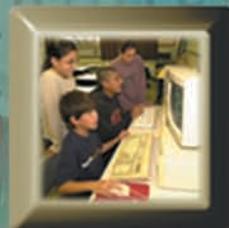




Department
of Education

CANADA



Journey On

Working Toward Communication and
Information Technology Literacy

Grade 4

September 2005 Draft

Preface

The document, *A Journey* (1997), first introduced the general concept of integrating technology into the curriculum at the elementary level in Prince Edward Island. As stated in this earlier document, using information technology in the schools was considered new and largely uncharted territory. We continue a journey into an interesting world of communication and information tools for teaching and learning. *Journey On Grades 1-3* (1999) provided a framework and lesson plans for teachers at the primary level to integrate communication and information technology in their classrooms. *Journey On Grades 4-6* (September 2000) and the document, *Journey On Grades 7-9* (September 2000), continued with the same framework and specific grade level lesson plans intended for teachers in elementary and intermediate schools.

Journey On (2005), provides grade specific curriculum outcomes that have been assigned to core curriculum subjects. This grade 4 document contains specific technology outcomes, instructional considerations, teaching suggestions - activities and assessment strategies, lesson plans, and links to other curriculum areas.

These documents will serve as a guide for teachers. Lesson plans suggest specific exercises for classroom use and will serve as a starting point from which teachers may develop and enhance their own ideas and competencies in the area of communication and information technology (CIT).

Acknowledgements

The Department of Education, Technology In Learning, gratefully acknowledges the suggestions, lesson plans, and other contributions made by Prince Edward Island students and educators. A special thank you is extended to the teachers who field tested the lesson plans and accompanying materials. This input was invaluable in making *Journey On (2005)* a useful teaching resource. The authors would also like to extend their appreciation to those individuals who provided feedback and editorial comments during the development of this document.

The communication and information technology committees were instrumental in providing input for the curriculum outcomes grades 1-12 framework on which *Journey On (2005)* is based. Past and present members of the committees are listed below:

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Contents

Introduction	
Purpose of Document.....	1
Definitions: Technology, Technological Competence and Technological Literacy.....	2
Philosophy	
Technology Integration	4
Advantages of Technology Integration.....	5
ABC's of Curriculum	
An Outcome-based Curriculum: Essential Graduations Learnings, and Specific and General Outcomes.....	6
Other Features of the Curriculum.....	7
Overview of APEF Outcomes in Core Curriculum Areas.....	8
Effective Use of Communication and Information Technology within the Curriculum.....	10
General Outcomes for Communication and Information Technology.....	12
Specific Outcomes for Communication and Information Technology.....	14
How to Use this Document, Paper vs. On-line.....	25
Integration of Communication and Information Technology in Grade 4	
Computer Systems	28
Social, Ethical and Health	32
Internet	36
Concept Maps	38
Graphics	40
Word Processing	42
Multimedia	44
Database	46
Telecommunications	48
Web Authoring	50
Lesson Plans	52
Appendix	70
Glossary	72

Vision

Technology education for Atlantic Canada fosters the development of all learners as technologically literate and capable citizens who can develop, implement, and communicate practical, innovative, and responsible technological solutions to problems.

Foundation for the Atlantic Canada Technology Education Curriculum, APEF, Pg. 5

Introduction

Purpose of Document

Journey On is a practical working guide which will provide educators and administrators at all levels, including schools, school boards/districts, and provincial departments, with a reference point for integrating communication and information technologies (CIT) into the Prince Edward Island school curriculum.

Journey On will be the basis for future decisions pertaining to human and physical CIT resources. These decisions will focus on personnel, professional development, instructional techniques, course development, student and teacher access to technology, and hardware and software purchases.

It is recognized that many disciplines have their own specialized technologies and technological processes. Students will have the opportunity to develop skills required to use these specialized technologies within the context of courses such as Computer Science, Science, Career Exploration, Visual Communication, Industrial Arts, and Home

Economics. CIT differs from other technologies because of its vast and far reaching applications in all disciplines.

The purpose of *Journey On* is to focus on how CIT can be used from grade 1-12 and across all areas of the curriculum as part of a more global strategy that will contribute to the development of technologically competent and literate individuals graduating from our school system.

Journey On:

- provides strategies and concrete suggestions for effective integration of communication and information technologies into the Prince Edward Island curriculum in a way that enhances learning
- identifies the communication and information technologies that we wish our students to use
- identifies the knowledge and skills that students need to develop to be considered technologically competent in communication and information technologies

Terminology

Technology

The broad definition of technology includes the tools and processes we use to alter our surroundings, perform a task, discover more about ourselves, and communicate. For the purpose of this document *technology* refers to the tools used to access, gather, process, and share information. These communication and information technologies (CIT) pertain to computers and their peripherals such as scanners, printers, digital cameras, projection devices, and video-conferencing equipment.

Technological Competence

The Atlantic Provinces Educational Foundation (APEF) defines technological competence as “the ability to use a variety of technologies, demonstrate an understanding of technological applications and apply appropriate technologies for solving problems independently.” Individuals competent in information and communication technologies have specialized knowledge and skills that enable them to use technology to access, gather, process, and share information.

Technological Literacy

Technological literacy encompasses technological competence but refers to a higher level of understanding of technology. Individuals literate in the area of CIT think critically about information gained through the use of technology, the application of specific technologies, and the impact of technology on individuals and society when formulating decisions, opinions and courses of action. These individuals apply problem solving strategies and creative thinking skills to independently learn how to use new technologies, or circumvent problems associated with older technologies. CIT literate individuals demonstrate confidence and a positive attitude as they adapt and use technologies for a beneficial purpose.

Philosophy

The use of technology in our educational system is based upon a number of underlying beliefs:

- as educators in Prince Edward Island we are committed to provide for the development of children so that each may take a meaningful place in society
- literacy extends beyond the traditional concept of the ability to read and write print materials to encompass media and information literacy
- technological competence is a requirement for literacy and lifelong learning in today's world
- students today require knowledge, skills and attitudes for dealing with the rapid pace of change and growth of our knowledge base
- technology, when used appropriately, enhances student-centred learning and the teacher's role as a facilitator

Technology Integration

Integrating communication and information technologies into the curriculum is a preferred strategy for developing technologically literate learners. Integration occurs when the technology is used as a tool to achieve existing curricular learning outcomes within the context of a theme or subject. Technology skills are not acquired separately in an integrated approach but in the context of learning activities intended to address various outcomes across the curriculum. Integration means that the use of technology as a teaching tool should not be limited to specialist teachers but applies to teachers in all curricular areas.

Advantages of Technology Integration

Integration of technology into the curriculum

- ensures that curriculum is the principle focus, rather than technology
- promotes the development of creative thinking, critical thinking, research, communication, and problem solving skills
- provides access to rich resources and learning experiences that can extend far beyond those offered in traditional classrooms
- motivates students to complete learning tasks and become more readily engaged in their own learning
- supports current research which suggests that people learn in a holistic fashion rather than in a compartmentalized manner
- supports contemporary approaches to education such as cooperative learning, constructivism, resource-based learning and individualized learning
- provides teachers with an additional means to address multiple learning styles
- provides students with the opportunity throughout their school career to expand and reinforce their repertoire of technology skills
- enables the students to acquire a better understanding of how to use technology in meaningful ways
- ensures that all students have the opportunity to develop technological competencies
- prepares students to select appropriate technologies to complete tasks
- provides teachers with an opportunity to model lifelong learning as students witness teachers learning and using new skills for a purpose

ABCs of curriculum

An Outcome-based Curriculum

An outcome-based curriculum is a student-centred design which focuses on expectations of the student as a result of learning. It ensures that each student is provided with the time and assistance to meet his/her potential.

A learning outcome is the result of learning for the student, something that the student *will know, be able to do, or be like*.

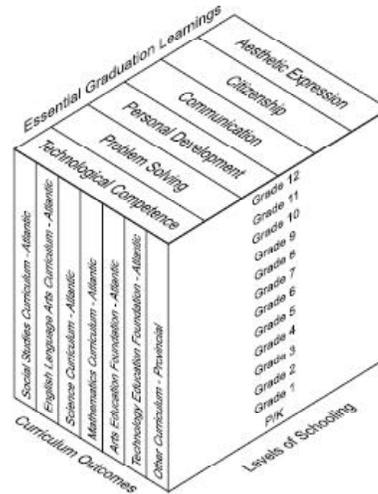
Essential Graduation Learnings (EGLs)

“The essential graduation learnings are statements that describe the knowledge, skills, and attitudes expected of all students who graduate from high school.” (APEF/CAMET) These statements are the framework upon which curriculum for all subject areas is based. The six Essential Graduation Learnings include:

- Aesthetic Expression
- Citizenship
- Communication
- Personal Development
- Problem Solving
- Technological Competence

General and Specific Curriculum Outcomes

General curriculum outcomes are statements that describe what students are expected to know in a curriculum area upon graduation. Specific outcomes are statements describing steps along the way to achieving general outcomes. Specific outcomes are expectations of a student by the end of each grade level and are used to guide the teacher in planning day to day activities. Students demonstrate the essential graduation learnings through accomplishing the outcomes.



Other Features of the Curricula

In addition to the six essential graduation learnings, there are a number of underlying concepts and strategies which are interwoven into the 1-12 curricula of Prince Edward Island, and which influence methods of delivery and instruction.

Cooperative Learning and Group Work

Small and large group work provide students with the opportunity to develop language (communication skills) and social skills.

Creative Thinking

“Creative thinking deals with combining elements of reality in novel ways to formulate new perceptions, enriched concepts and new understandings” (Nature of Thinking)

Critical Thinking

Critical thinking involves the analysis of statements or arguments and an evaluation of their worth or validity. Critical thinking skills include identifying and validating sources; determining what is being said, relevancy, and point of view or perspective; detecting bias; recognizing persuasive techniques; and drawing logical, well-supported conclusions.

Diversity/Equity Education

Diversity education encourages the understanding of diversity within our society and promotes a commitment to equity by fostering an awareness and critical analysis of individual and systemic discrimination.

Resource-based learning

Resource-based learning is an educational approach that actively engages the students in carefully structured learning activities that use a wide range of resources, and emphasizes skills and strategies needed to achieve information literacy.

Learning Styles

The Theory of Multiple Intelligences suggests that all people learn differently, with eight identified intelligences. It is essential that educators make students aware of their learning styles and teach using a variety of methods to provide students the opportunity to learn in a number of ways.

Essential Grad
Aesthetic Expression Citizenship
Personal Development

Language Arts

Speaking and Listening

Students will be expected to

- speak and listen to explore, extend, clarify, and reflect on their thoughts, ideas, feelings, and experiences
- communicate information and ideas effectively and clearly, and respond personally and critically
- interact with sensitivity and respect, considering the situation, audience, and purpose

Reading and Viewing

Students will be expected to

- select, read, and view with understanding a range of literature, information, media, and visual texts
- interpret, select, and combine information using a variety of strategies, resources, and technologies
- respond personally to a range of texts
- respond critically to a range of texts, applying their understanding of language, form, and genre

Writing and Other Ways of Representing

Students will be expected to

- use writing and other forms of representation to explore, clarify, and reflect on their thoughts, feelings, experiences and learnings; and use their imaginations
- create texts collaboratively and independently, using a variety of forms for a range of audiences and purposes
- use a range of strategies to develop effective writing and media products and to enhance their clarity, precision and effectiveness

General Curri

Mathematics

Number Concepts/Number and Relationship Operations

- Students will demonstrate number sense and apply number theory concepts
- Students will demonstrate operation sense and apply operation principles and procedures in both numeric and algebraic situations

Patterns and Relationships

- Students will explore, recognize, represent and apply patterns and relationships, both informally and formally

Shape and Space

- Students will demonstrate an understanding of and apply concepts and skills associated with measurement
- Students will demonstrate spatial sense and apply geometric concepts, properties, and relationships

Data Management and Probability

- Students will solve problems involving the collection, display and analysis of data
- Students will represent and solve problems involving uncertainty

Ot

Health, Music, Physical Education and Visual Arts
These guides contain general curriculum outcomes

uation Learnings

Technological Competence

Communication

Problem Solving

culum Outcomes

Science

Science, technology, society, and the environment (STSE)

- Students will develop an understanding of the nature of science and technology, the relationships between science and technology, and the social and environmental contexts of science and technology

Skills

- Students will develop the skills required for scientific and technological inquiry, for solving problems, for communicating scientific ideas and results, for working collaboratively, and for making informed decisions

Knowledge

- Students will construct knowledge and understanding of concepts in life science, physical science, and Earth and space science, and apply these understandings to interpret, integrate, and extend their knowledge

Attitudes

- Students will be encouraged to develop attitudes that support the responsible acquisition and application of scientific and technological knowledge to the mutual benefit of self, society, and the environment

Social Studies

Citizenship, Power, and Governance

- Students will be expected to demonstrate an understanding of the rights and responsibilities of citizenship; and the origins, functions, and sources of power, authority, and governance

Culture and Diversity

- Students will be expected to demonstrate an understanding of culture, diversity, and world view, recognizing the similarities and differences reflected in various personal, cultural, racial, and ethnic perspectives

Individuals, Societies, and Economic Decisions

- Students will be expected to demonstrate the ability to make responsible economic decisions as individuals and as members of society

Interdependence

- Students will be expected to demonstrate an understanding of the interdependent relationship among individuals, societies, and the environment - locally, nationally, and globally, and the implications for a sustainable future

People, Place, and Environment

- Students will be expected to demonstrate an understanding of the interactions among people, places, and the environment

Time, Continuity, and Change

- Students will be expected to demonstrate an understanding of the past and how it affects the present and the future

her

curriculum guides exist on Prince Edward Island and specific curriculum outcomes.

