drawings with the received interpreted drawing. This activity could be repeated until the original drawing and the interpreted drawing closely match – in effect, improving upon the descriptive writing in each subsequent email.
Links to support materials	Monster Exchange www.monsterexchange.org/ Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2b01.html
Comments	The Monster Exchange website can be used to find a partner school if local participants are not available. This activity can be adapted to any drawing – for example, students could describe and draw treasure maps during a unit on pirates. As an extension activity, go to The Learning Place (www.learningplace.com.au) and organise a chat with the partner class so students can discuss their experiences of interpreting their partner's descriptive writing.

Digital storybooks

Suggested levels	Years 4–9
Key learning areas	English, The Arts
Purpose	To construct and illustrate a narrative for a specific audience.
Hardware and software	• Computer • Digital camera or scanner • Presentation program such as Microsoft PowerPoint • Word processing program such as Microsoft Word
Sequenced learning activities	Students: • study the elements of different types of stories for specific audiences – for example, children's picture books, illustrated books or comic strips for teenagers • write their own narrative in Word • interpret the narrative visually using a range of art mediums, such as coloured pencils, collage, felt pens and pastels • digitally photograph their pictures and import them into PowerPoint • copy and paste their narrative text into a textbox on the slide • insert new slides for new pages.
Links to support materials	Curriculum: Support PowerPoint www.mamkschools.org/central/class/GradeK/mannion/..%5C..%5C..%5C..%5Ccurriculum/curriculum/technology/support/powerpoint/powerpoint.htm Making Multimedia http://education.qld.gov.au/tal/tips/ealthelp/docs/makemm.doc Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2b01.html Years 4–6 Rich Task #2: Narrative Text: Away with Words http://education.qld.gov.au/corporate/newbasics/html/richtasks/year6/resourcesrt2.html
Comments	Depending on the students' ability levels, hyperlink buttons and/or audio (narration, music, sound effects) can be created.

Email conversations

Suggested levels	Years 4–9
Key learning areas	Studies of Society and Environment, English, LOTE
Purpose	To prepare students for oral presentations that may involve debating or persuasive speaking.
Hardware and software	• Computers with email access
Sequenced learning activities	Teacher: • partners students off • nominates a topic – for example, 'Yesterday, all of the television sets in Australia broke indefinitely' • explains that the first student has to email their partner with a sentence starting with the word 'fortunately' – for example, for this sample topic, the initial email might read: 'Fortunately, I had a box of games which I dragged out of the cupboard.' • explains that the second student has to reply with a sentence starting with the word 'unfortunately' – for example, 'Unfortunately, most of the games had pieces missing and I was unable to use any of them.' • explains that subsequent emails must continue to start with 'fortunately' and 'unfortunately' – for example, 'Fortunately, Mum was able to make the time to sit with me and sort out the missing bits and we were able to resurrect two games to play.'
Links to support materials	Speak well??... of course you can! www.ryan.webcentral.com.au/speakwell1.htm.
Comments	An alternative is for each student to take the story in a different direction. The first writer finishes their story with 'but unfortunately...'. The next writer continues the story and finishes with 'but unfortunately..' and so on, alternating with each email.

Film-making for beginners

Suggested levels	Years 4–9
Key learning areas	Technology, The Arts, LOTE
Purpose	To produce short movies of classroom activities.
Hardware and software	• Computer • Digital video camera • Tripod • Video editing software such as iMovie
Sequenced learning activities	Students: • attach the digital video camera to the tripod and film classroom or school events such as sports days, parades, plays and storytelling sessions • film themselves explaining what they were doing during the initial filming • load the video footage on to the computer • use the editing software to cut out all the unwanted footage • add titles, transitions and a suitable music track • burn the finished film to a CD or DVD or export it to a video.
Links to support materials	iMovie www.apple.com/imovie/download/ TIPS: History of Coorparoo State School http://education.qld.gov.au/tal/tips/docs/01804/coss1.doc TIPS: Introducing our school to you http://education.qld.gov.au/tal/tips/docs/01804/mgess1.doc
Comments	Let's face it, students love movies and love watching themselves on TV. You can turn any classroom activity into a movie. Give it a go, it's so easy.

