Queensland the Smart State
Education and Training Reforms for the Future

Queensland Government
Education Queensland

ICTs for Learning

Years P–3
Practical Ideas for Teachers

Information and Communication Technologies

ICTs for Learning

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Information and Communication Technologies for Learning

Years P–3
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

Contents

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 young children and ICTs

Each child is unique and has individual needs and interests that differ according to age, gender, physical abilities, capabilities, aspirations, dispositions, experiences and learning preferences. Sociocultural backgrounds further characterise the individual learner. The development of curriculum programs should be responsive to and extend children's learning and provide a guide for the planning of integrated and holistic programs including the use of ICTs in the curriculum.

By actively supporting and facilitating students' learning, teachers can provide opportunities for self-directed play and expression using a variety of ICTs. Providing access to a range of open-ended and adaptable software programs can increase the ways in which students acquire, clarify, generate and extend understandings, capabilities and dispositions and support the development of students' feelings of independence, confidence and competence when facing new challenges.

As capable learners, young children:

- are increasingly able to differentiate visual detail. They:
  - are beginning to recognise the symbols and icons related to the operation and functions of ICTs
  - can consider the text-based instructions and other information presented on the screen, such as font size, amount of text and/or graphics and appropriateness. They are beginning to decipher non-linear text, presented in a variety of layouts
  - can recognise visual/auditory clues such as colour, size, graphics, text and sound
- have developed a number of the skills needed to use ICTs, such as:
  - keyboard, joystick, touch pad or mouse control skills
  - fine motor skills and hand–eye coordination
  - short-term sequential memory and spatial awareness
  - visual and auditory discrimination skills
  - familiarity with the functions, purposes and components of a variety of ICTs
  - increasing recognition of the symbols of written language and enhanced multiliteracy skills
- have developed the concepts and language needed to understand more symbolic and abstract information
  - ICTs can support the exploration of symbol systems and symbolic representations of familiar materials. While experimenting with a variety of ICTs, young children are constantly using many thought processes integral to the development of the cognitive domain and the realisation of cognitive capacities
- display prolonged concentration when highly motivated
  - Young children who are interested in the content of the software, and who are motivated by the challenge of playing with representations of knowledge and ideas presented in the abstract environment, benefit from computer-based learning

- learn through active manipulation of a range of stimulating, sensory-rich concrete materials
  - ICTs activities should not be used as a substitute for other experiences. When used in conjunction with real-life experiences, they can enhance, reinforce, support and extend these experiences
- learn through their interactions with others
  - The use of ICTs can support the development of social behaviours as children work in small groups, sharing ideas, suggesting strategies, listening carefully and negotiating turns. These experiences engage children in the kinds of social interactions likely to enhance positive feelings about themselves as lifelong learners and as active contributors in a learning community.

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

A class big book

Suggested levels	Years P–2
Key learning areas	English, Studies of Society and Environment
Purpose	To create a page in PowerPoint or a word processing program that includes a photograph of themselves and text and audio about themselves.
Hardware and software	• Computers with intranet access • Microphone for recording audio • Digital camera for taking photographs • Printer • Microsoft PowerPoint or word processing program
Sequenced learning activities	Students: • write information about themselves in accordance with the unit of work you are doing. Year 1 students can use dot points or short sentences to write about themselves. • create a document with room for a visual on one side and space for writing on the other • enter their personal information in the text area • take digital photographs and insert them in the picture section • insert their name at the top of the document • use appropriate recording software to record themselves reading the information on their slide • attach the audio files to their slides • print out their slides and paste them onto card to make a big book that is available for all class members to read. Slides can be compiled into a single presentation, with animation, and presented to parents during culminating activities for the unit. Audio will then be heard.
Links to support materials	How to insert digital photos into a Word document from a floppy disk http://education.qld.gov.au/tal/tips/01859.htm Kindergarten PowerPoint 'Book' Lesson Plan http://4dw.net/besteacher/ppt.html Making Class Big Books http://pages.cthome.net/jtburn/big_books.htm Making Multimedia http://education.qld.gov.au/tal/tips/ealthelp/docs/makemm.doc

Continues next page

A class big book

Suggested levels	Years P–2
	Microsoft Education: Lesson plan: All About Me www.microsoft.com/education/default.asp?ID=aboutme Tips For Making Computer Storybooks www2.edc.org/NCIP/tour/r-lit-compstory.html TIPS: PowerPoint for Beginners http://education.qld.gov.au/tal/tips/01798.htm
Comments	A parent or older student can assist the students to create their slides. Students may need assistance to create their audio files, but the process should be shared with the students.