Effective Use of Technology with

Language Arts

The Foundation for the Atlantic Canada English Language Arts Curriculum (1996) identifies technological advances in our society as a contributing factor to the revision of the concept of literacy. Literacy now encompasses print literacy, visual literacy, media literacy, and other literacies required to use technology in our culture. This APEF foundation guide suggests that students use a range of information retrieval, and information processing technologies to meet their own information needs. Specific examples of student experiences should include

- using a word processor to develop a piece of writing
- constructing simple databases and spreadsheets to organize information
- exploring the applications of interactive CD-ROM software
- using graphic communication software
- producing a variety of desk top publishing texts
- using multimedia
- using e-mail
- using listservs and web browsers
- using appropriate technologies to organize and create complex information with multiple textual and graphic sources
- distinguishing sources which are central, reliable and relevant among the vast number of choices offered by technologies

Adapted from APEF Foundation Guide for English Language Arts Curriculum (1996) page 40

Mathematics

The Foundation for the Atlantic Canada Mathematics Curriculum guide (1996) supports the recommendations of National Council of Teachers of Mathematics (NCTM) curriculum standards to use technology i) to enhance the teaching and learning of mathematics and ii) to relate school mathematics to the world in which students live through developing and interpreting mathematical models. APEF suggests that technology has altered the nature of what mathematics is important to learn and has made possible the development of new problems and innovative ways of investigating these problems. Specifically, it is recommended that technology should be used to

- explore situations with complicated numbers which previously would have been beyond their capabilities
- quickly and easily explore individual or groups of related computations or functions
- create and explore numeric and geometric situations for the purpose of developing conjectures
- perform simulations of situations which would otherwise be impossible to examine
- easily link different representations of the same information
- model situations mathematically
- observe the effects of simple changes in parameters or coefficients
- analyze, organize, and display data

Adapted from APEF Foundation Guide for Mathematics Curriculum (1996) page 39

in the Core Curriculum Areas

Science

The Foundation for the Atlantic Canada Science Curriculum guide (1998) states that technology can be used to facilitate the learning of science and recommends that technology should have a major role in the teaching and learning of science. APEF proposes the following guidelines for the implementation of technologies in the teaching and learning of science

- tutorial software should engage students in meaningful interactive dialogue and creatively employ graphs, sound, and simulations to promote acquisition of facts and skills, promote concept learning and enhance understanding
- simulation software should provide opportunities to explore concepts and models that are not readily accessible in the laboratory (e.g., those that require hazardous materials, unavailable equipment, or more time than is possible in real-time classroom.)
- analog-digital interface technology should be used to permit students to collect and analyse data as scientists do, and perform observations over long periods of time, enabling experiments that otherwise would be impractical
- databases and spreadsheets should be used to facilitate the analysis of data by organizing and visually displaying information
- networking among students and teachers should be encouraged to permit students to emulate the way scientists work and to reduce teacher isolation
- using tools such as the World Wide Web should be encouraged as it provides instant access to an incredible wealth of information on any imaginable topic

Adapted from APEF Foundation Guide for Science Curriculum (1998) page 44

Social Studies

The Foundation for the Atlantic Canada Social Studies (1998) recommends that technology have a major role in the teaching and learning of social studies but, that it enhance, not replace, essential social studies learning. APEF recognizes that Communication and Information Technologies have become important tools for the acquisition, analysis, presentation, and communication of data in ways that allow students to become more active participants in research and learning

- CD-ROMs and the Internet provide teachers and students with quicker and easier access to extensive and current information. Students and teachers should critically analyse such information to determine its validity, accuracy, bias, and interpretation
- students are enabled to directly employ inquiry skills by exposure to first hand information through direct e-mail conversations, student created Web sites, and listservs. These modes of communication provide connections to students and cultures from around the world.
- students can present their learnings to peers within their classroom and beyond in a wide variety of forms (graphics, maps, text, graphic organizers, Web sites, multimedia presentations, etc.) that fit their learning styles.
- technology can provide opportunity for students to become more actively involved in their learning by allowing students control of information gathering, processing, and presentation.

Adapted from APEF Foundation Guide for Social Studies(1998) page 40

Technology Curriculum Outcomes

GENERAL TECHNOLOGY OUTCOMES

(as per APEF Technology Foundation Document)

GTO A- Technology Problem Solving

Students will be expected to design, develop, evaluate, and articulate technological solutions.

GTO B- Technology Systems

Students will be expected to operate and manage technological systems.

GTO C- History and Evolution of Technology

Students will be expected to demonstrate an understanding of the history and evolution of technology and of its social and cultural implications.

GTO D- Technology and Careers

Students will be expected to demonstrate an understanding of current and evolving careers and of the influence of technology on the nature of work.

GTO E- Technological Responsibility

Students will be expected to demonstrate an understanding of the consequences of their technological choices.

Areas

Computer Systems - In general, a complete, working computer. The computer system includes not only the computer, but also any software, networking, and peripheral devices that are necessary to make the computer function. Every computer system, for example, requires an operating system such as Windows.

Social, Ethical and Health - General user guidelines for the responsible use of technology .

Internet - A global network connecting millions of computers. This network carries various information and services such as email, online chat, video, audio, web sites and other documents of the World Wide Web.

Concept Maps - Visual representations of relationships between ideas. Methods for grouping and organizing information. Visual learning allows new concepts to be more thoroughly and easily understood.

Graphics - Refers to display and manipulation of images (text, pictures and drawings)

Spreadsheets - A table of values (text, numeric, dates) or information arranged in rows and columns. Spreadsheets allow the computation of data with formulas and the creation of charts and graphs.

Word Processing - Using a computer to create, edit, and print documents. A word processor enables you to create a document, store it electronically, display it on a screen, modify it by entering commands and characters from the keyboard, and print it.

Multimedia -The use of computers to create and present several different media such as text, graphics, video, animation, and sound in an integrated way.

Database - A collection of data organized in such a way that a computer program can quickly select desired pieces of information from a search request. You can think of a database as an electronic filing system.

Telecommunications - Refers to all types of data transmission, from voice to video using a variety of media such as copper cable, fibre optics, satellites, wireless technology, etc.

Web Authoring - The act of developing a web site. Software is available that will generate the required HTML coding for the layout of the particular Web page.

Each skill area of the outcome continuum is identified by grade level and progress as follows:

Awareness - the student is exposed to the technology as it is being used by others.

Guided - the student begins to use the technology with the help of others.

Independent - the student uses the technology without assistance.

Computer Systems



		1	2	3	4	5	6	7	8	9	10	11	12
	Students will be expected to:												
A1.1	make use of help features to independently find solutions to problems												
B1.1	login, open and close a program, open, save and close a file with mouse												
B1.2	demonstrate proper use of login numbers and names, set-up and change passwords, and be aware of implications of multiple logins												
B1.3	begin to work with more than one file open at once (multi-task)												
B1.4	differentiate between "Save" and "Save as..."												
B1.5	be able to identify the common windows components of a given software screen (eg. menu bar, button bar, cursor, insertion point)												
B1.6	have an understanding of file management (drives and folders, rename, select, move, copy, paste, delete, display format, backup, etc.)												
B1.7	understand how to display file properties												
B1.8	understand the difference between software and hardware												
B1.9	identify system specifications and be aware of compatibility issues between the hardware and the software (processor speed and type, RAM, hard drive size, optical drive, connection types, video card, sound card, monitor, network cards)												
B1.10	understand how and when to re-boot (warm boot vs cold boot)												
B1.11	describe networks, file servers, connections (wireless, line types and speeds)												
B1.12	demonstrate proper use of network printing, choose proper printer, recognizes process and purpose of Print Queues												
B1.13	identify computer viruses, how they are transmitted and how anti-virus software is used to protect or clean a computer												
B1.14	identify SPAM, pop-up ads, spyware and other invasive software coding												
B1.15	modify and utilize master pages/templates												
B1.16	import and export files to other formats (.html, .pdf)												
C1.1	identify technologies that are found in everyday life												

Social, Ethical, and Health



Awareness



Guided Instruction



Independent

		1	2	3	4	5	6	7	8	9	1	1	1
	Students will be expected to:												
A2.1	identify aspects of an ergonomic workstation (lighting, monitor angle, work placement, keyboard height, seat height, posture, etc.)												
B2.1	demonstrate proper touch keyboarding techniques (ie: home row, quick key strokes, proper reaches)												
C2.1	examine current Canadian law governing the use of technology												
D2.1	determine the technological requirements for specific career goals												
E2.1	respect equipment and other student's work												
E2.2	work co-operatively at work station												
E2.3	adhere to acceptable use agreement for work station/network/Internet												
E2.4	use electronic communication etiquette												
E2.5	adhere to rules of freeware, shareware and commercial ware												
E2.6	adhere to copyright and privacy laws, give credit to sources of information (MLA, APA)												
E2.7	identify ethical issues involved with Internet content, awareness of inappropriate use of technology												
E2.8	demonstrate caution before sending personal information over the internet												
E2.9	follow publishing etiquette (suitable language, no discrimination, etc.). Adhere to the guidelines for school web pages as outlined by PEI Department of Education.												

Internet

 Awareness
  Guided Instruction
  Independent

	1	2	3	4	5	6	7	8	9	10	11	12
Students will be expected to:												
A3.1 demonstrate awareness of the Internet as a source of information												
A3.2 use various tools (search engines and directories) and strategies necessary to carry out research												
A3.3 obtain/download material (text, graphics, files) from Internet												
B3.1 Use the various browser navigation tools (back, forward, history)												
B3.2 manage bookmarks/favorites												
B3.3 distinguish among various file formats (file extensions), required plugins, file compression/decompression utilities												
C3.1 discuss ways in which the Internet is evolving												
E3.1 critically evaluate information and its source based on pre-determined criteria												

Concept Maps

 Awareness
  Guided Instruction
  Independent

	1	2	3	4	5	6	7	8	9	10	11	12
Students will be expected to:												
A4.1 use brainstorming techniques to generate ideas												
A4.2 create a web (i.e.: literary, concept, character, word, Venn Diagrams, and timelines)												
A4.3 categorize ideas graphically												
A4.4 create links between ideas, re-link or delete links between ideas												
A4.5 elaborate on ideas (i.e. adding notes, annotations, etc.)												
B4.1 add fonts, graphics, sound, and colours to enhance ideas												
B4.2 create hyperlinks to files, web sites, or multimedia content												

Graphics



		1	2	3	4	5	6	7	8	9	10	11	12
	Students will be expected to:												
A5.1	create illustrations or graphics by using the various drawing tools												
A5.2	apply principles of design												
B5.1	demonstrate various object editing features (ie. select, unselect, resize, crop, area fill, add colour and pattern, size adjustment using the mouse or scale, various erasing techniques, object orientation, changing font and text size, colour or appearance, creating text blocks, change text wrap selection and other text manipulation functions)												
B5.2	carry out various object manipulations (ie. object alignment, creation of graphics in layers, grouping/un-grouping components of an image)												
B5.3	use other graphic creation tools (i.e. clone brush, colour replacements, effects and filters, hexadecimal (RGB and CMYK colour values)												
B5.4	convert various graphic formats between vector (ie: .png, .psp, .cdr) and bitmap images (ie: .wmf, .tiff, .bmp, .gif, .jpeg, .jpg). import a graphic file from another source												

Spreadsheets



Awareness



Guided Instruction



Independent

	1	2	3	4	5	6	7	8	9	10	11	12
Students will be expected to:												
A6.1 plan / design a spreadsheet to organize and tabulate data from various sources (to make a schedule, tally/score sheet, solve a mathematical word problem)				Checkered	Checkered							
A6.2 correct errors, modify or delete data in a cell				Checkered	Checkered							
A6.3 design own formulas incorporating functions {if SUM(B1..D1)>0, @SUM(B1..D1), 0} and absolute / relative cell references										Checkered		
A6.4 use different types of graphs / charts (line, pie, bar) to visually represent data; label graph components (legend, title, x-y axis, colour, fill pattern)				Checkered	Checkered							
B6.1 identify spreadsheet components and terminology (rows and columns, cell addresses, data entry bar)				Checkered	Checkered							
B6.2 identify different types of cell data (text, numeric, function, date)						Checkered						
B6.3 enter data into simple preexisting spreadsheets, auto fill data, data entry bar, sort data				Checkered	Checkered							
B6.4 edit spreadsheet layout (insert and delete rows or columns, select a range of cells, alter column widths and row heights, locking row and column headings, lock and unlock cell(s), fixed titles)				Checkered	Checkered							
B6.5 enter formulas to perform calculations across columns, rows, cells, move/copy data or formulas from one area of spreadsheet to another						Checkered						
B6.6 format numbers (decimal places, currency, etc.), format text (font, colour, size)				Checkered	Checkered							
B6.7 create links [between notebooks (tabs or sheets), external files, graphs, charts, website]											Checkered	

Word Processing



Awareness



Guided Instruction



Independent

	1	2	3	4	5	6	7	8	9	1	1	1
Students will be expected to:												
A7.1 create and edit data files and form documents to perform a merge												
A7.2 identify examples of desktop publishing (i.e. newspaper, catalogue, ads, brochure)												
B7.1 use a grade level appropriate wordprocessor to create and edit written work												
B7.2 locate characters on a keyboard and identify functions of word processing (ie. cursor, insertion point, enter key, space bar, upper case, backspace, shortcut key)												
B7.3 use editing tools to revise work (i.e. spell check, thesaurus, find and replace)												
B7.4 change font, size, colour, style (ie. bold, italics, underline, insert special characters, drop capitals)												
B7.5 format text (ie. justification, line spacing, outlines and bullets, text wrap)												
B7.6 format documents (ie. using margins, tab rulers, indents, page center, border, watermark)												
B7.7 insert a graphic and manipulate, (ie. resize, add borders and fill, create text art)												
B7.8 insert and format tables and text boxes (ie. lines, fill, columns, rows, borders, alignment)												
B7.9 format multi-page documents with headers, footers, page numbers, page breaks and keep text together function, change page orientation/size (ie. text presentation features)												
B7.10 insert automated features (ie. date and file stamp)												

Multimedia



	1	2	3	4	5	6	7	8	9	10	11	12
<i>Students are expected to:</i>												
A8.1												
A8.2												
A8.3												
A8.4												
A8.5												
B8.1												
B8.2												
B8.3												
B8.4												

Database

 Awareness
  Guided Instruction
  Independent

	1	2	3	4	5	6	7	8	9	10	11	12
Students will be expected to:												
A9.1 use an existing database (CD ROM, Microcat, Dynex, Internet search engine) to find information (sign up for Provincial Library Card - Abbycat)												
A9.2 perform searches on a database file using logical and Boolean operators (understands commands, scope, filters, and conditions)												
A9.3 design/plan a database to use as a method of organizing information												
A9.4 create and modify a form (add graphics, and error checking routines)												
A9.5 use databases to analyze data and look for trends												
B9.1 enter data into a pre-existing database, edit data, and use automated text												
B9.2 create fields and with variable field types (numeric, text, date) and properties (color, width, font, etc.)												
B9.3 restructure database (add / delete fields, change field width)												
B9.4 sort records alphabetically, numerically and by multiple fields												
B9.5 create a report from the entire database or selected records												
B9.6 create a report with automated summaries and calculations (understand logic, date and summary field types)												
B9.7 bring database information into a word processing environment ie: (Mail Merges)												
B9.8 distinguish between the two general types of database management systems (flat and relational)												
E9.1 examine functions and implications of database driven websites (ie: online purchasing, searching, and password secured sites)												