Fraction slide show

Suggested levels	Years 5–9
Key learning areas	Mathematics
Purpose	To understand proper fractions.
Hardware and software	• Computer • Digital camera • Microsoft PowerPoint or PhotoJam • Data projector
Sequenced learning activities	Students: • draw an image that includes a proper fraction on a piece of scrap paper. I made a rule that the image must not be a rectangle, square, oval or circle. In this fashion, students were encouraged to draw images which incorporated fractions. • circle and label the fraction component of the image – for example, a house may be drawn that has eight windows, three of which are circled and labelled as three-eighths • use the digital camera to take a close-up photo of their fraction picture and a head shot of themselves to include in the corner of their slide • compile all the pictures into a slide show. Teacher: • uses a data projector to display the final slide show.
Links to support materials	Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2b01.html No matter what shape your fractions are in http://math.rice.edu/~lanius/Patterns/ PhotoJam www.shockwave.com/sw/content/photojam TIPS: Making Multimedia http://education.qld.gov.au/tal/tips/ealthelp/docs/makemm.doc TIPS: PowerPoint for beginners http://education.qld.gov.au/tal/tips/01798.htm

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Fraction slide show

Suggested levels	Years 5–9
Comments	I found students enjoyed this lesson and became particularly engaged when their face was on a big screen! The learning was incidental to the fun they had. If time is short, the students could take the photos and the teacher could compile the slide show. I found PhotoJam an excellent, and free, application for completing these tasks quickly and efficiently. If you tell PhotoJam where the directory is, it creates the slide show automatically.

Graphing the pets in our class

Suggested levels	Years 4–6
Key learning areas	Mathematics
Purpose	To graphically represent the number of pets owned by members of their class.
Hardware and software	• Computer • Microsoft Excel • Printer
Sequenced learning activities	Students: • open an Excel spreadsheet and type 'Our pets' in the first cell (A1) • type the sorts of pets owned by students underneath the title, starting in cell A2 and pressing 'enter' after each entry • enter the number of each type of pet owned by the students in column B • highlight the animal types and numbers owned by left clicking on the first animal and dragging the mouse to cover all of the data • click on the 'Chart Wizard' icon on the standard toolbar • select a type of chart and follow the prompts to create and label their graph • use the Wizard instruction to insert the graph on to the sheet containing their typed information • move and resize the graph.
Links to support materials	AskERIC lesson plan: What Color are Your Skittles? www.askeric.org/cgi-bin/printlessons.cgi/Virtual/Lessons/Computer_Science/EDT0202.html Spreadsheets with Smarties www.fcps.k12.va.us/KingsParkES/technology/lessons/sprsht.htm TIPS: Using applications http://education.qld.gov.au/tal/tips/01780.htm
Comments	Students in middle to upper year levels may create their own graph. Students could compare how well different types of graph present the information. Graphs can be copied into Microsoft Word, Publisher or PowerPoint documents.

Historical-looking photos

Suggested levels	Years 4–9
Key learning areas	Studies of Society and Environment, English, Technology
Purpose	To produce a historical-looking photo of themselves.
Hardware and software	• Computer • Digital camera • Colour printer (optional) • Graphics software such as Photoshop or Paint Shop Pro
Sequenced learning activities	Students: • find a single-coloured wall – preferably white or cream • dress in appropriate costumes (but not the same colour as the wall) • take photos of each other posing in front of the wall, holding any props they have brought • load the photos on to the computer • open the photos in a graphics software package • select the photo background using the tool that looks like a magic wand and delete it • select a suitable alternative background graphic from a graphics folder • select what is left of their photo and paste it on to the background graphic • print the photo (optional).
Links to support materials	How Stuff Works www.howstuffworks.com/blue-screen.htm Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2b01.html Technology & teaching: Tutorials www.pbs.org/teachersource/teachtech/tutorials.shtm TIPS: Making Multimedia http://education.qld.gov.au/tal/tips/ealthelp/docs/makemm.doc
Comments	Students love doing this and it's so easy. Photo ideas include: students dressed as settlers near historic sites or ancient Egyptians or Romans beside ruins; students standing next to famous Australians or interacting with dangerous animals. This activity uses the 'blue screen' effect, a common special effect in movies. You don't actually need a blue screen, just a plain wall of a single colour. Photos can be printed in black and white or sepia for added effect.

