Making it move

Strand	Organiser	Level						
		1	2	3	4	5	6	B6
Technology Practice	*Investigation*							
	Ideation							
	Production							
	Evaluation							
Information	*Nature*							
	Techniques							
Materials	*Nature*							
	Techniques							
Systems	*Nature*							
	Techniques							

Purpose

The activities in this module are planned to provide students with opportunities to design and create a simple animation or slide show using a multimedia software program that they are familiar with, such as Kid Pix, PowerPoint or HyperStudio. Students identify their own needs and wants and generate possible ideas for their animation or slide show.

Overview

The following table shows the activities in this module and the way in which these are organised into orientating, enhancing and synthesising phases.

Orientating	Enhancing	Synthesising
Make a flipbook. View simple animations and evaluate their effectiveness in terms of meeting a design challenge. Explore how animations have been developed and how they are currently developing. Use a range of sources to investigate and record information about making animations and establish the relevance of information collected when meeting a design challenge.	Collaboratively develop and follow production procedures to make an animation or slide show that reflects their design challenge. Evaluate design ideas and production procedures. Select and use techniques to generate, modify and present the animation or slide show. Produce a simple animation or slide show. Compare the flipbook and the animation or slide show and describe the advantages and disadvantages of each product.	Transform and transmit the animation or slide show to different audiences. Use the animation or slide show on the school's website. Test and judge the effectiveness of their own and others' processes and products in terms of meeting their design challenge.

Core learning outcomes

This module focuses on the following core learning outcomes from the *Years 1 to 10 Technology Syllabus*:

Technology Practice

TP 3.1 Students examine knowledge, ideas and data from a range of sources and establish the relevance of this information when meeting design challenges.

TP 3.2 Students collaboratively generate design ideas and communicate these using presentations, models and technical terms.

TP 3.3 Students cooperatively develop and follow production procedures to make products that reflect their design ideas.

TP 3.4 Students test and judge how effectively their own and others' processes and products meet the design challenge.

Information

INF 3.1 Students describe advantages and disadvantages of different sources and forms of information.

INF 3.2 Students select and use techniques for generating, modifying and presenting information for different purposes.

Core content

The core learning outcomes are the focus for planning learning activities and assessment tasks. Students will engage with core content (see pp. 37-40 of the syllabus) when they are provided with opportunities to demonstrate core learning outcomes. While the content is listed in strands for organisational convenience, no one part of that content is to be viewed as discretely associated with a single strand.

The organisation of content within a strand should not be considered hierarchical. Any of the content can be addressed at any appropriate level; not all of the content need be addressed at every level. Core content should be selected to suit students' needs, interests and abilities and to take account of their prior knowledge and experiences.

The core content should be studied in a range of contexts. These could include personal and global contexts, as well as contexts of agriculture, business, communities, home and family, industry, leisure and recreation, and school

Using this module

The activities in this module are designed to provide opportunities for students to demonstrate Level 3 core learning outcomes. These activities can also provide opportunities for students to develop and demonstrate the related learning outcomes at other levels. In order to do this, teachers will need to prepare additional sets of anticipated evidence derived from the related learning outcomes at different levels. They may also need to modify aspects of the activities.

This module includes a variety of sequenced activities requiring varying amounts of time. Teachers can modify the design brief and related activities depending on the local contexts, particular needs and prior knowledge of students and the availability of materials and resources.

Evaluation of a unit of work

After completion of a unit or units of work developed from this module, teachers collect information and make judgments about:

- teaching strategies and activities planned or selected to allow students to demonstrate the core learning outcomes
- future learning opportunities for students who have not yet demonstrated the core learning outcomes and to challenge and extend those students who have already demonstrated the core learning outcomes
- the extent to which activities matched needs of particular groups of students and reflected equity considerations
- the appropriateness of time allocations for particular activities
- the appropriateness of resources used.

Information from this evaluation process can be used to plan subsequent units of work so that they build on, and support, student learning. The evaluated units of work may also be adapted prior to their reuse. For further information, refer to the ‘Curriculum evaluation’ section of the sourcebook guidelines.

Advice to teachers

Students will need to have background experience in and knowledge of the use of the software applications used in this module. Teachers may need to orientate the students in the use of different applications related to scanners and digital cameras and assist them to resize and save pictures, import images into programs and save files.

Bmp file format must be used in the Kid Pix program. It is best to design the pictures in the Kid Pix program if using them in the slide show application. Gif and jpg file formats can be used in most other applications and transported between applications.