A document about me

Suggested levels	Years 1–3
Key learning areas	Health and Physical Education, The Arts, Studies of Society and Environment
Purpose	To draft and edit sentences about themselves, import photographs of themselves into a document and type a few sentences about themselves below the picture.
Hardware and software	• Digital camera • Tripod (optional) • Computer • Word processing or web authoring program
Sequenced learning activities	Students: • take digital photographs of each other • save the photographs on the school server, a CD or floppy disk • measure their height and weight • draft and edit sentences about themselves – for example, hair colour, eye colour, favourite food, favourite colour, favourite hobbies, height and weight • import their photograph into a blank word processing or web authoring document • discuss and choose fonts, text size and text colour • type their sentences below their photograph • save their documents • print their document for a class display or work with the teacher to upload it to the class intranet page.
Links to support materials	All about me www.tki.org.nz/r/ict/ictpd/all_about_me_e.php How to insert digital photos into a Word document from a floppy disk http://education.qld.gov.au/tal/tips/01859.htm Microsoft Education: Lesson plan: All About Me www.microsoft.com/education/default.asp?ID=aboutme TIPS: All about me http://education.qld.gov.au/tal/tips/01023.htm
Comments	This activity can be revisited at the end of the year and the students can graph their growth and discuss any changes in data.

A healthy eating pyramid

Suggested levels	Years 2–3
Key learning areas	The Arts, Health and Physical Education, Science
Purpose	To draw a food group pyramid and create a picture of a healthy meal.
Hardware and software	• Computer • KidPix or paint program • Colour printer (optional)
Sequenced learning activities	**Part A** Students: • open KidPix or a similar program • use the straight line tool to draw a large triangle divided to represent the healthy food pyramid • use the text tool to label each section, create and format a title for the page and add their own name • use the fill tool to shade each section of the pyramid differently (optional) • select various stamps from stamp sets of foods and place them in the appropriate sections of the pyramid • save their pyramids and print them (optional) • add their pages to a class slide show. **Part B** Students: • open KidPix or a similar program • use the circle tool to create a dinner plate that fills the screen • use the pencil tool to draw a knife and fork beside the plate • use the same food stamps they chose in Part A to create a healthy meal with the appropriate weighting of food from each food group.
Links to support materials	AskERIC: Health Database www.askeric.org/cgi-bin/printlessons.cgi/Virtual/Lessons/Health/Nutrition/NUT0003.html KidPix Exploration www.learningspace.org/prof_growth/training/Kidpix/KidPixOverview.html TIPS: AppleWorks for beginners http://education.qld.gov.au/tal/tips/01795.htm

Continues next page

A healthy eating pyramid

Suggested levels	Years 2–3
	TIPS: KidPix in the classroom http://education.qld.gov.au/tal/tips/pdfs/ar077.pdf TIPS: Kids' Café http://education.qld.gov.au/tal/tips/01571.htm
Comments	**Part A** Instead of the students creating the pyramid, the teacher could create a template containing the pyramid and a selection of food stamp images that the students could cut and paste into place. Students could find more stamps to place. **Part B** The teacher could prepare a plate, knife and fork template. Students could evaluate the meals they create on the basis of healthy/not healthy and whether they are interesting, appealing and tasty.

An alphabet booklet

Suggested levels	Years 1–2
Key learning areas	English
Purpose	To practise specific word processing skills such as typing, formatting, saving, retrieving, editing, cutting, pasting and adding graphics.
Hardware and software	• Computer • Word processing program such as Microsoft Word • Clip art
Sequenced learning activities	Students: • create a new word processing document and name it 'My alphabet book' • search the clip art library for a picture that begins with 'A' • insert the clip art into their document (resizing if necessary) • write a sentence for the letter 'A': A is for _____ • repeat the process for all the other letters in the alphabet • save their document after each session (this activity will be completed over a few weeks) • print the finished alphabet document • cut out each page and paste it into a booklet.
Links to support materials	EyeWire www.eyewire.com/products/clipart/index.htm Hot Topics: Sound/symbol relationships – quick links http://education.qld.gov.au/tal/tips/hot_topics/01602.htm Kendra's colouring book www.isoverse.com/colorbook/ (Select picture/alphabet book) The Clip Art Connection www.clipartconnection.com/index.html These are the letters of the alphabet www.pacificnet.net/~cmoore/alphabet/index.htm TIPS: Alphabet Minibooks http://education.qld.gov.au/tal/tips/00832.htm
Comments	If time is an issue, this could be done as a class activity, with each student being given one or two letters to do. The booklet is then compiled by the whole class.