Telecommunications



	1	2	3	4	5	6	7	8	9	10	11	12
Students will be expected to:												
Email:												
B10.1 send messages	checkered											
B10.2 open messages	checkered											
B10.3 manage mail/folders				checkered								
B10.4 manage address books				checkered								
B10.5 use distribution lists				checkered								
B10.6 send and open attachments				checkered								
B10.7 create signatures				checkered								
B10.8 apply filters and rules						checkered						
B10.9 use calendar features such as appointments, tasks, reminder notes/memos							checkered					
E-Learning/Collaborative tools:												
Students will be expected to:												
A10.1 collaborate using software: (ie. whiteboard, slideshow, application sharing, chat, messaging, send and receive files, photos, group file sharing, resource sharing (links), online content creation and sharing, assignment drop box, video and audio, discussion forums, journal.)				checkered								
B10.10 use the organizational features of collaborative tools such as scheduling, calendaring, and interactive syllabus							checkered	checkered	checkered	checkered	checkered	checkered

Web Authoring



	1	2	3	4	5	6	7	8	9	10	11	12
Students will be expected to:												
A11.1 identify web page creation possibilities	Checkered											
A11.2 create appropriate text and image file formats					Checkered							
A11.3 create an interactive webpage. (online surveys, forms, interactive database, polls)							Checkered	Checkered	Checkered	Checkered	Checkered	Checkered
B11.1 examine html tags								Checkered	Checkered	Checkered	Checkered	Checkered
B11.2 create a basic web page (may include backgrounds, images, hyperlinks, tables)					Checkered							
B11.3 indicate where file or page is hosted (server, web server, hosting service)												
B11.4 apply website file management and transfer files to and from web servers (ftp), edit pages online												
B11.5 use special features (image maps, cascading style sheets, frames, rollovers, layers)								Checkered	Checkered	Checkered	Checkered	Checkered
B11.6 embed objects (audio, video, pdfs, animation, Flash, Java Script Applet,)					Checkered							
E11.1 describe standards which guide web based publication (W3C accessibility guidelines)									Checkered	Checkered	Checkered	Checkered

How to Use this Document

Paper Document

The first section of the document includes background material, definitions, philosophy, advantages of technology integration, an overview of the APEF curriculum, and grade 1-12 general outcomes for information and communication technologies.

The remainder of the document addresses the level and defines specific knowledge and CIT skills expected of students as they work toward technology competency. Practical considerations are given for incorporating CIT into the curriculum and accompanying lesson plans. The information is presented in a two-page layout as outlined on the following pages.

On-line Document

An on-line version of this document will be developed. Having a document on-line has a number of advantages. It enables teachers to easily cross-reference material in the document with on-line help manuals and curriculum documents. It can encourage a greater level of collaboration among all educational partners. An on-line document can be easily revised and updated without having to copy and redistribute. It is our intent to revise, modify, and add new materials in the future only to the on-line version of *Journey On*.

Two Page-Layout

Four major sections are found on these pages as you go from left to right: 1) specific CIT outcomes, 2) instructional considerations, 3) teaching suggestions or names of grade specific lesson plans, and 4) links to curriculum outcomes. The applicable technology curriculum outcome area is found in a box at the top of each page along with the grade level.

Technology Curriculum Outcome Area

Grade Level

Grade 7

Computer Systems	
Students will be expected to:	Instructional Considerations
<p>AS 1 address applications which protect data in order to prevent loss.</p> <p>BS 4 have an understanding of data and understand the difference between data and information.</p> <p>BS 4 understand the difference between software and hardware.</p> <p>BS 8 identify system functions and be able to identify their uses for hardware, hardware and software (peripherals, operating systems, applications) and software (operating systems, applications, word processing, spreadsheets, etc.).</p>	<p>AS 1 Using the appropriate help sources will provide access to available help resources, manuals, and technical support. Encourage "the discovery" approach to this outcome to promote learning.</p> <p>BS 4 Explain the methods operating systems use to manage files, folders, and storage space. Instruct on the importance of periodically backing up and restoring files. Instruct on the importance of backing up or restoring files, folders, and storage space. Instruct on the importance of backing up or restoring files, folders, and storage space.</p> <p>BS 4 Explain the difference between hardware and software. Instruct on the difference between hardware and software. Instruct on the difference between hardware and software.</p> <p>BS 8 Explain the functions of hardware and software. Instruct on the functions of hardware and software. Instruct on the functions of hardware and software.</p>

30 Journey On - P.E.I. Department of Education, 2005

Grade 7

Computer Systems		District Specific Curriculum Support				
Technology Lesson Plan	Grade Level	Language Arts	Math	Science	Social Studies	Other
<p>AS 1 address applications which protect data in order to prevent loss.</p> <p>BS 4 have an understanding of data and understand the difference between data and information.</p> <p>BS 4 understand the difference between software and hardware.</p> <p>BS 8 identify system functions and be able to identify their uses for hardware, hardware and software (peripherals, operating systems, applications) and software (operating systems, applications, word processing, spreadsheets, etc.).</p>	75		1127, 2008	724C		

Journey On - P.E.I. Department of Education, 2005 31

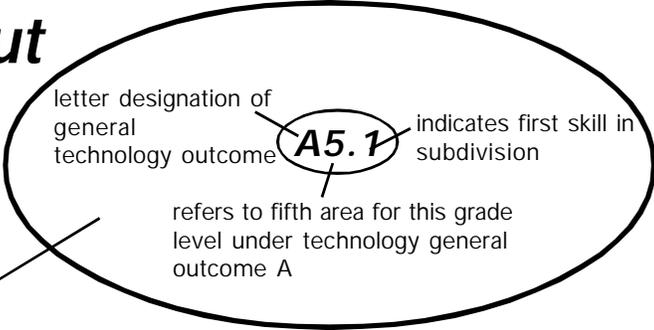
Specific CIT Outcomes

Instructional Considerations

Teaching Suggestions, Activities and Assessment

Links to Curriculum Outcomes

Two Page-Layout in Detail



Specific Outcomes

- are steps towards accomplishing the general technology outcomes and lettered as subdivisions of GTOs

Grade 7

Computer Systems

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>A1.1 make use of help features to independently find solutions to problems</p> <p>B1.6 have an understanding of file management (drives and folders, rename, select, move, copy, paste, delete, display format, backup, etc.)</p> <p>B1.8 understand the difference between software and hardware</p>	<p>A1.1 Using the drop-down help menu will help materials, tutorials, and technical "discovery" approach to find solutions</p> <p>B1.6 Discuss the need for organizing electronic folders. As storage space is limited, old reviewed and outdated files deleted. Files are moved up or archived to a disk, memory stick or CD/DVD ROM. A utility is available for users to maintain their files.</p> <p>B1.8 Software provides the electronic instructions to tell the computer what to do. There are two main categories of software: Systems or Operating software, such as Windows, Solaris or Linux and Application software.</p>

Instructional Considerations

- useful information for teachers on terminology and/or purpose and background of specific technologies

Teaching Suggestions, Activities and Assessment

- readiness considerations
- may be suggestions for activities or name of lesson plan

Links to Curriculum Outcomes

- letters and numbers representing curriculum outcomes as defined in other APEF (CAMET) documents

<i>Teaching Suggestions and Activities</i>	<i>Links to Specific Curriculum Outcomes</i>		
	Language Arts	Math	Science
<p>Grade 2 Language Arts Theme: <i>New Perspectives</i> Lesson Plan: <i>Through a Bug's Eyes</i></p>	<p>A1, A3, A4, D1, D3, E1, E1.3, E1.5, G1, G1.1, G2, G2.1, G2.2, G3, G3.1</p>		
<p>Grade 3 Language Arts Theme: <i>Vanishing Animals</i> Internet Sites:</p>	<p>A1, A3, A4, D1, D3, E1, E1.3, E1.4, E1.5, G1, G1.1, G2, G2.1, G2.2, G3, G3.1, H2, H, J5</p>		

Computer Systems

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>A1.1 make use of help features to independently find solutions to problems (Awareness)</p> <p>B1.2 demonstrate proper use of login numbers and names, set-up and change passwords, and be aware of implications of multiple logins (Guided)</p> <p>B1.3 begin to work with more than one file open at once (Guided)</p> <p>B1.4 differentiate between “Save” and “Save as...”(Independent)</p>	<p>A1.1 Using the drop-down help menu will provide access to searchable help materials, tutorials, and technical support. Encourage “the discovery” approach to find solutions to problems.</p> <p>B1.2 One network account is provided. If a user tries to log into a second computer while already being in the network the second login will fail. Applications at school do not permit the changing of passwords. Users at home may have access to programs which allow for the creation and changing of passwords. When creating passwords they should be composed of alphabetic and numeric characters so that they cannot be easily guessed. To prevent data loss, always exit programs and log out of the network properly.</p> <p>B1.3 Windows operating environments allow for many programs to be open simulatenously. Individual programs may allow several files to be open at the same time (Word Perfect 9 allows nine files to be open). This ability to “multitask” allows users to share information between programs, quickly and easily, increasing productivity.</p> <p>B1.4 Newly created files must be given a name using the “save as” selection. Subsequent changes to the file will be updated with the “save” command. To avoid losing work, users should become accustomed to saving at regular intervals.</p>

Computer Systems

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plan:</p> <p><i>What's in the Party Bag</i></p> <p>A1.1 Encourage “discover on your own” strategies to implement special features associated with particular software or have students work together to solve problems.</p> <p>B1.2 Teachers have access to all student logins and passwords. It is advisable to have a list of these available should students forget.</p> <p>B1.3 Demonstrate how to work with multiple files by using a web browser and word processor to gather and record information. (ALT + TAB) keys are used to “toggle” between the two programs.</p> <p>B1.4 Teachers may place activity files in the S: network drive for students to access. Students are required to use the SAVE AS command to change the file name and storage location (to their G: drive) as students do not have save rights to S:</p> <p>SAVE AS is important when using templates so as not to destroy the original file. Save often.</p>	7.3, 10.3	B13			

Computer Systems

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>B1.5 be able to identify the common windows components of a given software screen (Awareness)</p> <p>B1.6 have an understanding of file management (Awareness)</p> <p>B1.8 understand the difference between software and hardware (Awareness)</p> <p>B1.10 understand how and when to re-boot (Guided)</p> <p>B1.12 demonstrate proper use of network printing, choose proper printer, recognizes process and purpose of Print Queues (Guided)</p>	<p>B1.5 Most application programs follow a common interface layout(i.e. menu bar, button bar, cursor, insertion point). Terminology, layout and functions follow a similar pattern. Consistency of function and location of these features has allowed for easier transfer of skills.</p> <p>B1.6 File space on the server is limited. Users should be reminded to clean up their work space. File folders should be created to keep files organized. Files can be deleted or archived (saved on cd, memory stick or floppy disk). A utility is available for users to maintain their files.</p> <p>B1.8 Software provides the instructions to tell the computer what to do. There are two main categories of software: Systems software, such as Windows, Solaris or Linux and Application software, such as Word Perfect, Inspiration 7.5 and Ultimate Writing Creativity Center. Systems software looks after coordinating hardware tasks such as printing and saving files. Application software does a particular type of work such as word processing, accounting, drawing, etc. Hardware refers to the physical components of the computer - those that can be seen and felt such as the monitor, keyboard, mouse, hard drive, etc.</p> <p>B1.10 Always exit programs using the file - exit menu whenever possible. In the event that a program “freezes” there are two options: 1) press ctrl + alt + del and follow the onscreen logout or shutdown instructions(warm boot) 2) hold in the power button until the computer shuts off(cold boot)</p> <p>Unsaved work will be lost with either option and, in addition, users may not be able to log back into the network right away because the file server has maintained that login. Logins are automatically released by the server after fifteen minutes or may be manually cleared by using a “clean connection” utility.</p> <p>B1.12 During the login process users are asked to select a printer. Sometimes there is a delay between the time a user orders a print job and when the printer responds. Never print a task more than once as this delays printing for others and is a waste of resources. All print jobs pass through a software utility called a print queue. Should a number of users request printing at near the same time, the first job is printed and the others will be processed in order received. Teachers may monitor the printing queue and delete any unnecessary print jobs.</p>

Computer Systems

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
B1.5 Use proper terminology when discussing aspects of computer work. Insist that students do the same.					
B1.6 Insist that work be organized into folders. Categories may be selected by subject, theme, or assignment. File management skills may be part of the assessment for a task.					
B1.8 Use display items such as CD ROM, floppy disk, and computer components to demonstrate the difference between hardware and software. (A CD ROM and floppy disk can be seen and touched but contain the software, the digital code that provides instructions to the computer)					
B1.10 Should a computer freeze during class, use this as an opportunity to demonstrate the difference between "warm" and "cold" boot.					
B1.12 Users have access to a utility that shows print jobs that are pending for the network printer. This utility provides information about a print job, such as file name, user, and time sent. These print jobs can be deleted. Encourage students to wait for the printer and not send the					

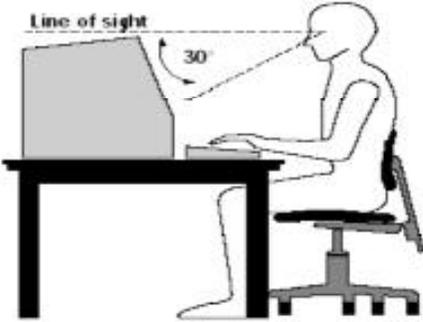
Computer Systems

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>B1.13 identify computer viruses, how they are transmitted and how anti-virus software is used to protect or clean a computer (Awareness)</p> <p>B1.14 identify spam, popup ads, spyware and other invasive software coding (Awareness)</p> <p>B1.15 modify and utilize master pages/templates (Awareness)</p>	<p>B1.13 Programs designed to damage the data on a computer or disrupt its use fall into one of the following categories:</p> <p>Virus: a program that spreads from computer to computer by attaching itself to an executable file. When this file is activated the virus supplies instructions to the computer. These instructions can range from a mere nuisance (eg. a message on your monitor) to the very destructive (eg. erasing the hard drive).</p> <p>Worm: a program that is written in segments and spawns copies of itself in the computer's memory until eventually it causes a crash.</p> <p>Trojan horse: a program disguised as a game or useful application but when executed destroys information on the computer, or gives access or control of the computer to another.</p> <p>Care must be exercised when installing files or opening e-mail. The best methods for prevention are: (a) to only accept programs from reliable sources and (b) to install a reputable virus checker on the system which scans all imported data files, diskettes and CD's for possible viruses.</p> <p>B1.14 Spyware is coding that transmits information to external parties about a users' browsing habits. Spyware and popup screens may also take control of the users browser and automatically redirect to an unwanted website.</p> <p>B1.15 Master pages and style templates allow the user to setup a document layout that will be applied to all like sections in a publication. This makes the document uniform and consistent in appearance and saves time producing the work. Master pages allow for automated page numbering and document page setup.</p> <p>Many types of software provide templates and examples in the "help" menu or online. Users may create templates for frequently used activities.</p>

Computer Systems

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
B1.13 Ensure that files transferred from home are virus checked. School email attachments are automatically scanned for viruses. Precautions must be taken at home when using private email services such as Yahoo or Hotmail which may not scan attached files. Private email services must not be accessed in school.					