Resources

Students’ creativity in demonstrating core learning outcomes in this module should not be limited by the range and scope of resources and equipment provided by the teacher. A variety of resources should be collected over time and should be safely stored and made available to students as required.

It may be necessary to organise for several computers to be available at the same time during this module. Access to other multimedia equipment such as a scanner and/or digital camera may also be necessary for some activities.

Links

Links to other key learning areas

Activities from this module can be used as part of an integrated unit that makes links to other key learning areas. When incorporating this module into an integrated unit of work, teachers can select activities that provide opportunities for students to demonstrate learning outcomes from other key learning areas and identify anticipated evidence of students' demonstrations of these learning outcomes. It is important, however, that the integrity of the processes and concepts within key learning areas is maintained.

The Arts (Media)

Students could have opportunities to combine and manipulate media languages and technologies to construct intended meanings.

Students could have opportunities to present media texts to a specified audience using presentation techniques associated with particular media forms.

Studies of Society and Environment

Students could have opportunities to use evidence about innovations in media and technology to investigate how these have changed society.

Contributions to the cross-curricular priorities

This module contributes to students' development of the cross-curricular priorities:

Literacy, as students interpret and communicate information in different forms. They use electronic and print media to locate, interpret and store information, and recognise and use terminology and symbols associated with design and technology in a range of contexts. Students also understand that information needs to be presented in a way that is inclusive of all individuals and groups.

Numeracy, as students may estimate, count, collect, collate, graph, map and critique technological data and statistics

Lifeskills, as students develop skills in communicating technological information and ideas. They use interpersonal skills in cooperative learning situations

A futures perspective, as students consider the effects of technological development on individuals, communities and environments. They envision and work towards preferred futures by using the knowledge, practices and dispositions of 'working technologically'.

The valued attributes of a lifelong learner

The overall learning outcomes of the Queensland Years 1 to 10 curriculum contain elements common to all key learning areas and collectively describe the valued attributes of a lifelong learner.

The following points indicate how various activities in this module might contribute towards the development of these attributes.

Knowledgeable person with deep understanding

- recognises and anticipate changes in technology within societies
- understands principles used to design and develop products
- develops understandings about investigation, ideation, production and evaluation understand the nature of information, materials and systems and use
- appropriates techniques to manipulate them.

Complex thinker

- compares and critically evaluate the appropriateness of past and present technologies and the impacts of future technologies
- makes decisions and justify choices in realising the designs.

Active investigator

- explores aesthetic, cultural, economic, environmental, ethical, functional and
- social implications
- generates and access information from a variety of sources.

Responsive creator

- uses imagination, originality, intuition, enterprise and aesthetic judgment
- when meeting design challenges
- explores techniques to create new effects.

Effective communicator

- comprehends information presented in various forms.
- explores ideas critically and articulate feelings and values in debating issues
- related to technology.

Participant in an interdependent world

- develops dispositions of confidence and critical thinking as they design, develop and use technology
- works individually and collaboratively on a variety of design challenges with confidence and initiative
- negotiates with others and resolve conflict in appropriate ways as they work towards common goals and share equipment and resources.

Reflective and self-directed learner

- displays self-motivation and perseverance in seeing projects through to completion
- looks for and recognise ways of 'working technologically' in everyday life.

Assessment strategies

The assessment opportunities outlined are examples of how to assess students' demonstrations of the identified learning outcomes. As often as possible, negotiate assessment with students and support a variety of ways of demonstrating the learning outcomes. Reflect with students on evidence gathered when making judgments about their demonstrations of learning outcomes. Some students may require more time and/or other contexts in which to demonstrate these learning outcomes. Other modules may provide such time and/or contexts

Suggestions for gathering information about student learning are provided in the activities section of this module. The table below provides descriptions of anticipated evidence that teachers might gather to support their judgments about students' demonstrations of learning outcomes and suggests sources of evidence. The table is neither exhaustive nor mandatory. Once sufficient evidence has been collected, judgments can be made about students' demonstrations of learning outcomes.