An excursion recount

Suggested levels	Year 3
Key learning areas	English, Technology, Science
Purpose	To create a whole-class recount of a recent excursion.
Hardware and software	• Computer • Colour printer • Digital camera • Word processing software
Sequenced learning activities	Students: • take 25–30 photos of all the significant elements of the excursion (making sure each student is in at least one photo) • print the photos • write about what is happening in the photo they are in • type their description into a word processing package (you may need to help them set up the document so that the text will print out under the photo) • feed their photo print-out into the printer and print the text underneath the picture • collate all the pages into a sequential recount of the excursion.
Links to support materials	How to insert digital photos into a Word document from a floppy disk http://education.qld.gov.au/tal/tips/01859.htm TIPS: Assisting novice writers to use their vocabulary choices in a simple recount of an event http://education.qld.gov.au/tal/tips/01424.htm TIPS: Grammar: Focusing on theme in a recount http://education.qld.gov.au/tal/tips/00680.htm TIPS: School camp http://education.qld.gov.au/tal/tips/01266.htm
Comments	This strategy works very well – I even use it with middle and upper primary school students. It can work quite well with just one computer in the classroom. Young children often find it easier to write about an excursion if they have a visual reminder of the day.

A simple family tree

Suggested levels	Years 2–3
Key learning areas	Studies of Society and Environment
Purpose	To enable students to understand their place in their family and that different families have different structures.
Hardware and software	• Computer • Digital camera or scanner • PowerPoint or word processing program
Sequenced learning activities	Students: • bring photos of their family • take photos of their photos or scan them • save the photos onto the computer • create a family history presentation or family tree by inserting the photos into a PowerPoint or word processing document • print out the pages to make a class big book.
Links to support materials	All about me www.tki.org.nz/r/ict/ictpd/all_about_me_e.php Ask Jeeves for Kids www.ajkids.com/kids42.asp?ask=family+trees&qSource=0&origin=0&metasearch=1&Ask%21.x=19&Ask%21.y=13 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/mod2a01.html TIPS: PowerPoint for beginners http://education.qld.gov.au/tal/tips/01798.htm
Comments	Teachers, teacher aides or parent helpers may need to have a working knowledge of PowerPoint or the word processing program and the camera or scanner. The photos could also be turned into a QuickTime movie of each student. Appropriate sensitivities need to be applied during this activity, depending on the family circumstances of the students.

A slide show

Suggested levels	Years 1–2
Key learning areas	English, Technology, Science
Purpose	To produce a 'What am I?' book and slide show.
Hardware and software	• Computer • KidPix, HyperStudio or PowerPoint
Sequenced learning activities	Students: • draft and edit their 'What am I?' information on paper • type the clues for their 'What am I?' into a KidPix, HyperStudio or PowerPoint document – for example, I have orange and black stripes, I live in the jungle, I have sharp claws and I kind of look like a cat. What am I? • decorate their page by changing the background or fill colour • save their page • make their answer page – for example, by typing 'I am a tiger' and drawing a picture of a tiger • save their answer page • print out both of their pages and compile them as class book. Teacher: • helps students compile the clue and answer pages into a slide show.
Links to support materials	KidPix www.kidpix.com KidPix Exploration http://www.learningspace.org/prof_growth/training/Kidpix/KidPixOverview.html TIPS: KidPix in the classroom http://education.qld.gov.au/tal/tips/pdfs/ar077.pdf TIPS: HyperStudio for beginners http://education.qld.gov.au/tal/tips/01797.htm TIPS: Minibeast 'What Am I?' interactive riddles http://education.qld.gov.au/tal/tips/01771.htm TIPS: PowerPoint for beginners http://education.qld.gov.au/tal/tips/01798.htm
Comments	The students in my class read the paper copy and watched the slide show numerous times. They also, without any guidance, discussed the differences between the illustrations drawn on and off screen.

A special card

Suggested levels	Years P–3
Key learning areas	The Arts, Studies of Society and Environment
Purpose	To create a special card that includes a photo of themselves.
Hardware and software	• Computer • Digital camera (or film camera and scanner) • Card-making or graphics program (optional) • Colour printer (if possible)
Sequenced learning activities	Teacher: • provides each student with an appropriate piece of card for a two-fold or four-fold card. Students: • take digital photos of each other • print their photos (in colour if possible) or import them into a word processing, graphics or card-making program • cut around their image and paste it onto the card or insert it into an electronic card template • decorate the card.
Links to support materials	Computer Crafts www.allcrafts.net/computer.htm How to insert digital photos into a Word document from a floppy disk http://education.qld.gov.au/tal/tips/01859.htm Kids Freeware www.kidsfreeware.com Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2a01.html
Comments	Students may need to practise using the digital camera and may want to explore basic photography techniques such as lighting and background. Some software includes card templates that can be modified to suit this activity.