Social, Ethical and Health

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>A2.1 identify aspects of an ergonomic workstation (Guided)</p>	<p>A2.1 Ergonomics or the relationship between people and their work is a science with a growing body of evidence. Applying ergonomics by adjusting your chair, work surface, monitor, keyboard, mouse, lighting and modifying your work habits with lifting techniques all have reduced the risk of injury at our workplaces. Furthermore, it increases productivity. (Occupational Health and Safety Manual, Draft 2004)</p> <p>Teaching young children to position themselves properly at the computer and using good posture is essential to prevent the future development of serious injury.</p>  <p>To prevent eye strain, encourage students to look away from the screen every few minutes to rest their eyes. Stretching and shaking their hands at regular intervals are also good habits.</p>

Social, Ethical and Health

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plans:</p> <p><i>Electronic Mail</i> <i>Fishing For Facts</i></p> <p>A2.1 Perform a visual inspection of work station. Position the top of your monitor at or slightly below eye level; Place documents that are to be keyed close to the monitor; Keep computer screen clean and dust-free to minimize glare; Arrange lighting to minimize glare and reflections; Reduce eye strain through changing focus. (Glance across the room or out the window every fifteen or thirty minutes to look at an object at least twenty feet away); Increase your font sizes. This discourages one from hunching forward into the monitor to read things, putting pressure on nerves and blood vessels in the neck and shoulders.</p> <p>See appendix for a diagram of an ergonomic workstation. (Occupational Health and Safety Manual, Draft 2004)</p> <p>Discuss and demonstrate good posture and work habits required to reduce the risks of computer associated injury.</p> <p>Observe position at the computer and provide feedback to users. Create a checklist or rubric for assessment.</p>	1.1, 3.1, 3.3, 8.3, 4.1, 10.3		107-1, 107-12, 205-8		

Social, Ethical and Health

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>B2.1 demonstrate proper touch keyboarding techniques (Guided)</p> <p>D2.1 determine the technological requirements for specific career goals (Awareness)</p> <p>E2.1 respect equipment and other students work (Independent)</p> <p>E2.2 work cooperatively at work station (Independent)</p> <p>E2.3 adhere to acceptable use agreement for work station/network/Internet (Independent)</p> <p>E2.4 use electronic communication etiquette (Guided)</p>	<p>B2.1 Young children often use the hunt-and-peck method. Beginning typists must practice using proper fingering and home row position. Encourage students to use the piano position (arms at right angles and wrists flat) when they can. Initially, students will key very slowly using proper keyboarding techniques. After practice students will be able to key much faster than they can write with pen or pencil.</p> <p>D2.1 Technology competence is identified as an “Essential Skill” by Human Resources and Skills Development Canada. Statistics Canada has identified technology skills as important as numeracy and literacy to career success. Earning potential of persons possessing numeracy, literacy, and technological skills is five fold higher than those who have equivalent numeracy and literacy skills. <i>(Murray, T. Scott. Statistics Canada. A Presentation To Cabinet, Charlottetown, PE. January 28, 2005)</i></p> <p>E2.4 Establishing connections with classrooms in different parts of Canada or the world can be a powerful tool for the classroom teacher in all subject areas. Student assignments take on another level of authenticity when they are shared with other classes via telecommunications.</p>

Social, Ethical and Health

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>B2.1 Encourage students to coach or monitor each other's position at the computer.</p> <p>Use the reproducible keyboard diagram in the appendix to illustrate the proper home row finger positions. These may be posted on the walls near the computer monitors.</p> <p>For proper keyboarding skills and improvement on speed, practice simple online tutorials such as http://www.senselang.com/ or http://www.powertyping.com/qwerty/lessonsq.html</p> <p>D2.1 Brainstorm a list of occupations. Identify occupations which require use of technology and those that don't. Using the "Fishing For Facts" lesson plan as a guide, research information on the identified occupations to help determine CIT requirements. Present or showcase findings.</p> <p>E2.4 Use e-mail accounts or collaborative software to communicate among students in a class, school or the world. There are also sites to facilitate establishment of e-mail contacts between classes for particular projects.</p>					

Social, Ethical and Health

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>E2.7 Teachers should discuss with students the topic of privacy. Students should be made aware of situations when they should report to and ask adults for help.</p> <p>If students happen to open an objectionable site they should: Immediately click on the Back button to take them out of the site. AND Immediately contact the adult in charge. BUT If the first doesn't work, (and it sometimes won't) turn off the monitor and immediately contact the teacher.</p> <p>The Media Awareness Network (www.media-awareness.ca/) offers resources for teachers to use with students on Internet safety and ethics.</p>					
<p>E2.8 Internet personal safety guidelines for students: Never give out any personal information (personal details, phone number, address, etc.) about yourself, family or friends without permission. Tell an adult if something you see or read on the Internet or in e-mail gives you the "NO" feeling. Tell an adult if someone you meet on the Internet suggests that you meet him /her in person. Teachers may want to incorporate these guidelines in Personal Safety units in the grades 4-6 health curriculum.</p>					

Social, Ethical and Health

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>E2.9 follow publishing etiquette Adhere to the guidelines for school web pages as outlined by PEI Department of Education. (Awareness)</p>	<p>E2.9 Consider the following:</p> <ul style="list-style-type: none"> Do not type messages in upper case since this is the equivalent of "shouting". Take credit for your work, sign your e-mail messages and do not send a message using someone else's account. Do not compose e-mail that contains objectionable language or content. Do not send e-mail messages that contain large graphics or other components that take a long time to download. Always include a meaningful subject description in the subject line. Do not send junk mail to people. Remember that e-mail is not private. Do not send confidential information via e-mail. Use correct grammar and spelling. The use of chat programs and text messaging has given rise to emoticons such as ;>) and three letter abbreviations such as lol (laughing out loud). Consider the intended audience and whether they understand or appreciate their use.

Social, Ethical and Health

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
E2.9 Guidelines for publishing school material on the web may be found on Journey On (http://www.edu.pe.ca/journeyon/tech_support_pages/GuidelinesforSchoolWebPages.html)					

Internet

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>A3.1 demonstrate awareness of the Internet as a source of information (Guided)</p> <p>A3.2 Use various tools and strategies to carry out research (Awareness)</p> <p>A3.3 obtain/download material from Internet (Awareness)</p> <p>B3.1 Use the various browser navigation tools (Guided)</p> <p>B3.2 manage bookmarks/favorites (Guided)</p>	<p>A3.1 Users have access to a vast amount of information and resources provided by a number of organizations.</p> <p>A3.2 Regardless whether one searches a database, the Internet, a digital encyclopedia or similar digital containers of information, the quality of information will be contingent upon the formulation of the query. This observation gives rise to the consideration that “new age intelligence” does not depend upon the knowledge of a particular piece of information but instead depends upon the skill with which one can obtain required information.</p> <p>A3.3 Information may be obtained from the Internet in a variety of ways. Material may be copied from a webpage and pasted into a word processing document. Graphics may also be saved to the local computer by right-clicking on it and specifying a folder.</p> <p>B3.1 Be familiar with navigation, hotlinks and the back, forward and home buttons in the browser. For example, a student may follow any given links to a destination several pages or sites removed from the original starting point. At some point in time the student may realize that the followed links are not leading to the desired results and they wish to return to the original starting point. They could use the back button in the browser and return, page by page, to the original site. A faster way to return, however, is to use the "home" feature in the menubar. When the user clicks on "home", listed at the top of the browser page. There is also a history button for recently visited sites. By clicking on the original site in the list, the user automatically returns to that site rather than retracing steps through all of the visited sites with the use of the back button.</p> <p>B3.2 It is possible to record the address of a Web site that has been visited as a favorite (Internet Explorer) or bookmark (Firefox, Netscape). This enables the user to easily visit a favourite site again and again without retyping the address of the site.</p>

Internet

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plans:</p> <p><i>Did you hear that? Can you find it, please?</i></p> <p>A3.3 When obtaining information from the Internet it is advisable to check that the material is free for educational use or contact the author for permission.</p> <p>B3.1 Using a search engine, such as Yahoo!igans, practice navigating among web sites with the back, forward, home and history buttons.</p> <p>Observe difficulties encountered by students while navigating sites and provide specific feedback.</p> <p>B3.2 Save a web page URL for future reference, click on "favorites" in the menu bar. To organize websites folders may be created. Add the website to the appropriate folder by selecting it and pressing "OK". Sites and complete folders may be deleted when no longer needed by selecting "organize" from the "favorites" menu.</p>	4.1, 10.3		104-6, 106-1, 300-3		

Internet

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>B3.3 distinguish among various file formats, required plugins, file compression/decompression utilities (Awareness)</p>	<p>B3.3 Plug-ins are external browser enhancement programs which allow the user to enable file types to load automatically within a web browser. When using media which may require a plug-in it is a good idea to provide a link to the website where it may be obtained. Common plug-ins include Acrobat Reader, QuickTime, Shockwave Flash, Real Player, Windows Media Player and Java Runtime environment.</p> <p>Hypertext markup language is used to format web pages. The extension at the end of the filename is .html or .htm. Gif, .png and .jpeg are the main graphics file formats for web publishing. .jpeg is used for realistic graphics (photographs, art, images with shadows and shading) and .gif for graphics with a few colours. To reduce download times for video/audio, compression-decompression utilities (codec) are used to get the smallest graphic size possible.</p>

Internet

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>B3.3 Open a document labelled .pdf and observe that another application must launch to display or run the file. Repeat for Quicktime, Real Player and Windows Media Player files.</p>					

Internet

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>C3.1 discuss ways in which the Internet is evolving (Awareness)</p> <p>E3.1 critically evaluate information and its source based on pre-determined criteria (Awareness)</p>	<p>C3.1 Many Internet tools such as Gopher and Veronica, for example, that were once important for accessing information are less important today. The means by which we access information has been and continues to be simplified. Search engine technology has become more powerful and comprehensive. Commerce such as online merchandising, stock trading and online banking/bill payment are widespread. Educational/business tools such as whiteboards, discussion forums, chat rooms, audio/video access, file sharing and e-mail allow for collaborative opportunities. New concepts are constantly being developed while others are replaced. ie. blogs, wikis, IRC, ICQ, online entertainment, streaming radio, etc.</p> <p>E3.1 Most print publications such as magazines, journals, and books go through an editing or peer review process. Internet publication does not require individuals to meet these requirements. Therefore, users of Internet content must critically evaluate a site for the authenticity and quality of information and its source.</p> <p>The Media Awareness Network website (http://www.media-awareness.ca) provides teaching suggestions, activities and lesson plans.</p>

Internet

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>C3.1 Brainstorm new or novel uses for the Internet. Survey family members regarding how they use the Internet at work or at home.</p> <p>E3.1 As it is easy to publish information on the Web, it is essential to critically evaluate information found on the Web. Take note of the following features based on Kathy Schrock's Guide for Educators: Critical Evaluation Survey: Elementary School Level (http://school.discovery.com/schrockguide/evalelem.html):</p> <p>Page title - does it tell what the page is about? Graphics - how many? Are they big? Are they slow to load? Author's name or name of organization and e-mail address Date page was created and date last updated Information that is obtained from the site: - does it help answer my questions? - would another source have been better? - how does it differ from other sources such as books, CD-ROMs, magazines, etc.?</p>					

Concept Maps

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>A4.1 use brainstorming techniques to generate ideas (Guided)</p> <p>A4.2 create a web (Awareness)</p> <p>A4.3 categorize ideas graphically (Independent)</p> <p>A4.4 create links between ideas, re-link or delete links between ideas (Independent)</p> <p>A4.5 elaborate on ideas (Independent)</p> <p>B4.1 add fonts, graphics, sound, and colours to enhance ideas (Guided)</p> <p>B4.2 create hyperlinks to files, web sites, or multimedia content (Awareness)</p>	<p>A4.1 Concept mapping software exists to assist users in developing ideas resulting from a brainstorming activity.</p> <p>A4.2 The visual nature of a web (literary, concept, character, word, venn diagram, timeline) allows students to see patterns and relationships from ideas. Visual learning helps students strengthen critical thinking, comprehension and writing skills across the curriculum. Students may build graphic organizers to represent concepts and relationships.</p> <p>A4.3 Concept mapping encourages students and teachers to be creative. They are able to work together to create concept maps, story boards, cause and effect diagrams, and outlines.</p> <p>A4.4 Graphical software allows easy manipulation of linked ideas. Simply click on a link and drag it to a new location.</p> <p>A4.5 Further explanation on an idea may be provided by adding notes. These may be clues, activities or questions relating to clarification of ideas.</p> <p>B4.1 Learners are able to differentiate among ideas with colors, shapes, patterns, shadows, fonts and styles. Audio also supports multiple learning styles.</p> <p>B4.2 Gather and present information from multiple sources, including documents, by hyperlinking to any file. Create web pages with URL hyperlinks through the HTML export function and drag and drop JPEG and GIF images into a concept map.</p>

Concept Maps

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plans:</p> <p><i>Butterflies</i> <i>Environmental Impact</i> <i>Natural Disasters</i></p> <p>A4.1 Inspiration 7.5 is available on all school computers and teachers may use this as a useful tool for organizing group discussion and prompting students for input.</p> <p>A4.2 Rearrange data and experiment with relationships by using webbing, mapping, and timeline strategies.</p> <p>Provide a rational explanation for the way in which data was combined.</p> <p>B4.1 Express design creativity through the use of graphics, fonts, sound and color.</p> <p>Critique aesthetic qualities of the completed activity.</p> <p>B4.2 Link supporting detail or documentation to the graphic organizer that was created.</p> <p>Explain reasoning for the selection of particular documents used to support the concept.</p>	1.1, 1.2, 1.3, 1.4, 2.1, 3.1, 4.3, 5.1, 8.2, 9.1, 10.3	F8	104-6 108-3, 108-6, 206-6, 301-7		