Instructional slide show

Suggested levels	Year 4
Key learning areas	English, Technology
Purpose	To create instructional PowerPoint slides explaining how they built a compost receptacle or similar item using recycled materials.
Hardware and software	• Computers • Microsoft PowerPoint • Digital camera • Microphone for audio recording
Sequenced learning activities	Students: • design and make a compost receptacle or similar item, either individually or in groups • take digital photographs at different stages of the production process • download the photos and save them in their personal folders • draft instructional text that explains the process they followed (the instructional text genre should be modelled and rehearsed before students draft their copy) • create a PowerPoint presentation of their instructions – each slide may represent one stage in the process, with bullet points underneath each heading • add photographs and audio to each slide • add animation to each slide to introduce the dot points (optional).
Links to support materials	Microsoft PowerPoint help for assistance in adding audio and using animation. Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2b01.html TIPS: Making Multimedia http://education.qld.gov.au/tal/tips/ealthelp/docs/makemm.doc TIPS: PowerPoint for beginners http://education.qld.gov.au/tal/tips/01798.htm
Comments	Instructional texts encourage students to think very clearly about a process they have undertaken. It is important to remind them that the purpose of the presentation is to inform rather than to entertain. The amount of animation students include on each slide may need to be limited.

Introducing Logo-based programming

Suggested levels	Years 7–9
Key learning areas	Mathematics, Technology
Purpose	To use the Logo programming language to draw simple geometric shapes.
Hardware and software	• Computer • Logo-based software such as MicroWorlds
Sequenced learning activities	Teachers: • introduce students to 'Turtle' (a toy turtle is ideal) who cannot think for itself, but can follow your directions. Students: • practise giving the turtle directions such as go forward five steps, turn right 90 degrees, go back two steps. Teacher: • introduces students to the Logo-based software and shows them how to hatch a turtle • introduces the programming language used – for example, forward ten steps = fd 10 • asks the students to make the turtle draw a square.
Links to support materials	A Turtle for the Teacher www.ecu.edu.au/pa/ecawa/sig/logo/paul_dench/turtle/ MicroWorlds www.microworlds.com SOFWeb IdeaBank: Geometric Designs with 'Logo' www.eduweb.vic.gov.au/ideabank/activityDetail.asp?id=498 SOFWeb IdeaBank: Investigating Shapes www.eduweb.vic.gov.au/ideabank/activityDetail.asp?id=331 SOFWeb IdeaBank: Turtling Around www.eduweb.vic.gov.au/ideabank/activityDetail.asp?id=2725
Comments	This is a fantastic way to introduce students to basic programming, geometry and problem-solving concepts. They love programming the turtle to move. The teacher should have a basic understanding of the software before introducing the lesson. Extend the students by introducing more complex shapes. Logo can be used to teach concepts of measurement, angles, symmetry (flip, slide and turn), geometry and problem solving.

Introduction to animation

Suggested levels	Years 4–9
Key learning areas	Technology
Purpose	To develop animation skills.
Hardware and software	• Computer • Digital camera • QuickTime Pro, Microsoft Movie Marker, Magic Theatre or iView MediaPro
Sequenced learning activities	Students: • set out a chessboard • position the digital camera to the side of the chessboard to give a good view of the whole board and take a photo • move the chess pieces and take a digital photo of the board after each move – make sure there are no hands or fingers in the photos • save all the photos in one folder/directory on the computer • use appropriate software to open an image sequence • save the image sequence.
Links to support materials	Animation www.ngunnawalps.act.edu.au/animation.htm Animation Introduction www.filmeducation.org/primary/archive/animation.pdf Animation with a Digital Camera www.tki.org.nz/r/ict/ictpd/animation_digital_camera_e.php Clay Animation Kit www.clevelanss.qld.edu.au/ldc/claymation/index.html iView MediaPro www.iview-multimedia.com/products/mediapro/ Making Multimedia http://education.qld.gov.au/tal/tips/ealthelp/docs/makemm.doc Windows Movie Maker www.microsoft.com/windowsxp/moviemaker/
Comments	Students could create a life-size version of the animation by actually being the chess pieces and playing on a chessboard drawn on the ground.