A whole-class journal

Suggested levels	Years 1–3
Key learning areas	English, LOTE
Purpose	To participate in the ongoing collaborative creation of a class journal.
Hardware and software	• Computer • Word processing program such as Microsoft Word • Printer
Sequenced learning activities	Teacher: • sets up a Word file on the desktop called class journal • organises the classroom so the students can gather around the monitor • models how to enter text into the document • demonstrates alternative ways to do simple tasks – for example, keyboard shortcuts, menu buttons and icons • models journal genre and sentence structure. Students: • add entries to the class journal document (a different student each day) • insert pictures or clip art if appropriate • print out their entry and add it to a display folder for the rest of the class to read • save their entry.
Links to support materials	TIPS: Assisting novice writers to use their vocabulary choices in a simple recount of an event http://education.qld.gov.au/tal/tips/01424.htm TIPS: Grammar: Focusing on theme in a recount http://education.qld.gov.au/tal/tips/00680.htm TIPS: School camp http://education.qld.gov.au/tal/tips/01266.htm
Comments	Could also be done in Microsoft Publisher. Each entry could be saved to make an electronic book or printed off to make a class book.

Basic animation

Suggested levels	Years 2–3
Key learning areas	Technology
Purpose	To create an animation using a presentation program such as PowerPoint or AppleWorks.
Hardware and software	• Computer • Presentation program such as PowerPoint or AppleWorks
Sequenced learning activities	Students: • start the program and open a new document • add a piece of clip art to the page • use the appropriate menu command to duplicate the slide • move the graphic to a new position on the duplicated slide • repeat steps three and four • use the appropriate menu commands to animate the graphics • view the show. The graphic will move around the screen.
Links to support materials	Amazing Animation Lessons on the Web www.amazing-kids.org/start.html Animation with a Digital Camera www.tki.org.nz/r/ict/ictpd/animation_digital_camera_e.php Making it move www.qsa.qld.edu.au/yrs1_10/kla/technology/sourcebook_modules.html Shareware www.shareware.com Think Quest www.library.thinkquest.org/11039/steps.html
Comments	Once students master this skill they will be able to create a larger scale animation by adding multiple graphics and backgrounds.

Be safe posters

Suggested levels	Years 1–3
Key learning areas	Health and Physical Education, Technology
Purpose	To create a poster promoting safety practices such as sun, pool and beach safety to be displayed around school in the lead up to the summer vacation.
Hardware and software	• Computer • Word processing program such as Microsoft Word • Access to relevant clip art or pictures – taken on a digital camera, available on a disk or through the word processing package or saved from the Internet • Colour printer • Laminator (optional)
Sequenced learning activities	Teacher: • prepares an example of a poster incorporating a border, slogan and a relevant picture/piece of clip art • copies a poster into each student's folder on the network. Students: • choose a summer safety topic for their poster • write a catchy slogan • open their version of the teacher's saved poster • replace the teacher's slogan with their own • insert a relevant picture or piece of clip art • change the border to one of their own choice • add their name to the poster • save their work • print their poster.
Links to support materials	EyeWire www.eyewire.com/products/clipart/index.htm Making Multimedia http://education.qld.gov.au/tal/tips/ealthelp/docs/makemm.doc Microsoft Education: Office Tips for Teachers www.microsoft.com/education/?ID=ClassTipsArchive Road Safety http://education.qld.gov.au/tal/curriculum_exchange/teachers/cross-curriculum/road-safety/html/module1.html Sun Safety and Let's get Wet! www.qsa.qld.edu.au/yrs1_10/kla/Health and Physical Education/sourcebook_modules.html

Continues next page

Be safe posters

Suggested levels	Years 1–3
	Swimming and Water Safety www.discover.tased.edu.au/Health and Physical Education/Swim/default.htm The Clip Art Connection www.clipartconnection.com/index.html TIPS: Using applications http://education.qld.gov.au/tal/tips/01780.htm
Comments	Providing students with an example to modify is a useful strategy for early primary students and ensures clear criteria are established for students to follow. All relevant pictures and clip art can be stored on the network by the teacher so the students can select from a limited number of relevant pictures. Completed posters can be laminated and displayed around the school.

Comparing and ordering pictures

Suggested levels	Years P–2
Key learning areas	Mathematics
Purpose	To use mathematical terminology to order and compare clip art pictures.
Hardware and software	• Computer • Software program such as Microsoft Word, Publisher or PowerPoint • Clip art pictures
Sequenced learning activities	Teacher: • provides students with a word-processed document that includes a clip art picture and three textbox labels containing the words 'big', 'bigger' and 'biggest'. Students: • copy and paste the picture until they have three copies of it • resize the pictures so they have three different-sized pictures • arrange the pictures in order of size • move the textboxes to match the labels to the pictures.
Links to support materials	Cool Math 4 Kids www.coolmath4kids.com/icapuzzle/index.html Daisy Maths www.daisymaths.com.au/ EyeWire www.eyewire.com/products/clipart/index.htm The Clip Art Connection www.clipartconnection.com/index.html
Comments	This activity can be repeated using a variety of number contexts such as tall, taller, tallest; short, shorter, shortest.