Graphics

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>A5.1 create illustrations or graphics by using the various drawing tools (Guided)</p> <p>A5.2 apply principles of design (Awareness)</p> <p>B5.1 demonstrate various object editing features (Guided)</p> <p>B5.2 carry out various object manipulations (Awareness)</p>	<p>A5.1 Graphics programs can be used as an alternative learning strategy to explore and experiment with geometric shapes and relationships. The computer provides a highly interactive environment for the learner in which precise geometric shapes can be created and then altered with respect to their size, orientation colour and position.</p> <p>A5.2 The appearance of a document can be greatly influenced by the font, text size and layout of the text as well as the choice of graphics and the layout of the graphics on the page. There are certain basic rules of effective page design which are easy to implement and which can have a huge impact on the appearance of the final product. For a document, use a consistent font size and style for body text. Titles can be from a different font family and larger in size. It is advisable to use no more than three font styles per document.</p> <p>B5.1 Graphics programs provide the user with on screen tools (ie. select, unselect, resize, crop, area fill, add colour and pattern, size adjustment using the mouse or scale, various erasing techniques, object orientation, changing font and text size, colour or appearance, creating text blocks, change text wrap selection and other text manipulation functions) that can be used to design and create illustrations, slide presentations, diagrams, timelines, graphs, maps, and charts of various sorts. In addition to original works, students can import images acquired from a scanner, digital camera or the Internet and incorporate these images into their projects.</p> <p>B5.2 Students can make precise geometric shapes and then change the size, orientation, colour, and perspective of the shape. Manipulations may be applied to several objects at the same time.</p>

Graphics

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plans:</p> <p><i>Digital Geometry, All About Me, Butterflies, Shapes Make Pictures</i></p> <p>A5.1 A tutorial regarding Appleworks 5 graphics tools may be found at http://www.edu.pe.ca/journeyon/pro_d_pages/awgraphics/awgraphics.htm</p> <p>Individual lesson plans may contain downloadable files composed of preformatted objects.</p> <p>A5.2 Prepare an assessment rubric relating to guidelines for graphics as follows: graphic selection, incorporates visual elements, fonts clear, text colour and background agree, consistency, spelling, etc.</p> <p>B5.1 Create patterns with 2D and 3D shapes with various attributes such as size, colour, line thickness, etc.</p> <p>Alternatively, the objects found in the downloadable files may be manipulated using a variety of tools.</p> <p>Ensure that students use a variety of techniques to modify objects.</p> <p>B5.2 Align or combine objects created from B5.1 using layering, alignment, grouping features. Demonstrate.</p>	4.3, 10.3	A1, F3, E1, E3, E4, E7, E10, E11			

Spreadsheets

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>A6.1 plan/design a spreadsheet to organize and tabulate data from various sources (Awareness)</p> <p>A6.2 correct errors, modify or delete data in a cell (Awareness)</p> <p>A6.4 use different types of graphs/ charts to visually represent data; label graph components (Awareness)</p> <p>B6.1 identify spreadsheet components and terminology (Awareness)</p>	<p>A6.1 A spreadsheet is a computer program designed to facilitate the manipulation of data in the form of words, numbers, or graphics. It is important that learners have an understanding of the various types of data (i.e: schedule, tally/score sheet, solve a mathematical word problem) which can be stored and manipulated using the spreadsheet. You can enter numbers, text, or formulas into your spreadsheet.</p> <p>Once the student has an understanding of the types of data which can be entered into the spreadsheet, they are better able to design a spreadsheet which will meet their needs.</p> <p>A6.2 Students should be made aware of how spreadsheets simplify the task of calculating by immediately recalculating when data is modified. Emphasize the importance of entering data correctly and estimating the expected result. This is a necessary skill to detect an incorrectly entered formula.</p> <p>A6.4 By entering data into a spreadsheet students are then able to make a variety of charts and graphs (i.e:line, pie, bar).Labels such as legend, title,xy axis can be created. Students will be better able to interpret charts and graphs after having created their own using spreadsheet software.</p> <p>B6.1 Spreadsheets are formatted as tables that consist of rows and columns. Each row is identified by a number, while each column is identified by one or more letters. Each box in the table is referred to as a cell. The row and column that intersect at the cell provide the cell with its address. The address consists of the letter representing the column followed by the number representing the row.</p>

Spreadsheets

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plans:</p> <p>Chart It Noise Pollution Pocket Change Math Facts What's in the Party Bag?</p> <p>A6.1 Discuss situations where the use of a spreadsheet is desirable. The spreadsheet is better suited for reoccurring situations where the user wants to record numeric data and perform calculations. ie. attendance, growth chart, milk sales, etc.</p> <p>Demonstrate the purpose of a formula by inserting two numbers and entering a formula to add them together to provide a sum. Note that this may be accomplished with the formula "+A1 + A2" or "=sum(A1..A 2)" in cell A3</p> <p>A6.2 To delete an entry click on the cell to activate and tap the "delete key". To add data, click to activate the cell. Data will appear in the formula bar. Press enter to place the data in the cell.</p> <p>A6.4 For access to the graphing capabilities of the AppleWorks spreadsheet, the user must enter data into the spreadsheet. Once the data is entered, select the data which is to be graphed and click on Options/Make Chart. This will open the Chart Options window.</p> <p>B6.1 Introduce spreadsheet terminology and insist that this terminology be used.</p>	5.1, 10.3	A7, B9, B13, B17, F1.2, F1.4, F2.2, F2.5, F3.1, F3.4, F5.2, F5.3, F8.2	104-1,106-4, 108-1, 108-3, 204-6, 205-5, 205-8, 206-2, 206-9, 207-6	4.4.2	

Spreadsheets

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>B6.3 enter data into simple pre-existing spreadsheets, auto fill data, data entry bar, sort data (Awareness)</p> <p>B6.4 edit spreadsheet layout (Awareness)</p> <p>B6.6 format numbers and text (Awareness)</p>	<p>B6.3 Students are first introduced to pre-created spreadsheets that allow them to record simple data. This data may result from activities such as a class survey. Pre-entered formulas allow the student to recognize that spreadsheets can perform a calculation function.</p> <p>B6.4 Once the spreadsheet is created in draft form there will be many occasions for revision. These types of editing changes are easily carried out with AppleWorks but it is important for students to understand the implications of these changes. Any formulas or calculations carried out on the inserted/deleted rows or columns will be effected by these revisions. Cells may be added, deleted, locked or unlocked in a spreadsheet by clicking on "Calculate/Insert or Delete cells" and "Options,Lock or Unlock" and selecting the necessary range of cells to move or lock.</p> <p>B6.6 When using a spreadsheet, it is often necessary to format the data entered. Numbers may require a certain format ie. number of decimal places, currency or percentage. There are several preset forms in AppleWorks to allow the user to display data in the format appropriate for that particular situation.</p>

Spreadsheets

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>B6.3 Activity files are provided with lesson plans. These files contain the structure to organize data. Assist student with initial procedures and monitor progress.</p> <p>B6.4 When data becomes too large for the cell, simply drag the cell border to the right. Alternatively, select “format” from the pulldown menu and “column width” or “row height” option to adjust all cells in the spreadsheet.</p> <p>To insert a column or row select “calculate” from the pulldown menu and “insert cells” option. Demonstrate adding a row by creating space in the example lesson plan file (ie. pocket change) for a title.</p> <p>B6.6 Select “Format” from the pulldown menu and “number” option. Currency, percent, decimals, date, time, etc. may be applied to the data in a cell. Apply currency, 2 decimal places (dollar signs) to the total row in the example lesson plan file (ie. pocket change lesson plan).</p> <p>Note: A tutorial on Appleworks (Clarisworks) spreadsheets exists on the Journey On website at: http://www.edu.pe.ca/journeyon/tech_support_pages/help_manual/ssheet/default.html</p>					

Word Processing

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>A7.2 identify examples of desktop publishing (Independent)</p> <p>B7.1 use a grade level appropriate word processor to create and edit written work (Independent)</p> <p>B7.2 locate characters on a keyboard and identify functions of word processing (Independent)</p> <p>B7.3 use editing tools to revise work (Guided)</p>	<p>A7.2 Use concrete examples of computer generated media such as magazines, brochures, catalogues, newspapers to demonstrate how technology is used to create written and illustrated text.</p> <p>B7.1 Students can be introduced to using word processing to develop effective writing. As students develop new skills in writing, they can be introduced to new keys and functions. Once students become familiar with the various components of the writing process, cut and paste functions can be introduced.</p> <p>B7.2 Writers will become familiar with the keyboard through use. It is simply necessary that writers be able to key their ideas at a pace similar to composing with pencil and paper. Keyboarding skills for independent writers should be sufficient for them to keep up with their line of thought. (APEF English Language Arts Curriculum Document for Grades Entry-3, page 240).</p> <p>B7.3 The advantage of using a word processor as a writing tool can be attributed to the ease with which text can be inserted, deleted, rearranged, and corrected.</p>

Word Processing

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plans:</p> <p><i>Environmental Impact</i></p> <p>The outcomes related to word processing can be taught when using the computer in any curriculum area. Teachers are encouraged to introduce one or two word processing skills in each lesson.</p> <p>A7.2 Provide or create an exemplar. Publish written work by printing a hard copy.</p> <p>B7.1 Begin to use a simple word processor such as Appleworks or Ultimate Writing Creativity Centre.</p> <p>B7.2 Use the characters of the keyboard and the simple function keys such as the space bar and enter key. Change the style of the characters, words, lines, paragraphs, and pages of the written work. These changes are termed formatting and enhance the presentation of student writing.</p> <p>B7.3 All work must be spell checked. Encourage students to increase their vocabulary with the use of the thesaurus.</p>	4.3, 4.4, 8.1, 8.2, 9.1, 10.2, 10.3		206-2		

Word Processing

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
B7.4 change font, size, colour, and style of text (Independent)	B7.4 Change text attributes by selecting upper and lower case letters, underlining text, placing spaces between words and changing font, style, colour and size of text.
B7.5 format text (Guided)	B7.5 Word processing is one strategy to develop effective writing. As students develop new skills in rearranging sentence structures and sequencing of events. Publication of projects can develop more of a professional appearance by introduction to more advanced stylistics (i.e., justification, columns, line spacing, outlines, text wrap, and bullets).
B7.6 format documents (Awareness)	B7.6 Pages may be formatted by inserting page numbers, changing margins, tab rulers, and creating borders, headers and footers. Single pages may be centered vertically. A watermark is text or graphics that appear in the background of each page ie. the word "Draft" is often inserted in documents before becoming accepted or an image may be placed as a background of a story or poem ie. image of a soldier in a Remembrance Day poem.
B7.7 insert a graphic and manipulate (Guided)	B7.7 Graphics may be manipulated in either a graphics program, such as Paintshop Pro, or in the word processor. Images may be imported, acquired from a scanner, digital camera or from the Internet. Many word processors come with a clipart library or a text art feature that allows text to be created as a graphic. ie. templates for placing text in arcs, circles, waves, 2D or 3D format, and in different colors.
B7.8 insert and format tables (Awareness)	B7.8 The presentation of data may be enhanced by placing it into a table. Individual cells in the table may contain their own formatting attributes. Text may be aligned, border lines added or removed, thickness adjusted and pattern, colour or shading added. The entire table may be resized and moved around within the document.

Word Processing

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>B7.4 to B 7.8 The design needs of a document will determine the appropriate use of these features.</p> <p>Suggested activities which may incorporate some or all of these outcomes follow:</p> <ul style="list-style-type: none"> - create a story by providing a starting sentence and students take turns by adding a sentence. - create a class story to provide a model for writing. - write a group story or report. Each student can have the responsibility for a section which can be combined into one publication. - create an on screen book or presentation. - create a new story by revising a story read in class. 					

Multimedia

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>A8.1 apply planning strategies (Awareness)</p> <p>A8.2 create an age/grade appropriate slide show presentation that may contain one or more of the following objects :text, graphics, images, animations, audio and video (Awareness)</p> <p>A8.5 select appropriate medium to convey a message (Awareness)</p> <p>B8.1 navigate multimedia resources such as slide shows, online resources or CD-ROM interactive educational activities (Independent)</p>	<p>A8.1 Time devoted to pre-production planning (i.e: storyboards, scripts, graphic organizing, brainstorming) with paper and pen or software tools will result in a better quality product and save time in the long run. Should group work be involved in the production process, this planning will help to organize and coordinate individual activities.</p> <p>A8.2 A slideshow allows curriculum to be presented using new media in fun and interesting ways. This can be very motivating for the student. Use existing multimedia resources or create multimedia components using equipment available in schools.</p> <p>A8.5 Choice of media may include slideshow, web page, brochure, newsletter, report, etc. Every media has its particular strengths. The choice of media would depend upon the intended audience and the activity. Be conscious of file size, formats and storage locations.</p> <p>B8.1 Navigation is similar for most multimedia resources. With the advent of home entertainment centers, most students have experience with alternative navigational schemes. Should the navigation system not be apparent, users should consult the help section or user manual.</p>

Multimedia

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plans:</p> <p><i>All About Me</i> <i>Natural Disasters</i> <i>Shapes Make Pictures</i></p> <p>A8.1 Use Inspiration software as a planning, brainstorming, organizational tool. Submit or present a plan for the activity.</p> <p>A8.2 Use Appleworks or Presentations 9 to create a presentation about a research project or topic. Depending upon the project, groupwork may be assigned with individuals being responsible for different aspects of the slideshow ie. graphics, text, spreadsheet graph, sound, etc.</p> <p>A8.5 Discuss project possibilities and mediums. Front Page Express (web authoring), Appleworks (newsletters, brochures, slideshows), Presentations 9 (slide shows), Ultimate Writing Creativity Center (newsletters, reports), Inspiration 7.5 (web pages, images) software may be used.</p> <p>B8.1 Demonstrate navigational conventions used with various media.</p>	1.2, 2.1, 1.1, 4.3, 5.1, 6.2, 8.2, 9.1, 10.3		206-2, 301-7	4.3.2	Art: GCO 2, GCO 7