Core learning outcomes	Anticipated evidence	Sources of evidence
TP 3.1 Students examine knowledge, ideas and data from a range of sources and establish the relevance of this information when meeting design challenges.	Draw on a range of different sources to inform the development of their product and processes. Look at commercial products to determine how others have designed products.	Anecdotal notes. Consultation with students to verify the evidence gathered.
TP 3.2 Students collaboratively generate design ideas and communicate these using presentations, models and technical terms.	Work with others to generate design ideas. Construct a model or prototype of their design ideas. Record and present their ideas using technical terms such as transitions, effects and frames.	Annotated work samples. Feedback sheets.
TP 3.3 Students cooperatively develop and follow production procedures to make products that reflect their design ideas.	Work effectively as a member of a team. Follow procedures to make their animation using their design ideas.	Observation of students as they participate in planned activities. Focused analysis.
TP 3.4 Students test and judge how effectively their own and others' processes and products meet the design challenge.	Effective use of animations to enhance or convey meaning on, for example, a web page. Ask others for feedback on how effective their animation is and if it meets the design challenge.	Peer and self-assessment sheets. Technology project folios.
INF 3.1 Students describe advantages and disadvantages of different sources and forms of information.	Choose particular sources of information that are appropriate to their needs. Adopt ideas from a group project to use in their own designs.	Anecdotal notes. Consultation with students to verify the evidence gathered. Annotated work samples.
INF 3.2 Students select and use techniques for generating, modifying and presenting information for different purposes.	Use the Internet, CD-ROMs and publishing programs to access information and present it in different ways. Use specialised equipment such as digital cameras, scanners and video and audio devices.	Focused analysis. Observation of students as they participate in planned activities. Technology project folios.

In gathering evidence to make judgments about students' demonstrations of core learning outcomes, it may be necessary to look at the level above and below Level 3. The following table indicates evidence of the level below. Students may be demonstrating core learning outcomes at another level.

Core learning outcomes	Anticipated evidence	Sources of evidence instruments
TP 2.1 Students organise knowledge, ideas and data about how needs and wants might be met and use this information when meeting design challenges.	Record information in journals, reports and diaries and use this information when meeting their design challenge.	Anecdotal notes. Consultation with students to verify the evidence gathered. Annotated work samples.
TP 2.2 Students generate design ideas, acknowledge the design ideas of others and communicate their design ideas using annotated drawings that identify basic design features.	Communicate their design ideas through drawings that include labels of basic features.	Observation of students as they participate in planned activities. Peer- and self-assessment sheets.
TP 2.3 Students identify, sequence and follow production procedures to make products of their own design.	Identify and follow a sequence in the production of their product.	Technology project folios.
TP 2.4 Students compare initial design ideas with final products and give reasons for similarities and differences.	Compare the original design with the final product and discuss the reasons for any changes.	Focused analysis.
INF 2.1 Students explain the purposes of different forms of information and describe how these are used in everyday life.	Explain the need for and purposes of different forms of information and how they are used to instruct, persuade, inform and report. Recognise how forms of information affect their lives. Consider which forms of information they, their family and friends access.	Anecdotal notes. Consultation with students to verify the evidence gathered. Annotated work samples.
INF 2.2 Students use simple techniques for accessing and presenting information for themselves and others.	Create simple presentations using computer software. Examine how others represent and communicate their ideas and information.	Observation of students as they participate in planned activities. Focused analysis. Peer- and self-assessment sheets. Technology project folios.

Background information

Terminology

In this module students have opportunities to become familiar with and use the following terminology:

animations	gif files	multimedia
bmp	html	transform
effects	import	transitions
frames	jpeg files	transmit

School authority policies

Teachers need to be aware of and observe school authority policies that may be relevant to this module, particularly policies that relate to student access to the Internet and appropriate etiquette.

Safety policies will be of particular relevance to some of the activities that follow. It is essential that teacher demonstrations and student activities are conducted according to procedures developed through appropriate risk assessments at the school.

Equity considerations

This module provides opportunities for students to increase their understanding and appreciation of equity and diversity within a supportive environment. It includes activities that encourage students to:

- be involved
- work individually or in groups
- value diversity of ability, opinion and experience
- value diversity of language and cultural beliefs
- support one another in their efforts
- become empowered to communicate freely
- negotiate
- accept change.

Some students with disabilities may need assistance with some activities. Advice should be sought from their support teachers. It is important that these equity considerations inform decision making about teaching strategies, classroom organisation and assessment.

Activities

Orientating activities

Focus

TP 3.1 Students examine knowledge, ideas and data from a range of sources and establish the relevance of this information when meeting design challenges.

TP 3.2 Students collaboratively generate design ideas and communicate these using presentations, models and technical terms.

TP 3.4 Students test and judge how effectively their own and others' processes and products meet the design challenge.

Teaching considerations

Refer to the 'Advice to teachers' section in the module.