Completing a nursery rhyme cloze

Suggested levels	Years P–1
Key learning areas	English
Purpose	To use reading cues of prediction, reading on and re-reading to select and insert missing words into a nursery rhyme.
Hardware and software	• Computer • Word processing program such as Microsoft Word • KidPix or other multimedia program (optional)
Sequenced learning activities	Teacher: • types a selection of nursery rhymes with an * to mark the missing words • saves a copy into each student's folder. Students: • open the file in their own folder • read the nursery rhyme, noting the missing words • read the missing words at the bottom of the page • highlight one word at a time and drag it to the appropriate place • re-read the rhyme to check their work and delete the * place marker. Optional Once they have completed the rhyme, students could: • use clip art to illustrate it • change the border to one of their own choice • select a different font • add their own name and print it for addition to a class book (if a variety of rhymes are chosen).
Links to support materials	EyeWire www.eyewire.com/products/clipart/index.htm Hot topics: Nursery rhyme – quick links http://education.qld.gov.au/tal/tips/hot_topics/01644.htm KidPix Exploration www.learningspace.org/prof_growth/training/Kidpix/KidPixOverview.html Nursery rhyme time www.sbcss.k12.ca.us/sbcss/specialeducation/ecthematic/rhymes/index.html The Clip Art Connection www.clipartconnection.com/index.html

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Completing a nursery rhyme cloze

Suggested levels	Years P–1
Comments	The Word document can be saved once as a read-only file that students open and save into their own folders using 'Save as'. Instead of missing words, clip art pictures (of nouns) can be used to create a rebus nursery rhyme.

Copying and creating patterns

Suggested levels	Years P–1
Key learning areas	Mathematics, The Arts
Purpose	To continue a colour/shape pattern and then make one of their own by colouring in shapes in a Microsoft Word template, to become familiar with the drawing toolbar and to develop mouse skills.
Hardware and software	• Computers with/without Internet access • Word processing program such as Microsoft Word • Printer for hard copy (optional)
Sequenced learning activities	Teacher: • uses the Microsoft Word AutoShape option on the Drawing toolbar to create a template showing a regular shape repeated across the page • colours the first three or four shapes to make a colour pattern • creates a second row of shapes that have no coloured shading. Students: • complete the first pattern by clicking on the next shape and colouring it according to the pattern • use the second row of shapes to create their own pattern • save the file to their own folder or print it out.
Links to support materials	AskERIC – Patterns Lesson Plans www.askeric.org/cgi-bin/lessons.cgi/Mathematics/Patterns TIPS: Exploring shapes and patterns http://education.qld.gov.au/tal/tips/00748.htm TIPS: Patterning http://education.qld.gov.au/tal/tips/00742.htm
Comments	The Microsoft Word help function can be accessed if assistance with AutoShapes is required. This activity can become a Literacy centre activity or be done individually with a parent/helper. The activity can be extended to include more shapes of different types. Animals and other graphics can also be used to challenge students. The graphics may relate to a topic being covered in an integrated unit of work.

Counting in tens

Suggested levels	Years P–2
Key learning areas	Mathematics
Purpose	To count and group objects in sets of tens.
Hardware and software	• Computer • KidPix or paint program
Sequenced learning activities	Students: • open KidPix or a similar program • paint a random number of stars on to the screen • select the pencil tool and a colour • count groups of ten stars • draw a loop around the group of ten • repeat with a different colour until all possible groups of ten have been made • count the groups of tens and the ones, and then use the number stamps to write the numbers.
Links to support materials	A KidPix Math Learning Centre for Junior Students www.tki.org.nz/r/ict/ictpd/kidpix_maths_e.php KidPix www.kidpix.com/ KidPix Exploration www.learningspace.org/prof_growth/training/Kidpix/KidPixOverview.html KidPix in the classroom http://education.qld.gov.au/tal/tips/pdfs/ar077.pdf TIPS: KidPix in the classroom http://education.qld.gov.au/tal/tips/00887.htm
References	Sarah Clutterbuck Educational Adviser, Adaptive Technology Services
Comments	In KidPix, the paintbrush tool has a large variety of options other than stars. The stamp tool can be used instead of the paintbrush tool.

Creating a playdough animation

Suggested levels	Years P–1
Key learning areas	Technology, Communicating, Creating and Designing
Purpose	To use playdough or modelling clay to produce an animation based on a nursery rhyme.
Hardware and software	• Computer • Digital camera • Tripod • QuickTime Pro, Microsoft Movie Maker or Magic Theatre
Sequenced learning activities	Students: • use felt pieces to illustrate the nursery rhyme Hickory, Dickory, Dock – for example, by moving the mouse felt piece up the clock felt piece • use playdough or modelling clay to make a clock and a mouse • make the hands on the clock read 12 o'clock • set up the digital camera and the tripod and take the first digital photo – the clock with the mouse at the bottom of it • move the mouse slightly up the clock and take the second photograph • continue moving the mouse slightly up the clock and taking a photograph until the mouse reaches the top of the clock • move the 'hands' on the clock so they read one o'clock • take a photograph of the clock showing one o'clock • move the mouse slightly down the clock and take a photograph • continue moving the mouse slightly and taking photographs until the mouse is at the bottom of the clock again • work with the teacher to download the photographs • use appropriate software to open an image sequence • work with the teacher to save their work as a movie.
Links to support materials	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 Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2a01.html QuickTime Image Sequence www.apple.com/quicktime/authoring/slideshow

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Creating a playdough animation

Suggested levels	Years P–1
	TIPS: Year 4 Claymation http://education.qld.gov.au/tal/tips/01799.htm
Comments	Although the process seems quite complex, it really is an easy step-by-step procedure. Taking all the photographs is the hardest part and the students love doing this.