Database

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>A9.1 use and existing database (Independent)</p> <p>A9.2 perform searches on a database file using logical and boolean operators (Guided)</p> <p>A9.3 design/plan a database to use as a method of organizing information (Awareness)</p> <p>A9.4 create and modify a form (Awareness)</p>	<p>A9.1 Databases can help students to develop organizational and problem solving skills by engaging them in tasks that involve organizing and sorting information from research to test hypotheses, retrieving information, discovering relationships and commonalities, and predicting trends.</p> <p>A9.2 The primary purpose of any database file is to store information so that it can be retrieved quickly and accurately. A database query can range from the simple (eg. Show all the records which are located in Charlottetown) to the complex (eg. Show all the records located in Charlottetown, who are younger than 35 and are females only). The second example demonstrates the use of logic operators (less than, less or equal than, greater than, greater or equal than, not equal and equal) as well as the use of Boolean operators (AND, OR, NOT, AND NOT).</p> <p>A9.3 The selection of database fields, field types and the format that information is entered has an effect on the information that can be retrieved when the database is complete. For this reason it is important that students have some practice in the practical application of database principles. Proper understanding of a particular problem and the types of questions to be answered from the data will make the design and use of the database more efficient.</p> <p>A9.4 A data input form may be designed to house fields that will allow users to enter data for a particular record i.e. reading log with fields for title, author, date, genre, and response. Graphics, text and colour may be added to this form. Data must be entered consistently and accurately for later data retrieval. If spelling errors occur, search strategies will not be reliable. Some databases have features that help reduce the occurrence of errors such as drop-down menu choices i.e. Mr., Mrs., Ms. or a rule that will check to make sure that data is not outside a certain range i.e. age is not over 100.</p> <p>Terminology: All data about a particular topic is known as a file or database (i.e. all books); data is grouped into records (all data concerning one book); records are divided into fields (individual pieces of data about a book i.e. title, author, etc).</p>

Database

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plans:</p> <p><i>Exploring Canada</i> <i>Creatures</i> <i>Canadian Mammals</i> <i>What Are You Reading</i></p> <p>A9.1 Submit queries in a pre-existing database such as a search engine or library book database.</p> <p>A9.2 Visit a search engine (www.altavista.com) which is a very large database. Practice searching for statistics for PEI using Boolean operators in the “advanced search” area. eg. pei “lobster OR shellfish”, pei tourism NOT guide, pei AND rockets (note that using “quotations” is the same as using AND to limit a search)</p> <p>A9.3 A database provides a way to record independent reading. Brainstorm fields that will be required to provide useful information. Identify the field types necessary.</p> <p>A9.4 Create the data input form for the activity in A9.3. Add a graphic relating to reading, a title such as “Independent Reading Log” and colours for the field data entry box. Identify fields for which drop-down or error checking routines may be applied. i.e.: pull-down menu for genre and error checking for date falling within 1900-2005 range, “field cannot be empty” or “field must be unique” i.e.: Dewey Decimal number</p>	4.3, 5.1, 9.1, 10.3, 10.5	F1,F8	205-5 206-2 302-1	4.3.1 4.4.2	

Database

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>A9.5 use databases to analyze data and look for trends (Awareness)</p>	<p>A9.5 Databases created in Appleworks use query techniques. Layouts may be created that contain specified fields. Records may be sorted into ascending or descending order. Particular records may be searched through the “find”, “match records” or “omit” features. See the Journey On online tutorial relating to Appleworks databases (http://www.edu.pe.ca/journeyon/tech_support_pages/help_manual/database/default.html)</p>
<p>B9.1 enter data into a pre-existing database, edit cell data, and use automated text (Guided)</p>	<p>B9.1 Compare non-computer databases to electronic databases. Convey to students that computers are advantageous because of the speed and ease with which information can be organized, stored, searched and retrieved.</p>
<p>B9.2 create fields and with variable field types and properties (Awareness)</p>	<p>B9.2 Fields are assigned a “data type” which will allow the program to store data in a particular format. i.e. date will allow options for specifying information display as day, month, year or month, day, year or year, month, date, etc. Numeric fields allow calculations to be performed with the data in reports.</p>
<p>B9.3 restructure database (Awareness)</p>	<p>B9.3 No matter how well the database is planned, there will be times when certain elements of the database must be changed. There may be need to add a field that was omitted, delete a field that is no longer required, change the size of the field to allow for more information etc. In all cases, the information in the database will also have to be modified manually. For example, if a field is added to the database where there are already 100 records, then each piece of information that goes into the new field will have to be added for each of the 100 records. Also, when deleting fields, data contained in the field to be deleted will also disappear. For this reason, it is important to be careful when making changes to an existing database as the consequences could be the inadvertent loss of data.</p>
<p>B9.4 sort records alphabetically , numerically and by multiple fields (Awareness)</p>	<p>B9.4 In the What are you Reading example, the records may be sorted by “Author” as key one. Should two authors have the same last names a second key “first name” sort can be specified.</p>

Database

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
A9.5 Refer to the lesson plan “What are You Reading”. Review the chosen fields for this database. Under “Suggestions For Further Activities” a number of questions are provided. Use these as an assessment or as a resource to brainstorm further questions/trends.					
B9.1 Enter new information into a pre-existing database. This information may result from their own research activity. Refer to the following activity file for entering information into a pre-existing database 4bkrec.cwk(Appleworks)					
B9.2 Assign field types to match the data that will be placed in the fields i.e. number, text, date. Change text colour and font. Provide any prompts for the user as to the format in which data should be entered.					
B9.3 Add a new field to the database ie: ISBN number; Remove this field from the database.					
B9.4 Once students have entered data records for the lesson plan activity demonstrate multiple field sorting with the following examples: sort the data by title, genre, rating, etc					

Database

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>B9.5 create a report from the entire database or selected records (Awareness)</p>	<p>B9.5 Users may create a report from the database. These reports will contain parts of the information arranged in some particular fashion. To create a report, a layout containing the necessary fields is prepared. Once this layout has been created, and sort and match criteria specified, the report can be printed in this format. Alternatively, the information can be cut and pasted into another wordprocessor as part of a larger written report or presentation.</p>
<p>E9.1 examine functions and implications of database driven websites (Awareness)</p>	<p>E9.1 Database software is the most widely used business application. It is used to track inventory, customer information, supplier information, sales and banking data, etc. Electronic commerce (e-business) has required that databases be connected to Internet web sites to provide specific information to customers or to collect information from them. Special Internet security features must be built into these online database systems to prevent identity theft, fraud and to protect credit card transactions.</p>

Database

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>B9.5 Create a report from the data in the lesson plan. Create a new layout and select the fields for the second sort from B9.4 -author, title, genre . From the pull-down menu select “Layout” - “New Layout” - “Columnar Report”. Enter a name for the report i.e. Favorite Books. Set the field order as author, title, genre . To sort the records for this report select “Organize” - “Sort Records”. Move the author, title, genre field names into the sort order box and specify ascending or descending. Click OK.</p> <p>Observe progress and check that records are in specified sort order.</p> <p>Specify records to be included in the report by selecting “Organize” - “Show All Records” and “Layout” - “Find” and specify the field data you would like.</p> <p>E9.1 Visit an online business site such as Vesey's Seeds (http://www.veseys.com) and search for a product. Identify the features that are associated with a database application.</p>					

Telecommunications

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>A10.1 collaborate using software (Awareness)</p> <p>B10.1 send messages (Independent)</p> <p>B10.2 open messages (Independent)</p>	<p>A10.1 Within the classroom, collaborative tools (ie. whiteboard, slideshow, application sharing, chat, messaging, send and receive files, photos, group file sharing, resource sharing (links), online content creation and sharing, assignment drop box, video and audio, discussion forums, journal.) make it possible for students and teachers to work together in a virtual workspace. This is particularly useful when students are involved in groupwork outside of class time and live a distance apart. These tools may also make it possible for students with illness to stay in touch with peers and class activities.</p> <p>Establishing connections with classrooms in different parts of Canada or the world can be a powerful tool for the classroom teacher in all subject areas. Student assignments take on another level of authenticity when they are shared with other classes via telecommunications.</p> <p>Every student is issued a web accessible email account. With use their abilities will evolve and they will make more use of this tool for collaboration.</p> <p>B10.1 Each student on Prince Edward Island is provided with an e-mail account. As with regular mail, e-mail requires an address. The address begins with a username followed by an @ symbol and the domain name. It is important to write the full e-mail address without any spaces.</p> <p>B10.2 The language skills of grade four students may be sufficiently developed to independently send an e-mail message.</p>

Telecommunications

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plan:</p> <p><i>E-mail: Electronic Mail</i></p> <p>A10.1 Use of collaborative tools expands the resources available to the classroom. The teacher and students can communicate with each other regarding questions from discussion in class. Teachers can model the information process by accessing online experts. This demonstrates that teachers, just like students, do not have all the answers but have the skills to find out. During an author study, students may correspond with the author by e-mail. Questions concerning the publication could be directed to the author and the response reported</p> <p>B10.1 Grade four students are sent and email message by their classmates.</p> <p>B10.2 Alternatively, students could be paired with students from another school.</p>	1.2, 3.3, 10.3				

Telecommunications

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>B10.3 manage mail/folders (Awareness)</p> <p>B10.4 manage address books (Awareness)</p> <p>B10.5 use distribution lists (Awareness)</p>	<p>B10.3 Mail messages that a user may want to save for future reference may be organized into separate folders. i.e. friends, projects, teacher, family, etc. Storage space is limited, therefore, users must periodically review mail messages and delete those that are no longer useful.</p> <p>B10.4 An address book maintains the email addresses of correspondents. When composing new mail messages, the address book may be accessed to provide the correct user. All students and teachers will be listed in the main address book area. Multiple personal address books may be created and outside or frequently used addresses may be added. i.e. friends, family, project group, team, etc.</p> <p>B10.5 A distribution list allows a user to send a single message to many recipients without having to type individual addresses. i.e. the teacher may want to send the same message to everyone in a particular class. To create a distribution list, the user adds individual addresses and saves the “group” with an identifiable name. eg. grade 4 class. This distribution list or “group” is saved in a particular address book.</p>

Telecommunications

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
B10.3 Create folders to organize received email. Transfer mail messages into created folders.					
B10.4 Create an address book for classmates. Add individual addresses to this book.					
B10.5 Divide students into small groups. Each student create a distribution list for the members in their group. Save the distribution list in the address book created in B10.4 with an identifiable name. Send a message to all members in the group by placing the distribution list name in the TO: field from the address book.					

Telecommunications

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>B10.6 Assign a peer editing activity in which one student composes story in a word processor. A second student is sent the file as an attachment and suggests improvements. (designate whether this might be spelling, punctuation, sentences, etc.) The file with suggested changes is returned by email.</p> <p>B10.7 Choose a short quotation from a selected reading activity that has personal meaning. Setup this quotation as an email signature.</p>					

Web Authoring

<i>Students will be expected to:</i>	<i>Instructional Considerations</i>
<p>A11.1 identify web page creation possibilities (Guided)</p>	<p>A11.1 Many opportunities exist within the grade four curriculum for publishing class activities. This may be a method of celebrating the completion of a theme or unit. It provides a means for parents to see their child's work or activities. Many PEI Elementary school websites contain numerous completed activities that may be used as examples.</p>

Web Authoring

<i>Teaching Suggestions, Activities and Assessment</i>	<i>Links to Specific Curriculum Outcomes</i>				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plans:</p> <p><i>Butterflies</i> <i>Fishing For Facts</i></p> <p>A11.1 Visit numerous sites to identify their characteristics.</p>	4.1, 4.3, 5.1, 8.1, 9.1, 10.3		201-4, 205-5, 302-1		

Lesson Plan: E-Mail

Outcomes	Activity
<p>Technology A10.1, B10.1, B10.2, B10.3, B10.4, B10.5</p> <p>Language Arts 1.2, 3.3, 10.3</p>	<p>Electronic mail is an important component of communication and information technology. E-mail is an instant, free, “no stamps required” form of communication. This introductory activity introduces students to the basics of electronic mail and the idea of having penpals over the Internet, a partnership known as keypals.</p> <p style="text-align: center;">Resources</p> <ul style="list-style-type: none"> • E-Mail • Class list of e-mail addresses <div data-bbox="706 842 1380 1270" data-label="Image"> <p>The screenshot shows the Novell GroupWise WebAccess interface. At the top, it says 'Novell GroupWise WebAccess' and '(Thursday) Atlantic Daylight Time'. On the left, there are navigation icons and a folder tree with options like 'Add Folder' and 'Delete Folder'. The main area shows a 'Mailbox' with 20 messages, and a list of folders: 'Unopened Items', 'Sent Items', 'Calendar', 'Checklist', 'Cabinet', 'Junk Mail', and 'Trash'. On the right, there are three message thumbnails, each with a checkbox and an envelope icon.</p> </div>
Suggestions	Instructions
<p>A Classroom Discussion: Why??</p> <p>Students should be reminded that e-mail is not private but should be thought of as a postcard. School administration has access and the right to read any e-mail on the school system. This includes both student and staff e-mail. Currently, teachers are using Novell Groupwise Web Access.</p> <p>As of September 2005, all students will be using Netmail which has the “look and feel” of Groupwise.</p>	<p>Sending a message (Groupwise):</p> <ol style="list-style-type: none"> 1. Click on the new message icon. 2. Click Address Book to add recipients in the To, CC, and BC boxes. or Type a recipient’s address in the To, CC, or BC box. The address can be a GroupWise user ID, GroupWise full name, or external e-mail address. Separate each address with a comma. 3. Type a subject and message. 4. You can include Web site locations or addresses (URLs) in both the Subject and Message boxes. 5. (Optional) Click Spell Check to spell check the message. For this feature to work, your browser must be enabled for Java. (Optional) Click Attach to attach files to the message. For this feature to work, your browser must support attachments. 6. Click Send Options to select a security setting (classification), assign a priority (high, standard, low), request a reply, or select to receive return notification. 7. Click Send.

Lesson Plan: E-Mail

Instructions (*continued*)

The teacher, or designated student, can e-mail on-line “experts” with questions from discussion in class. The responses can be shared with classmates. Accessing resources allows teachers to model the information process and demonstrates that teachers, just like students, do not have all the answers but have the skills to find out. On-line “experts” also allow for discussion on the importance of the credibility of the source when using the Internet as a learning resource.

Sending Attachments with your e-mail message: (Groupwise)

1. In the mail message window, click on the Attachments button.
2. In the Attachments window, click on Browse.
3. In the Choose File window, locate the file that you wish to attach and then click on Open.
4. Click on the Add button. The file will now be listed below the line.
5. To add another file as an attachment, click on Browse once again and repeat the above steps.

Once all the files you wish to attach are listed, click on OK. You will return to the Mail Message window and the attached files are listed with a small paper clip image just under the subject field.