Resources

Internet access and related software

Multimedia software

Student resource 1

Teacher	Students
Provide background information and instructions on how to make a flipbook.	*Make a flipbook.* • Use Student resource 1 and/or other sources to make a flipbook.
Direct students to appropriate Internet sites where they can view animations. Hold a class discussion about the design challenge, appropriateness and context of the animations.	*View simple animations and evaluate their effectiveness in terms of meeting a design challenge.* • Identify the design challenge that may have been met when creating the animation. • Identify the purpose, appropriateness and context in which the animation is set.
Collect this information and discuss the need to find out more about the design of animations.	*Explore how animations have been developed and how they are currently developing.* • Work in groups or individually and write down all their prior knowledge about animations.
If necessary, help students focus on the purpose and use of animations. Explore how animated gifs are used on web pages and in banners and advertisements.	*Use a range of sources to investigate and record information about making animations and establish the relevance of information when meeting a design challenge.* • Use library books, Internet sites and videos to gather information about making animations. • Investigate the history of animations. • Record information in Technology project folios and use it to help inform the development of products.

Assessment

Sources of evidence could include:

- drawings and designs in Technology project folios
- explanations of work in progress
- contributions to and participation in activities and discussions
- suggestions about the different ways of solving the problem.

Enhancing activities

Design challenge
Design and create an animated logo or slide show for use on a school web page to promote your school.

Focus

TP 3.3 Students cooperatively develop and follow production procedures to make products that reflect their design ideas.

TP 3.4 Students test and judge how effectively their own and others' processes and products meet the design challenge.

INF 3.1 Students describe advantages and disadvantages of different sources and forms of information.

INF 3.2 Students select and use techniques for generating, modifying and presenting information for different purposes.

Teaching considerations

Refer to the 'Advice to teachers' section in the module.

Resources

Computers

Internet access and related software

Multimedia software

Student resource 2

Teacher	Students
If necessary, assist students to include information about the number of frames per second, colour options, uniform size of images and the context in which the animation will be used.	*Collaboratively develop and follow production procedures to make an animation or slide show that reflects their design challenge.* • Work cooperatively to generate ideas and develop a layout for their animations. *Evaluate design ideas and production procedures.* • Evaluate their ideas and look at aspects of appropriateness, use and purpose of their animations. • Modify or refine their ideas to reflect their evaluation.
Make software programs such as Kid Pix or Windows Movie Maker available for students to use. The process of design may be ongoing with changes occurring as new information is gathered and as students evaluate their work on an ongoing basis.	*Select and use techniques to generate, modify and present the animation or slide show.* • Cooperatively develop a production procedure to use when producing the animation or slide show. See Student resource 2.
Students could animate their school logo or design their own animated logo. They could design an animated cartoon strip, a banner or an advertisement for the school web page.	*Produce a simple animation or slide show.* • Scan images they have created in their flipbook or images from another source and save the pictures. • Import them into an animation program such as PowerPoint, Paint Shop Pro or Kid Pix and use the software to create different types of animation. • When they are familiar with the software program, they could draw a series of eight pictures for an animation.
Encourage students to discuss the different forms of presentation.	*Compare the flipbook and the animation or slide show and describe the advantages and disadvantages of each product.* • Discuss the advantages and disadvantages of different forms of presentation.

Assessment

Sources of evidence could include:

- selection and use of techniques in the presentation of their animation
- ability to cooperate in the development of production procedures
- participation in activities.

Synthesising activities

Focus

TP 3.4 Students test and judge how effectively their own and others' processes and products meet the design challenge.

INF 3.2 Students select and use techniques for generating, modifying and presenting information for different purposes.

Teaching considerations

Refer to the 'Advice to teachers' section in the module.

Resources

Computers

Internet access and related software

Multimedia software

Teacher	**Students**
Discuss the different ways the animation could be transformed into a slide show or transmitted to other audiences.	*Transform and transmit the animation or slide show to different audiences.* • Email the animation to a friend. It could be used on personalised email stationery or in a multimedia presentation as a student signature or logo. Make it into a cartoon for the school's website.
	Use the animation or slide show on the school's website. • Consider the following issues: – the appropriateness of the animation for the target audience – the impact of the animation on the audience.
Lead a discussion about and evaluation of the animations. One or two animations could be selected and placed on the school's website.	*Test and judge the effectiveness of their own and others' processes and products in terms of meeting their design challenge.*

Assessment

Sources of evidence could include:

- participation in activities
- work samples
- production of their animation and presentation of their product.