Demonstrating symmetry

Suggested levels	Years 2–3
Key learning areas	Mathematics
Purpose	To demonstrate that symmetry does not require plane shapes by creating a perfectly symmetrical drawing.
Hardware and software	• Computer • Paint program
Sequenced learning activities	Students: • open a new document and use the line tool to draw a straight vertical line. This will be the line of symmetry. • draw half of an object such as a person's face on one side of the line • use the lasso tool to select the image • copy and paste the selected image • use the menu bar to flip the pasted piece horizontally • use the eraser to remove the line of symmetry • grab the new piece with the lasso and place it carefully in position next to the original drawing.
Links to support materials	A KidPix Math Learning Centre for Junior Students www.tki.org.nz/r/ict/ictpd/kidpix_maths_e.php KidPix Exploration www.learningspace.org/prof_growth/training/Kidpix/KidPixOverview.html Line Symmetry www.adrianbruce.com/Symmetry/index.html#symindex No matter what shape your fractions are in http://math.rice.edu/~lanius/Patterns/
Comments	To further demonstrate the symmetry, print out the completed work and fold it along the line of symmetry.

Fridge magnets

Suggested levels	Years 2–3
Key learning areas	Health and Physical Education, Technology
Purpose	To design and create a fridge magnet that they can present as a gift to a family member.
Hardware and software	• Computer • Digital camera • Word processing program such as Microsoft Word
Sequenced learning activities	Students: • work in pairs to take digital photos of themselves • download their photos and insert them into a word processing document • resize the photo, add a border and insert text • print their work on to adhesive paper • stick their printed work on to a sheet of magnetic paper and cut to size.
Links to support materials	How to insert digital photos into a Word document from a floppy disk http://education.qld.gov.au/tal/tips/01859.htm Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2a01.html Nuffield Design and Technology – What should be stuck to your fridge? www.primarydandt.org/filelibrary/pdf/firdge_col.pdf 75 ways to use your digital camera www.semo.net/suburb/mgilmer/digcam/
Comments	Use shiny adhesive computer paper for a professional finish. This activity can be used with a variety of year levels. Inserting clip art images on to photos would add more variety for older students.

Identifying the attributes of 2D and 3D shapes

Suggested levels	Years 2–3
Key learning areas	Mathematics
Purpose	To categorise objects according to self-determined criteria.
Hardware and software	• Computer • Digital camera • Word processing program such as Microsoft Word
Sequenced learning activities	Teacher: • explains the properties of different 2D and 3D shapes. Students: • identify 2D and 3D shapes within the classroom • use a digital camera to take photos of 2D and 3D objects • download their photos into a word processing document. Teacher: • prepares a template for the photos, for students to access. Students: • work in groups to import photos of objects that have a certain attribute – for example, all circular objects • print out their page of photos and compile a class book.
Links to support materials	How to insert digital photos into a Word document from a floppy disk http://education.qld.gov.au/tal/tips/01859.htm Kendra's colouring book www.isoverse.com/colorbook/ (Select pictures/designs and shapes) Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2a01.html Plane Shapes http://education.qld.gov.au/tal/tips/docs/00983.doc Shape and space in geometry www.learner.org/teacherslab/math/geometry/index.html TIPS: Year 1 Maths cards http://education.qld.gov.au/tal/tips/01158.htm
Comments	The teacher could assist any students who are struggling with the activity to take the photos and import them.

Illustrating the life cycle of a living thing

Suggested levels	Years 2–3
Key learning areas	Science
Purpose	To illustrate the various stages in the life cycle of a plant or animal.
Hardware and software	• Computer • KidPix Studio, PowerPoint, HyperStudio or a word processing program
Sequenced learning activities	Students: • select a plant or animal and research its life cycle • open up the software program and use a drawing tool to draw coloured circles to represent each stage in the life cycle of a plant or animal • draw arrows between each circle to show the progression of the life cycle • use a variety of drawing tools from the toolbox to draw a picture of each stage of the life cycle or use clip art instead of drawing their own pictures • use the text tool to label each stage in the life cycle • print their life cycle charts and share them with the class.
Links to support materials	KidPix Exploration www.learningspace.org/prof_growth/training/Kidpix/KidPixOverview.html Part of a pattern www.netlearn.discover.tased.edu.au:8900/public/patternB/index.html TIPS: HyperStudio for beginners http://education.qld.gov.au/tal/tips/01797.htm TIPS: Lifecycles of caterpillars http://education.qld.gov.au/tal/tips/01008.htm TIPS: Looking for Tadpoles http://education.qld.gov.au/tal/tips/01007.htm TIPS: PowerPoint for beginners http://education.qld.gov.au/tal/tips/01798.htm
Comments	Kidspiration could also be used for this activity. If PowerPoint is used, students can make their life cycle into a slide show.