Viewing Attachments

When you view an attached file, GroupWise WebAccess attempts to convert the file to HTML and display it in your browser. If GroupWise WebAccess cannot convert the file, you can try to have your browser display the file. Depending on how your browser is configured to handle the file, the browser may display the file, launch an application to view the file in its native format, or save the file.

Opening Attachments

When you open an attached file, the file is opened in your browser in its native format if your browser supports the file format and if your browser is set up with the correct association for the file format. In addition, you might be able to edit the file if you have the appropriate plug-in (for example, the MSWord plug-in allows you to edit a .doc file in the browser). If you try to open a file with a format that is not supported in your browser or that does not have an association in your browser, you are prompted to save the file to disk.

Lesson Plan: E-Mail (KeyPals)

Instructions (Keypals)

STEP 1 - Learn to Use E-Mail

Before you get things rolling, it is important that you know how to use e-mail and that you recognize its strengths and limitations. Students should also know how to use e-mail before the project gets started. Usually it takes one or two lab sessions to learn how to send and receive e-mail messages independently.

STEP 2 - Find a Partner

The next step is to find a partner class with which your students can correspond. Keep in mind that this class can be anywhere in the world, including your own province (another class following the same curriculum) or your own school (another class at the same level or perhaps another grade). Finding partner classes in your own school or province is easy since you can network with your colleagues.

Consider how students will correspond with one another. You may want to have student-to-student correspondence (each student sends a message to his/her keypal) or class-to-class correspondence (each class composes one message and sends it to its partner class). You want to have students outline their e-mail messages before each computer session to make good use of their time at the computer. Also, keep in mind that keypal messages don't have to be as long as traditional penpal letters because the communication between keypals will happen very quickly and more often. You and your partner teacher should outline a reasonable time frame for students to send and receive messages. It is important to determine these expectations up front, so one class will not end up sending all the messages and receiving none.

Your access to the computer lab (or students' access to the computer in your classroom) will affect how often your students can send messages to their keypals. You should also consider how long your computer session will run because you don't want to end up saving a lot of half written messages.

After the initial "get to know you" messages, do you want to have the students exchanging ideas or comments on specific topics? For example, they could discuss what it means to be an Islander, how the farming or fishing industry affects their communities, or share their creative writing. By outlining (with your partner, teacher) specific topics for discussion, you can guide students in their message writing and, at the same time, discourage too much idle chatting.

Lesson Plan: All About Me

Outcomes

Technology A5.1, A5.2, B5.1,
B5.2

Language Arts 4.3, 10.3

Suggestions

- It might be helpful for students if they planned their slide show on paper first. Having a storyboard to work from may also save some time in the computer lab.
- Use a large font, at least 24 pt.

Activity

The grade 4 theme Collections: Within My Circle focuses on identity, family, relationships and friendship. Students have many opportunities as they read the selections in this theme to think about their own identity and the relationships they have in their lives. As part of the introduction of this theme or as a wrap up final activity for the theme, students can create a slide show to show to the rest of the class. The content of the slide show is all about them, who they are, what they like and the relationships they have in their lives.

Resources

- A word processor-Appleworks (slideshow)
- Collections: Within My Circle anthology

Instructions

This activity can serve as an introduction to or a culminating activity for the Within My Circle theme. Students can use AppleWorks slide show to create a presentation to introduce themselves to the class. Here is an example of what the slide show might include:

Slide One - Title Slide - (whatever the student would like to include along with the title of the slide show.

Slide Two - Facts about me: name, age, hair and eye colour

Slide Three - Interests and hobbies

Slide Four - Family Members

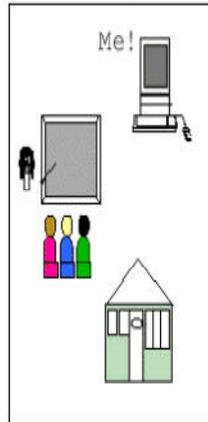
Slide Five - Favourites (favourite food, colour, movie, television show, sport, etc.)

See next page for examples of each of the slides.

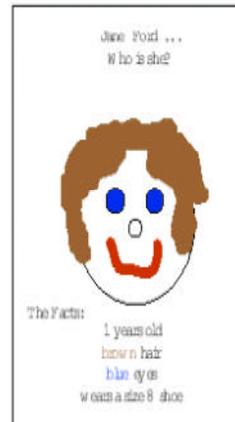
Instructions on how to create a slide show follow on the next few pages. In creating their slide show, students can use the clipart that comes with AppleWorks and Colour Magic.

Lesson Plan: All About Me

Here is an example of what a finished product of a slide show might look like:



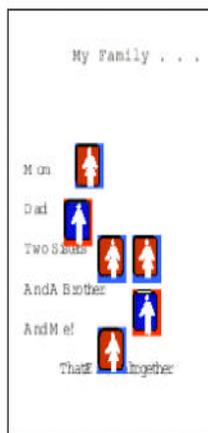
Slide 1



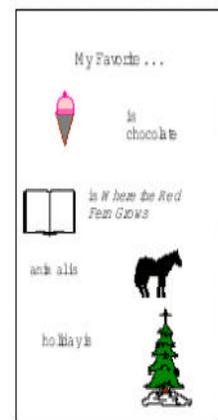
Slide 3



Slide 2



Slide 4



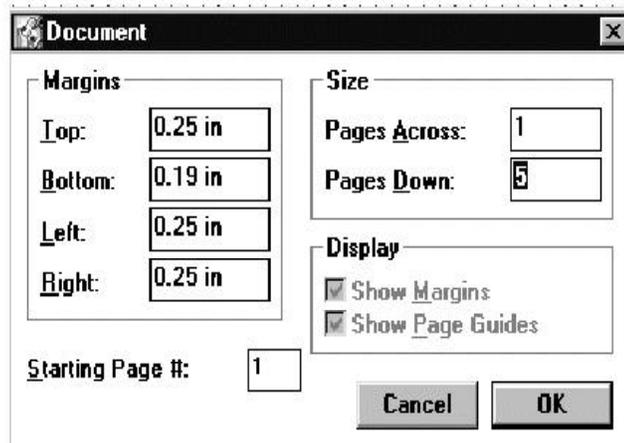
Slide 5

Lesson Plan: All About Me

Creating the slide show in AppleWorks:

To create the slide show, go into AppleWorks and choose the Drawing application. Once you are in the AppleWorks Drawing, click on **FORMAT** in the menu bar and then choose **DOCUMENT**.

When the Document Window pops up (see picture below), click into the box beside **Pages Down** and erase the 1 and type in the number of pages you want in your slide show. For this slide show we will create 5 slides.



Now click on **WINDOW/PAGE VIEW**.



Lesson Plan: All About Me

Instructions (*continued*)

In AppleWorks Drawing, you can use the different graphic tools (seen below) to add text and pictures (that you draw) to your slides.

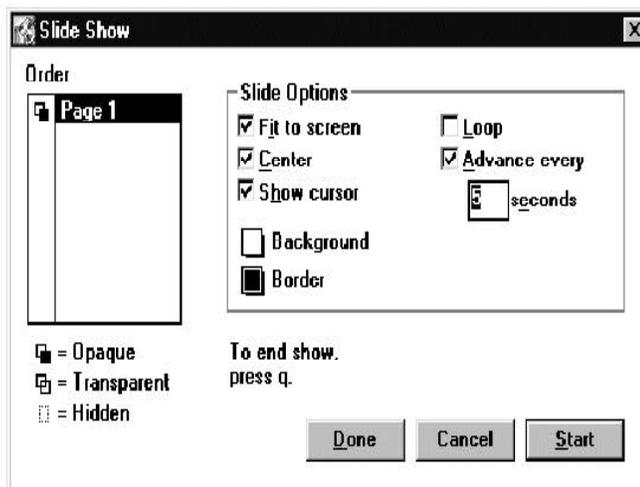
Select tool			Text tool
Spreadsheet tool			Paint Frame tool
Line tool			Rectangle tool
Rounded rectangle			Oval tool
Arc tool			Polygon tool
Freehand			Bezigon tool
Regular polygon			Eyedropper

The tools seen above will create exactly what they appear to create. The Rectangle tool will create squares and rectangles, the Oval tool makes ovals and circles, the Line tool will draw straight lines, and the Text tool writes text on your slide, etc.

When the slide show is complete click on WINDOW /SLIDE SHOW. When the Slide Show Window pops open (see diagram below), you can choose a Border and Background colour by clicking on the boxes before these words. When you click on these boxes you will see the colour palette. Simply click the colour that you want for the Border and the Background. The default colours are white for the background and black for the border.

Other Activities

- Slide shows can be created for many different purposes. As a final product for a research project, students can choose a slide show to present their research.
- Import graphics from the web.



When you click Start, you will see your first slide. Hit the Enter key or click the left mouse button to advance to the next slide. When you have gone through all of the slides, hit the Q key or the Esc key to quit the show.

Lesson Plan: Chart It

Outcomes

Technology A6.1, A6.2, A6.4, B6.1

Math F1.2, F1.4, F2.2, F2.5, F3.1,
F3.4, F5.2, F5.3, F8.2

Science 204-6, 205-5, 206-2

Suggestions

- If students have never used a spreadsheet before, have them try the Count the Shapes lesson from the Grade 1-3 technology lesson plan book. This is a quick and simple activity that will familiarize them with how to enter data into a spreadsheet and how to move around inside a spreadsheet.
- When you are organizing data on a spreadsheet to create a graph, you must organize the data in consecutive columns and rows. It does not matter which rows or columns you choose, but you must remain consecutive. In organizing the favourite subject categories, we began in cell B2 and continued down to cell B6, without skipping a cell. We began again in column C and organized the corresponding numbers in their appropriate locations next to their categories. The next column began in cell C3 and continued down to cell C6, again without skipping a cell. It is very important that you organize your information consecutively, otherwise your graph will not turn out exactly as you want it to.

Activity

General Curriculum Outcome F of the Mathematics APEF curriculum states that students will solve problems involving the collection, display, and analysis of data. AppleWorks Spreadsheet is an excellent tool for students and teachers to use to organize and display their data. Once data is organized in a spreadsheet, it is very easy to use AppleWorks to create a pictorial representation of this information in the form of a graph. In Grade 4 math, students can use the AppleWorks Spreadsheet tool to create bar and line graphs. This lesson is an introductory lesson to spreadsheets so students need no prior experience with them.

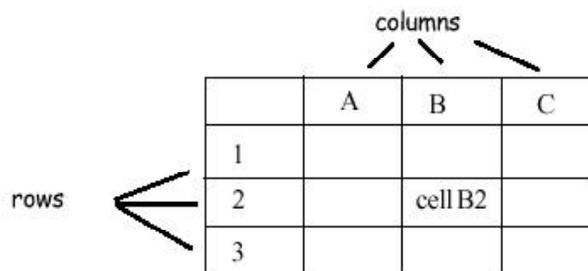
Resources

- AppleWorks spreadsheets

Instructions

When students begin to work with a spreadsheet, it is helpful if they are aware of the following information:

1. Open up AppleWorks and choose the Spreadsheet application.
2. The blocks that make up the spreadsheet are called cells. The cells are organized into rows and columns.



3. Move the mouse pointer over the spreadsheet. Click once on a cell to activate the spreadsheet tool. Notice that the mouse pointer has changed from an arrow to a thick cross. (If you click too many times you may open a window called **Numeric**. If this happens click on Cancel.)
4. Move the cross over the cell to which you wish to add data. Click once to activate that cell. You can tell that a cell is activated when it is enclosed in a box.

Lesson Plan: Chart It

Instructions (*continued*)

5. Type in the appropriate number you wish to record and tap the Enter key.
 Note: The number will not automatically appear in the cell when you first type it. You must tap the Enter key. However, as you type data, it appears at the top of the screen under the menu bar. (This area is called the data entry bar in the spreadsheet environment.)

6. To delete an entry, click on the cell to activate it and tap the Delete key. Enter more numbers as described above.

After surveying your fellow classmates in your school, you have determined the favourite subjects of the students in your school. Here is the data you collected:

Favourite Subject	# of Respondents
Mathematics	100
Language Arts	60
Physical Education	80
Music	75

Enter this information into a spreadsheet and construct a bar graph to display the information.

1. Open up AppleWorks and choose the Spreadsheet application.
2. Click on cell B2, type Favourite Subjects, then hit the Enter key. This is the title for the information we are graphing. We will begin to enter the data in cell B3. Click on cell B3, type Mathematics, then hit the Enter key
 Click on cell B4, type Language Arts, then hit the Enter key
 Click on cell B5, type Physical Education, then hit the Enter key
 Click on cell B6, type Music, then hit the Enter key

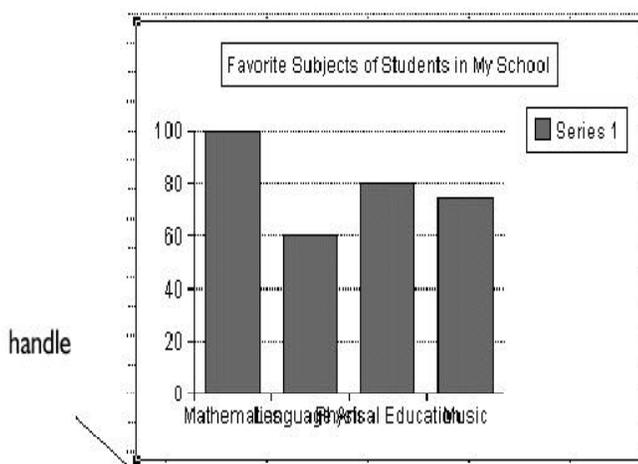
You may notice that the words you have typed in column B are hanging over the line and into column C. You can increase the width of this column so that all of the words will fit in column B and not intrude on column C. To do this highlight cells B2 to B6. To highlight, click on cell B2 and hold your left mouse button down while you drag your mouse down to cell B6. All of the cells should turn black as you are dragging except for cell B2, the cell you started with. Now that the cells are highlighted, you can click on FORMAT in the menu bar and choose COLUMN WIDTH. A little box will appear with a number in it. Erase the number and type in 125. This will increase the width of column B so that all of the information will fit.

Now that you can see column C, starting with cell C3 and continuing down to cell C6, type the number of students that corresponds to each of the subjects in your list.