Journey around Australia

Suggested levels	Years 4–7
Key learning areas	Studies of Society and Environment
Purpose	To take a virtual trip around Australia, learn the location of towns, cities and states and send virtual postcards.
Hardware and software	• Computer with Internet access
Sequenced learning activities	Teacher: • splits the class up into pairs • gives each student a copy of a map of Australia with state borders shown • explains to students that they are to be a tourist, taking a trip around Australia. They can choose their starting point, but they must travel around the country, sending postcards to their partner from two locations in each state using the website www.ozoutback.com.au/postcards/index.htm. For example, one student may start his/her journey in Emerald, Queensland and travel in a clockwise direction, and the student's partner may start his/her journey in Darwin and travel in an anti-clockwise direction. Students: • track their own journey (their 'sent' postcards) on their map of Australia in one colour and track their partner's journey (their 'received' postcards) in another colour.
Links to support materials	Australian Travel Emporium www.austtravel.com.au/ Explore Australia www.exploreaustralia.com/ OzOutback www.ozoutback.com.au/postcards/index.htm Years 4–6 Rich Task #1: Travel Itineraries http://education.qld.gov.au/corporate/newbasics/html/richtasks/year6/resourcesrt1.html
Comments	Encourage students to send one card from the outback and one card from a coastal region in each state. This enhances the learning experience. Netscape users only – advise students not to preview their postcard and hit the 'back' button to make changes because the contents of their postcard may be lost. After the preview step, make any necessary changes and then hit 'Send Card'.

Maths and spelling puzzles

Suggested levels	Years 4–7
Key learning areas	Mathematics, English
Purpose	To create their own mathematics and spelling homework.
Hardware and software	• Computer with Internet access • Printer
Sequenced learning activities	Students: • select spelling words or maths activities suitable for homework • open the Puzzlemaker website • choose one of the puzzle options from the drop down menu (criss-cross and word search are good for spelling words) • follow the instructions to create the puzzle • print and photocopy the puzzles for other students to complete.
Links to support materials	Edhelper www.edhelper.com Hot Potatoes Home Page http://web.uvic.ca/hrd/halfbaked/ Puzzlemaker www.puzzlemaker.com
Comments	Homework can be a tedious thing to get organised. I find that students are eager to complete homework they have created.

Meeting online experts through The Learning Place

Suggested levels	Years P–12
Key learning areas	All
Purpose	To discuss a topic with an expert in the field.
Hardware and software	• Computers with Internet access
Sequenced learning activities	Teacher: • Goes to http://education.qld.gov.au/learningplace and joins the Learning Place. • Clicks on the 'Communication' link and then on 'Create a project'. • Completes the basic project properties form. Once a project room is created, you can change these details at any time through the 'Project admin' link. • Clicks 'Create'. This action will generate a project room, display it in the project area and provide a project admin link when you log in to the project. You can use the project admin link to change the details of your project. • Creates student logins and runs a practice session. • Provides the online guest with a login and runs a practice session. • Organises a time for students to chat with the guest. This can be done in a forum or chat room in the project area. Students log in and chat with the guest.
Links to support materials	The Learning Place http://education.qld.gov.au/learningplace Project rooms http://education.qld.gov.au/itt/service/communication/project.html In the classroom http://education.qld.gov.au/itt/service/communication/chat/classroom.html
Comments	Online guests provide students with direct access to people with current and informed knowledge on a topic. Guests could include scientists, authors, refugees, illustrators, doctors, company directors, firemen, athletes, musicians and other students to name a few. You could also use the online communication tools on the Learning Place to participate in collaborative projects, surveys, general discussions and meetings.

Mind mapping a story

Suggested levels	Years 4–7
Key learning areas	English
Purpose	To use PowerPoint to mind map a story.
Hardware and software	• Computer • Microsoft PowerPoint
Sequenced learning activities	Teacher: • organises guided reading groups to enable students to become familiar with the story-line and character development presented in a book • prepares a PowerPoint presentation that contains a summary of the plot, settings or characters involved in the book (making sure the presentation is not too long so that students are not confused by too much information). Students: • play the PowerPoint presentation and read through the information on each slide • reorganise the presentation so that it is consistent with the original story • share their presentation with the rest of the class when they are satisfied that it is correct • may wish to illustrate their slides with appropriate pictures. Extension • Students can create their own story map and change the sequence for another student to solve.
Links to support materials	The Concept Mapping Homepage http://users.edte.utwente.nl/lanzing/cm_home.htm TIPS: PowerPoint for beginners http://education.qld.gov.au/tal/tips/01798.htm
Comments	This is a good way of integrating ICTs into reading group activities and utilising the PowerPoint skills that students have already gained. Meaningful whole-class discussion can be facilitated through the use of this medium. When the students are familiar with this activity they can prepare similar activities for their peers based on their own summary of a story.