Labelling diagrams

Suggested levels	Years 1–3
Key learning areas	Science
Purpose	To label a diagram illustrating content covered in an integrated unit – for example, plants or insects.
Hardware and software	• Computer • Microsoft Publisher • Printer
Sequenced learning activities	Teacher: • finds a variety of relevant pictures or takes photos • inserts each picture into a Publisher document, resizing and positioning it as necessary • creates a textbox and makes labels and titles for each picture, and a place for the student's name at the bottom of the page • saves the pictures into a folder, giving the files the name of the item • creates and prints a model for the students to follow. Students: • open the folder and select and open a file • drag the label textboxes to the appropriate positions • use the line tool to draw an arrow from each label to the relevant part of the item • save the file into their own folder • print the finished diagrams. Extension • Students could insert pictures from the teacher-prepared folder into a blank Publisher document and create their own textbox labels and position them in appropriate positions.
Links to support materials	Using live insects in elementary classrooms http://insected.arizona.edu/uli.htm
Comments	Can be used as part of a science unit where elements of an item need to named and labelled.

Making number stories using the digital camera

Suggested levels	Years P–3
Key learning areas	Mathematics
Purpose	To photograph objects in the environment that relate to a given number and to write sentences about the objects.
Hardware and software	• Computer • Digital camera • Presentation program such as Microsoft PowerPoint
Sequenced learning activities	Teacher: • introduces basic digital camera techniques and care, such as placing the strap around their necks and trying to keep the camera as still as possible when taking a photograph • plays counting games with individuals or groups of students • explains to students that they are going to try to find things in groups of two in the classroom and outside. Students: • take it in turns to work in pairs and take photographs of pairs of things • download the photographs with the help of the teacher, teacher aide, peer buddy or a parent and import them into a blank PowerPoint document • write a short description of each photo. Teacher: • presents the students' presentations to the whole class.
Links to support materials	How to insert digital photos into a Word document from a floppy disk http://education.qld.gov.au/tal/tips/01859.htm Making number stories using the digital camera www.tki.org.nz/r/ict/ictpd/number_stories_e.php Microsoft PowerPoint www.microsoft.com/office/PowerPoint/default.htm Multimedia Online: Module 2: Acquiring images for multimedia http://education.qld.gov.au/tal/curriculum_exchange/students/learnonline/multimedia/mod2a01.html TIPS: PowerPoint for beginners http://education.qld.gov.au/tal/tips/01798.htm

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Making number stories using the digital camera

Suggested levels	Years P–3
	TIPS: Suggested teaching sequence for numbers 1–10 http://education.qld.gov.au/tal/tips/00731.htm Using PowerPoint for Basic Maths www.tki.org.nz/r/ict/ictpd/downloads/making_number_stories.pdf
Comments	Different groups of children can be assigned different numbers. Supervision can be provided by parents or teacher aides as required while students leave the classroom to take photographs. Buddy students from higher grades can help the students take the photographs, download them and insert them into PowerPoint.

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.

Rearranging sentences

Suggested levels	Years P–3
Key learning areas	English, Science, Studies of Society and Environment
Purpose	To read for meaning and sequence by moving textboxes into the correct order.
Hardware and software	• Computers • Software programs such as Microsoft Word or Microsoft Publisher
Sequenced learning activities	Teacher: • creates a document containing a number of jumbled sentences typed into textboxes. The information in the textboxes can be taken from a text the students are reading in class or a story with which they are familiar. Additional boxes containing pictures from the story can also be included for the students to move next to the completed sentences. Students: • work in pairs to move the textboxes into the correct order • save or print their work.
Links to support materials	TIPS: Developing word recognition http://education.qld.gov.au/tal/tips/00486.htm TIPS: Expand a sentence http://education.qld.gov.au/tal/tips/00183.htm TIPS: Familiar rhymes http://education.qld.gov.au/tal/tips/00855.htm TIPS: Morning Session: Year 3 http://education.qld.gov.au/tal/tips/docs/01099.doc TIPS: Syntactic understanding – words in sentences http://education.qld.gov.au/tal/tips/00375.htm
Comments	Ensure textboxes have a border around them so students can see the outline of the box. Copy and paste textboxes to make sure they are the same size. Encourage students to look for the four-headed arrow before trying to move a textbox. Younger students will need more room on the page to move textboxes, so only fill half of a landscape page with text. The prepared template can be used for fictional, factual or procedural texts.