Flipbook template

Student resource 1

Cut out each of the squares. Staple them together at the left hand side. Flip through the book to animate the duck. Choose and design a moving figure and make your own flipbook.

1 	6 
2 	7 
3 	8 
4 	9 
5 	10 

Idea designed by past students of California State University, Hayward's Educational Technology Leadership Graduate Program. Sponsored by the Contra Costa County Office of Education Pleasant Hill, CA, USA. www.cccoe.k12.ca.us/bats/credit.html.

Production procedure

Student resource 2

It is important to organise your Technology project. Use this sheet to plan your time and sequence the steps necessary for completing your project.

Date started	Sequenced plan of production	Materials and equipment required	Date completed
	1.		
	2.		
	3.		
	4.		
	5.		
	6.		
	7.		
	8.		

Acknowledgment and support materials

Acknowledgment

We acknowledge past students of California State University, Hayward's Educational Technology Leadership Graduate Program, for the use of the flipbook template. Sponsored by the Contra Costa County Office of Education Pleasant Hill, CA, USA. www.cccoe.k12.ca.us/bats/credit.html.

Printed materials

The Animation Pack, 1997, Ashton Scholastic, Sydney.

Viska, P. 1993, *The Animated Book,* Ashton Scholastic, Sydney.

Walters, S. 1994, *Animated Illusions,* Pye Anderson, Hong Kong.

Software

HyperStudio (computer software)

Kid Pix Studio (computer CD-ROM) 1994, Broderbund Software, Novato, California.

Microsoft PowerPoint (computer software)

Paintshop Pro (Jasc software)

Windows Movie Maker (computer software)

Video

History Of Animation (video) 1975, Walt Disney Educational Media Co.

Websites

(All websites listed were accessed in September 2002)

Amazing Animation Lessons on the Web, www.amazing-kids.org/start.html
Links to useful animation websites.

*Bat Fli*p, www.cccoe.k12.ca.us/bats/flip.html
Template for a bat flipbook.

Film Production, www.actf.com.au/learning_centre_new/LearnAbout/Film_Production
Links to useful flipbook websites.

Funny Faces, www.eduplace.com/rdg/gen_act/humor/faces.html
Outlines a flipbook activity.

Shareware, www.shareware.com
Download site for shareware software for creating animations and gifs.

Thaumatropes, www.cmp1.ucr.edu/exhibitions/hoffer/motion/thaum.html
Information about and samples of a spinning animation device.

Think Quest, www.library.thinkquest.org/11039/steps.html
Steps for creating an animation.

Think Quest, www.library.thinkquest.org/11039/flipbook.html
Instructions for making a flipbook.

Think Quest, http://library.thinkquest.org/22316/start.html
Tips for getting started in clay animation.

Yahooligans, www.search.yahooligans.com/search/ligans?p=animations
Animation graphics.

AccessEd has a range of reference materials, resources and software materials that are available for teachers to borrow. Refer to the site for more information on borrowing.
http://education.qld.gov.au/accessed/borrow/index.html#1

This sourcebook module should be read in conjunction with the following Queensland Studies Authority materials:

Years 1 to 10 Technology Syllabus

Years 1 to 10 Technology Sourcebook Guidelines

Technology Initial In-service Materials

Technology CD-ROM

Copyright notice

Guidance in connection with the Copyright Amendment (Digital Agenda) Act

Libraries, educational institutions, and institutions helping people with a disability may have the right to:

- supply another library with digital copies of a work, or parts of a work that they hold, if the other library cannot get the work in a reasonable time at an ordinary price
- display digital works within their premises (e.g. on an intranet)
- make a digital copy for research or study
- for administrative purposes, make a digital copy of a work held in printed format
- make a copy of an artistic work to display on their premises if the original is lost or in danger.

To comply with subsection 49(5A) of the *Copyright Amendment (Digital Agenda) Act 2000*, anything that a library makes available on their computer system must be so arranged that it can be accessed only through a computer that cannot itself make a copy, or print out the copy displayed. This is made clear in subsection 49(5).

Direct quotation of subsection 49(5A), Copyright Amendment (Digital Agenda) Act

> If an article contained in a periodical publication, or a published work (other than an article contained in a periodical publication) is acquired, in electronic form, as part of a library or archives collection, the officer in charge of the library or archives may make it available online within the premises of the library or archives in such a manner that users cannot, by using any equipment supplied by the library or archives:
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