Online learning through The Learning Place

Suggested levels	Years 4–12
Key learning areas	All
Purpose	To participate in a ready-to-go online learning course through The Learning Place.
Hardware and software	• Computers with Internet access
Sequenced learning activities	Teacher: • Goes to http://education.qld.gov.au/learningplace and joins the Learning Place. • Clicks on the 'Online learning' link and chooses one of the 'Ready-to-go courses'. • Views the course demo to ensure it suits the learning needs of their students. • Emails the Learning Place administrator to request access to the course: learning place@qed.qld.gov.au. • Emails the Learning Place administrator a list of the students' names on the spreadsheet provided. • Begins the course with their students. The teacher will be the facilitator of the course and can manage the users in groups and add forums, quizzes, announcements and extra content where needed.
Links to support materials	Course development http://education.qld.gov.au/publication/production/courses/index.html Courses http://education.qld.gov.au/staff/learning/courses/courses.html Read how others have implemented online learning http://education.qld.gov.au/staff/learning/courses/sguest-2003.html Ready-to-go courses http://education.qld.gov.au/staff/learning/courses/ready.html The Learning Place http://education.qld.gov.au/learningplace
Comments	Education Queensland staff can also develop their own courses for students and staff. Visit the Learning Place to start your online learning journey.

Photo stories

Suggested levels	Years 4–9
Key learning areas	The Arts, English, LOTE, Science
Purpose	To apply understandings of visual communication to create a photo story.
Hardware and software	• Digital camera/scanner • Software programs such as Microsoft Word, Publisher or PowerPoint • Paint program such as Microsoft Paint
Sequenced learning activities	Students: • use a digital camera or print camera and scanner to collect digital images that represent specific events such as the metamorphosis of a caterpillar or events from their own life • open a blank Word, PowerPoint or Publisher document • insert their images into textboxes so they can be arranged to create a visual story • write a story based on the photographs • rearrange the order of the photographs to tell a different story • rewrite the story based on the new photographs • use a paint program to create a montage of the images collected and experiment with size and positioning • enhance their montage by adding text • save and print the final products.
Links to support materials	English online: Search Results: Storyboard http://english.unitecnology.ac.nz/results.html?limit_to=%2Fresources%2Funits%2F&search=storyboards Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2b01.html TIPS: Making Multimedia http://education.qld.gov.au/tal/tips/ealthelp/docs/makemm.doc TIPS: PowerPoint for beginners http://education.qld.gov.au/tal/tips/01798.htm
Comments	Using the final image/montage as stimulus for poetry or creative writing may extend this activity. This activity will need to be completed over several sessions.

Problem solving within the school environment

Suggested levels	Years 4–7
Key learning areas	Studies of Society and Environment, Mathematics
Purpose	To propose solutions to a real-world problem that will help to create a better school environment and promote active citizenship. For example, solving the problem of erosion in a school environment.
Hardware and software	• Computer • Digital camera • Scanner • Colour printer • Software programs such as Microsoft Word and Microsoft Publisher Optional • Inspiration • Microsoft Excel • Drawing program
Sequenced learning activities	Students: • photograph an area in the school grounds in danger of erosion • use Word to construct a report for interested parties explaining the problem; include text and digital photos • brainstorm possible solutions to the problem (optional use of mind-mapping software such as Inspiration) • draw a to-scale site plan using either pencil and grid paper or a drawing program • create a budget table in Word or a spreadsheet in Excel for the repair work • use Word to create a presentation outlining their proposed solution to the problem; include text, a scanned copy of their site plan, their budget and a timeline • manage the repair to the site with teacher support • arrange for an 'official opening' of the repaired site • use Publisher to create invitations • take photographs at the opening • write captions for the photographs and post them on the school intranet site • write a news item for the school newsletter, including photographs.