Recording changes – Creating an image sequence

Suggested levels	Years 2–3
Key learning areas	Science
Purpose	To understand that plants have needs and to produce an image sequence showing the changes during the life cycle of a plant.
Hardware and software	• Computers • Digital camera • QuickTime Pro, Microsoft Movie Maker or Magic Theatre
Sequenced learning activities	Students: • brainstorm and discuss the needs of plants • work in groups to choose a fast-growing plant they wish to grow • work in groups to plant their seeds • work out a timetable to ensure every group member gets a chance to take a photo of the plant • take a digital photograph of their plant every day or every two days until the plant has grown to a desired height • save their photographs in a folder • use appropriate software to open an image sequence • save the image sequence.
Links to support materials	Magic Theatre www.magictheatre.com/mt.html 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/mod2a01.html QuickTime Pro Tutorial www.apple.com/quicktime/authoring/slideshow School Gardens http://aggie-horticulture.tamu.edu/kindergarden/Child/school/sgintro.htm TIPS: Plants: Growing Seeds http://education.qld.gov.au/tal/tips/01073.htm

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Recording changes – Creating an image sequence

Suggested levels	Years 2–3
Comments	The students in my class enjoyed producing the movie and watching the plant grow over and over again. They then applied their new skill to other processes. For example, one child brought in eggs and we made a movie about the hatching of chickens. We also took digital photographs of the process when making a mosaic and later made an image sequence that the students used to learn about procedural texts.

Resizing images

Suggested levels	Year 1
Key learning areas	Maths, English
Purpose	To import clip art pictures of the characters and props from the three bears and to use resizing skills.
Hardware and software	• Computers • Word processing program such as Microsoft Word
Sequenced learning activities	Teacher: • prepares a document with the following text spaced over the page in separate textboxes – The three bears; had three bowls of porridge; three chairs; and three beds • saves a copy of this file in the students' folders. Students: • open the file • open the clip art gallery • read the worksheet and search the clip art gallery for pictures of bears, bowls, chairs and beds • select clip art and insert it into appropriate positions on the page • either use the same piece of clip art and resize it to big, middle and small or choose different images and resize them. • label their pictures to include size words – for example, 'the big bed'.
Links to support materials	EyeWire www.eyewire.com/products/clipart/index.htm Fairy tales – quick links http://education.qld.gov.au/tal/tips/hot_topics/01643.htm Google Image Search http://images.google.com/ Microsoft Education: Lesson plans www.microsoft.com/education/default.asp?ID=Publisher2000Tutorial The Clip Art Connection www.clip artconnection.com/index.html
Comments	Help students to resize the clip art gallery so they can see their document and can copy the correct spelling of the search words.

Talking computers

Suggested levels	Years P–2
Key learning areas	English
Purpose	To recognise their names in text and audio format.
Hardware and software	• Computers • A program that reads typed text, such as Text Edit (a standard inclusion with Apple Macs) • Digital camera (optional)
Sequenced learning activities	Teacher: • types instructions to go to lunch and the names of the students in the class into the computer in a large font • adds a digital photograph of each student (optional). Students: • sit in front of the computer while the teacher presses 'Read text' • listen and wait for their name to be called • follow the instructions given by the computer when their name is called.
Links to support materials	5 star shareware www.5star-shareware.com/Utilities/Voice-Speech/Voice-Speech1.html
Comments	The absolute amazement and joy from the children when they hear their name is extraordinary. Most children cannot believe that the computer 'knows them all'. The order of the children's names may be rearranged each day.

Wrapping paper

Suggested levels	Years 2–3
Key learning areas	The Arts, Studies of Society and Environment
Purpose	To reinforce students' knowledge of family and cultural celebrations, increase their copy and paste skills and integrate ICTs and art.
Hardware and software	• Computers • Word processing program such as Microsoft Word • Printer
Sequenced learning activities	Students: • brainstorm a list of family and cultural celebrations • link the celebrations with a colour • examine and discuss the patterns on wrapping paper, using several examples • select one celebration • type the name of the celebration into a blank word processing document and use the copy and paste function to cover the whole page with text • select a piece of paper in a colour linked with the celebration and print the document.
Links to support materials	Crayola www.crayola.com/search/results.cfm?keywords=wrapping+paper Primary ArtQuest http://schools.gedsb.on.ca/curriculum/art/primaryartquest.htm Silly Billy's Computer Art Center www.sillybilly.com/draw95.html TIPS: Patterning http://education.qld.gov.au/tal/tips/00742.htm TIPS: Special occasions – Early childhood http://education.qld.gov.au/tal/tips/pp/01661.htm
Comments	Students can use features of the word processing software such as fonts and font size to vary their pattern.

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.