Continues next page

Problem solving within the school environment

Suggested levels	Years 4–7
Links to support materials	Inspiration software: Kidspiration (includes a free 30-day trial) www.inspiration.com/productinfo/kidspiration/index.cfm Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2b01.html QSA The Arts module: Making meaning www.qsa.qld.edu.au/yrs1_10/kla/arts/pdf/modules/me_3_mm.pdf The Concept Mapping Homepage http://users.edte.utwente.nl/lanzing/cm_home.htm TIPS: Using applications http://education.qld.gov.au/tal/tips/01780.htm
Comments	Groups within a Year 6 class selected an environmental problem within their school, planned how to address the concern and took action and reflected on the impact of that action before planning their next step.

Sports training video

Suggested levels	Years 7–9
Key learning areas	Health and Physical Education, English
Purpose	To develop videoing skills and video editing skills while creating a short sports training video on a particular skill such as shot-put.
Hardware and software	• Computer • Digital video camera • Video editing software such as iMovie
Sequenced learning activities	Students: • select a sporting skill and decide which students have the ability to demonstrate it • form pairs or groups of four and plan their photo shoot, taking into consideration who will film, direct and act • take turns over several sessions to video the skill from several different angles, including examples of correct and incorrect techniques • use the video editing software to edit out the unwanted footage and record a commentary (if they have the necessary skills).
Links to support materials	Developing concepts and skills for physical activity http://education.qld.gov.au/tal/tips/docs/01894c.doc iMovie www.apple.com/imovie/download/ iMovie Skills www.tawa.school.nz/Learning/ICT/ICTiMovie.html#two Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2b01.html
Comments	iMovie from Apple (included on all Apple computers) is a very easy program to use. A similar result could be achieved by taking still digital photos and importing them into a PowerPoint presentation or QuickTime movie.

Temperature record

Suggested levels	Years 5–9
Key learning areas	Science, Mathematics
Purpose	To keep a record of the daily temperature for a set period using web resources or their own thermometer.
Hardware and software	• Computer with Internet access • Spreadsheet program such as Microsoft Excel
Sequenced learning activities	Students: • set up a spreadsheet that contains the dates for a set period • measure the temperature at a set time of day or access an Internet website and find the temperature at 9 am for their local area • input the information into the spreadsheet • at the end of the period, convert the text data into a graph or chart (Excel – highlight the information and click on the 'Chart Wizard' icon. AppleWorks spreadsheet – highlight the information and go to 'Options, Make Chart'.) • use the following formula to calculate the average temperature during the period: =average(first cell:last cell).
Links to support materials	Bureau of Meteorology: Australia. Queensland Observations www.bom.gov.au/weather/qld/observations.shtml Chart the Weather in Cities Around the World http://inspire.ospi.wednet.edu:8001/curric/weather/intlweat/index.html Earth and people, Weather and climate http://education.qld.gov.au/tal/tips/pdfs/01387.pdf TIPS: Using applications http://education.qld.gov.au/tal/tips/01780.htm Weather Here and There http://archive.ncsa.uiuc.edu/edu/RSE/RSEred/WeatherHome.html Wunderground.com www.wunderground.com/global/stations/94568.html
Comments	Basic spreadsheet knowledge is needed for this activity.

Using a spreadsheet for a party budget

Suggested levels	Years 4–9
Key learning areas	Mathematics
Purpose	To use spreadsheet software to plan a party with a limited budget.
Hardware and software	• Computer • Spreadsheet program such as Microsoft Excel
Sequenced learning activities	Teacher: • talks to the class about planning a birthday party • encourages discussion on the items they would like to have at their party, such as drinks, cake and balloons, and makes a list on the board • sets a dollar amount that the children can spend on their party. Students: • open a spreadsheet program and enter the list of items in the first column • enter the amount of money that they wish to spend on each item in the second column • highlight the cells to find the total amount in dollars • change the amounts to bring their total under or up to the set amount. Extension: • Students include a formula for multiple purchases – for example, five bottles of drink at $1.05.
Links to support materials	Spreadsheet help for assistance in creating formulas. TIPS: Using applications http://education.qld.gov.au/tal/tips/01780.htm TIPS: Using spreadsheets to teach children about budgeting http://education.qld.gov.au/tal/tips/pdfs/tn055.pdf
Comments	The complexity of this activity can be varied to suit the ability and age of the students.

Wanted poster

Suggested levels	Years 4–7
Key learning areas	English, LOTE
Purpose	To develop interview techniques by producing a wanted poster with a biographical slant for a fellow class member.
Hardware and software	• Computer • Digital camera • Word processing program such as Microsoft Word
Sequenced learning activities	Students: • take digital photos of each other and save them on the computer • discuss the information that should go on a wanted poster and consider suitable questions that could be asked to obtain this information. The posters should include information that might not be readily known – for example, they enjoy playing ice hockey or are a champion bull rider. Teacher: • formats a word processing document with the required subheadings and inserts a picture box ready for the students to insert the photo • saves a copy of the document into each student's folder on the network • partners students off. Students: • interview their partner to obtain the required information for the poster • enter the information into the formatted document • print the document and decorate or colour it.
Links to support materials	Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2b01.html TIPS: Making Multimedia http://education.qld.gov.au/tal/tips/ealthelp/docs/makemm.doc
Comments	This is a useful getting-to-know-you activity for the start of the year. Students who are more familiar with formatting documents may not need a preformatted document. A major emphasis can be placed on learning the talents of the quieter children in the class.

Writing a Logo program

Suggested levels	Years 7–9
Key learning areas	Mathematics, The Arts, Technology
Purpose	To write a Logo program that draws an original geometric design based on Navajo rug designs.
Hardware and software	• Computer • Logo-based software such as MicroWorlds
Sequenced learning activities	Students: • examine photos of Navajo rugs (available on the web) and copy some of the designs onto grid paper • create an original rug design using various elements (both copied and original). Their rug design should have the look and feel of a Navajo rug. • spend some time becoming familiar with the programming language • write programming procedures for the various elements of the rug – for example, a procedure for 'edge' and a separate procedure for 'corner'.
Links to support materials	MicroWorlds www.microworlds.com Navajo rugs www.canyonart.com/rugs.htm SOFWeb IdeaBank: Geometric Designs with 'Logo' www.eduweb.vic.gov.au/ideabank/activityDetail.asp?id=498 SOFWeb IdeaBank: Investigating Shapes www.eduweb.vic.gov.au/ideabank/activityDetail.asp?id=331 SOFWeb IdeaBank: Turtling Around www.eduweb.vic.gov.au/ideabank/activityDetail.asp?id=2725
Comments	Teachers will need to be experienced users of the Logo-based software to use this activity. The activity 'Introducing Logo-based programming' in this booklet is a useful introductory Logo activity. I found this a great activity to do after introducing the concepts of symmetry (flip, slide and turn).

The Curriculum Exchange

http://education.qld.gov.au/tal/curriculum_exchange/

The Curriculum Exchange is your gateway to quality online teaching and learning resources and information. It will enable you to:

- access quality online curriculum resources for all year levels and curriculum areas, both at school and at home
- transform learning in the classroom and support improved learning outcomes by providing access to quality online resources
- improve your ability to integrate ICTs into the curriculum
- help your school reach its systemic benchmark for the integration of ICTs in learning, teaching and the curriculum
- obtain help with recent advances in online learning, productive pedagogies, new basics and other curriculum innovations.

The online resources and services include:

TIPS

Teaching ideas, strategies and activities provided by Queensland teachers.

EduList

Links to websites that have been evaluated for their Queensland curriculum application.

MacquarieNet

An online reference service containing Australian and international reference works and daily news feeds from Australia's leading news providers – AAP and ABC online.

Online database of examples of ICTs curriculum integration

More than 800 best-practice examples of how ICTs can be used across all key learning areas and year levels.

Hot topics

Selected curriculum and teaching practice tools, including websites, modules, WebQuests and learning activities.

Multimedia Online

An online course that introduces students to the range of media elements that can be combined to produce successful multimedia productions.

Gateways

Collections for each key learning area as well as topics such as literacy.

Resource Finder newsletter

Monthly updates on new educational resources and services that are available through the Curriculum Exchange website.