Lesson Plan: Chart It

Instructions (*continued*)

- Once all your information is entered, you are ready to create the graph. In order to create a graph in AppleWorks Spreadsheet, you must first indicate what information it is you would like to graph. This is done by highlighting the information. Click on cell B2, hold your left mouse button down and drag across to cell C2 and then down to cell C6. When you highlight information in a spreadsheet, the first cell in the block that you highlight will remain white, while all the others will be black.
- To create the bar graph, Click on OPTIONS in the menu bar and then MAKE CHART. A window titled Chart Options will open and you will see that you can choose from many different kinds of graphs. The bar graph is the very first option, click on this. Now click OK and your bar graph will appear. It may look something like this:



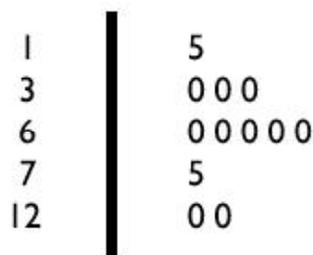
Notice that your bar graph is inside of a box, and that in each of the four corners of this box there is a handle (a small black square). This means that your graph is selected and that you can make changes to it. For example, if you click in the middle of your graph and drag your mouse, you will move your graph around without resizing it. If you click on any of the four corners where the handles are, you can make your graph larger or smaller depending on the direction that you drag the mouse. If your graph looks like the one above, the names of your subjects are squashed together. You can fix this by clicking on one of the handles and making the graph wider. This will allow for more room for the subject names that appear along the X axis. Because we highlighted the title when we created the graph, the title appears on the chart.

Lesson Plan: Chart It

Instructions (*continued*)

Present the stem-and-leaf-plot below showing the amount of television time for different students.

Number of Minutes Students Watched Television



Ask students to construct a bar graph to display the same information. Students can make two columns, one labelled # of People and the other # of Minutes, like the columns you see below:

# of People	# of Minutes
one	15
three	30
five	60

Notice that instead of using numbers to represent the number of people, the number was written out. This how the students will need to enter the data into the spreadsheet, otherwise, the spreadsheet will not properly chart the data.

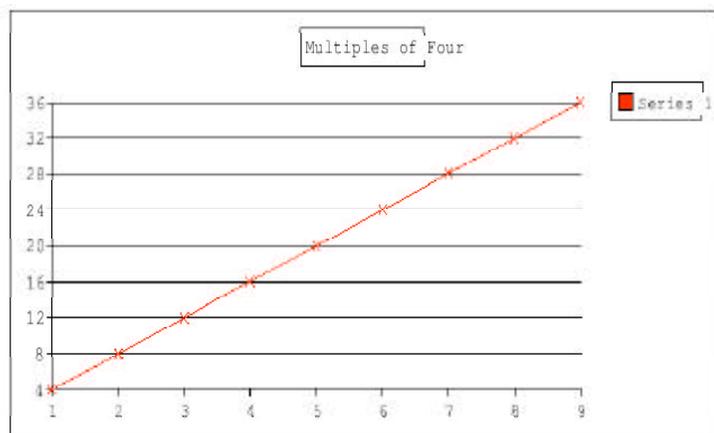
Ask the students which graph they prefer to interpret the data from and why? What is the average amount of time that this group of students watch television? Use the spreadsheet to calculate the average.

Lesson Plan: Chart It

Instructions (*continued*)

Students can interpolate data, ie. find information about a situation which was not specifically provided in the data or on the graph. For example, the graph below shows the multiples of 4. Use of the graph makes it clear that 4 groups of $2\frac{1}{2}$ must be 10, even though students have not yet studied multiplication involving fractions. A graph such as this one made into a transparency can be a great teaching tool to help students with the concept of interpolating data. Once students understand how to gather information that is not written in black and white on the graph, they can try the exercise below on their own or in pairs/groups.

	A	B
1		
2	1	4
3	2	8
4	3	12
5	4	16
6	5	20
7	6	24
8	7	28
9	8	32
10	9	36



Have students create a line graph to display the $3x$ tables (or any of the fact families that they are studying.)

NOTE: After the students enter the data into the spreadsheet, they will choose the type of graph they want to create, for this graph, they need to choose X-Y line, not just the plain line graph.

Lesson Plan: Digital Geometry

Outcomes

Technology A5.1, A5.2, B5.1, B5.2

Math A1, E7, E11

Activity

Within the graphics environment, students can explore and experiment with relationships and properties of geometric shapes. Computer technology allows students to experiment with geometric shapes in a colourful, paperless medium.

Resources

- graphics program, such as AppleWorks Drawing

Necessary Files

Grade 4: fraction.cwk and triangle.cwk

Background

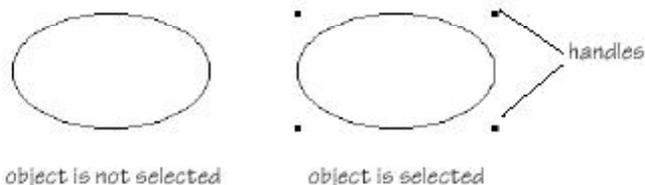
Math - AppleWorks Drawing can be used to achieve many of the outcomes in the math curriculum.

In the computer lab - Any graphics program can be used for this exercise, however AppleWorks Drawing allows the beginning user the greatest ease when editing, moving and deleting objects that they have drawn. Only brief reminders of features that students need to know to complete this exercise are mentioned here.

Introduce students to the tool bar. Clicking on the tools enables you to make shapes.



If the mouse pointer looks like an arrow you can delete or move the shape that you have drawn. Put the pointer on your object and click to select it. An object is selected if the little square handles can be seen around the object.

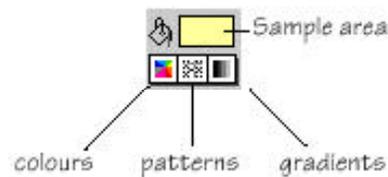


Lesson Plan: Digital Geometry

Background (*continued*)

Once the object is selected, tap the DELETE key to remove the object from the screen. Point to the object and click and hold the left mouse button. While holding the button down, move the mouse. The object will also move on the screen. If you place the tip of the mouse pointer exactly on the handles, and then click and hold, you can stretch or shrink your object as you move the mouse.

The fill tools are located below the tool panel. They allow you to add colour inside your object. The object must be selected in order to colour it. Once an object is selected click the colour palette and then the colour of your choice.



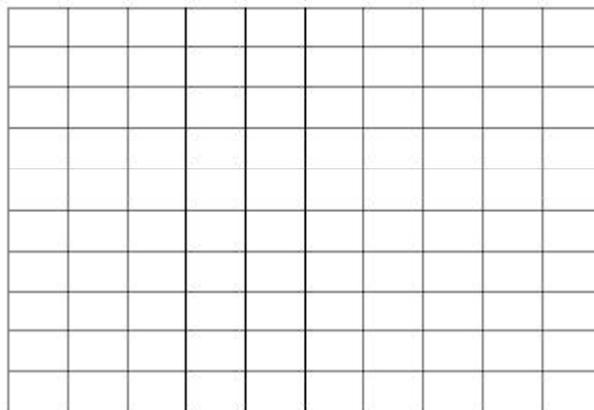
Have students explore some of the advanced features of AppleWorks Drawing such as the duplicate command, flip horizontal, flip vertical and layering (move to back, move backward, move to front, move forward).

Instructions

There are many ways that a drawing program can be used to build students' knowledge of spatial concepts. The following activities provide some first steps. After trying the activities, classroom teachers can adapt and build from these initial lessons.

Use file distribution to distribute files to students. When the student opens the file for the first time, they should save it as different name to keep a copy of the original file. Distribute file: fraction.cwk

MATHEMATICS - **The Fraction Path!**



Lesson Plan: Digital Geometry

Instructions (*continued*)

Create a path across the grid by filling each square with colour or pattern using the fill palette. Two rules:

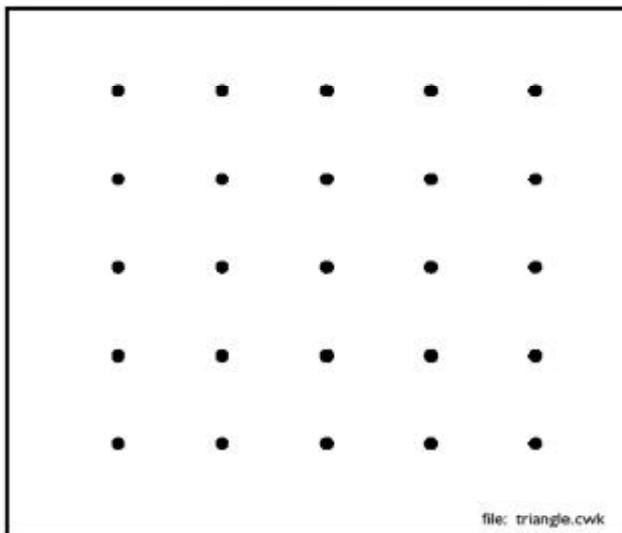
1. The path can only touch the opposite sides of the square once.
2. A shaded square can only touch one or two other shaded squares (not 3).
Count the squares - what fraction of the grid is your path? What is the decimal form? Use the text tool to record your fraction and decimal below the grid.

OR

Give students specific fractions and decimals to shade.

HINT: to get a blank grid, close the file and do not save the changes. When you open the file again, the grid will be empty.

Have each student (or pair of students) create and label a path. Then have the class rotate to see other paths and verify the fractions.

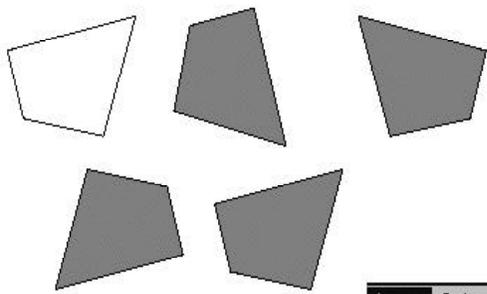


Using the geoboard and the irregular polygon tool in the toolbar of AppleWorks drawing, have students create as many isosceles triangles as they can with a base of two units along the bottom row. Have students rotate computers to see other attempts. Try different line colours for each base.

Vary the activity, i.e., how many scalene triangles with a base of four units on the bottom row?

Lesson Plan: Digital Geometry

Instructions (continued)



Use the polygon tool to draw the shape.

To select the colour to fill the shape

Clicking on rotate, makes $\frac{1}{4}$ clockwise turn. Clicking twice rotates $\frac{1}{2}$ turn

Flip horizontal makes a reflection

REMEMBER
The object has to be selected for the changes to apply.

Arrange	Options	Window	Help
Move Forward		Shift+Ctrl++	
Move To Front			
Move Backward		Shift+Ctrl+-	
Move To Dock			
Align To Grid		Ctrl+K	
Align Objects...		Shift+Ctrl+K	
Rotate		Shift+Ctrl+R	
Flip Horizontal			
Flip Vertical			
Group		Ctrl+G	
Ungroup		Shift+Ctrl+G	
Lock		Ctrl+H	
Ulock		Shift+Ctrl+H	

Steps:

1. Make a shape.
2. Duplicate the object four times and move the objects away from each other.
3. For each of the duplicates, change the colour and do one of the following a $\frac{1}{4}$ turn, a $\frac{1}{2}$ turn, and a reflection (horizontal flip).
4. Have your partner or another student identify the $\frac{1}{4}$ turn, the $\frac{1}{2}$ turn, the reflection, and the slide.

Variations: Use a different number of sides, use the regular polygon tool or

...

Lesson Plan: Butterflies

Outcomes	Activity
<p>Technology A5.1, A5.2, B5.1, B5.2, B7.1, B7.2, B7.3, B7.4, B7.7</p> <p>Language Arts 4.3, 10.3</p>	<p>1. Read about the Monarch Butterfly in “Animal Profiles”, in <i>Furs, Feathers, Scales and Skin</i>. Discuss the language of the headings with a partner. Summarize what you learned about Monarch Butterflies by sharing three facts with your partner.</p> <p>2. Research another butterfly using the Internet . Find out in particular about its habitat and enemies.</p> <p>3. Remember to reference any webpages where you found information. (Example: Title of webpage, date, URL)</p> <p>4. Create a poster in Ultimate Writing and Creativity Center to advertise issues related to the butterfly you researched. Make use of the Picture Place backgrounds and Picture Binder as you create your graphic. Then type a few sentences describing the issues facing your chosen butterfly.</p> <p style="text-align: center;">Resources</p> <ul style="list-style-type: none"> • Collections Anthology: <i>Furs, Feathers, Scales and Skin “Animal Profiles”</i> (pp. 4-11) • Internet • Ultimate Writing Creativity Center <p style="text-align: center;">Assessment</p> <p>1. Have students brainstorm what makes a poster effective. Together create a rubric that reflects their ideas.</p> <p>2. Have each student responsible for evaluating the posters of the next three students that follow them alphabetically on the classlist using this rubric.</p> <p>3. Average each person’s three results.</p> <p>4. Discuss students’ feedback to this method.</p>

Lesson Plan: Canadian Mammals

Outcomes

Technology A9.1, A9.2, A9.3,
A9.4, A9.5, B9.1, B9.4,
B9.5, E9.1

Language Arts 5.1, 9.1, 10.3

Math F1, F8

Science 205-5, 206-2, 302-1

Activity

1. Choose one Canadian animal mentioned in your Collections Anthology: Fur, Feathers, Scales and Skin. Create a web of information about that animal.
2. Now choose another Canadian animal. Use the fact-finding sheet from the **Creatures Lesson Plan** to gather information from Internet sources about your chosen creature. (Search for information that fits the following categories: Name of animal, type of animal, description, habitat, range, food, predators, lifestyle, Too good to miss facts).
3. Discuss what you learned about your two Canadian animals within small groups of three people.
4. Refer to the Journey On website for information on databases .
5. Take turns editing and searching your database. Create questions based on the information in your database. Then swap databases/questions with another group.

Resources

- Internet
- Appleworks Database
- Activity File:vanishdb.cwk

Assessment

In your science journal, describe in words and pictures how one of the animals from your group's database meets its basic needs in its habitat.

Lesson Plan: Environmental Impact

Outcomes	Activity
<p>Technology A4.1, B7.3, B7.5, B7.7</p> <p>Language Arts 3.1, 5.1, 9.1</p> <p>Science 104-6, 108-3, 108-6</p>	<p>1. In groups, brainstorm, using Inspiration 7.5, to gather items to include in a newsletter to represent what you have been learning about the impact you and your family are having on your local habitats. <i>(Some of the issues can be explored by looking at other Island school webpages on environmental issues prior to brainstorming).</i></p> <p>2. Use the step-by-step instructions for Ultimate Writing and Creativity Center to assist you.</p> <p>3. Use the terms “habitats”, “population” and “community” properly in your newsletter.</p> <p>4. Create graphics and use those available by clicking the binder icon in the Picture Place.</p> <p style="text-align: center;">Resources</p> <ul style="list-style-type: none"> • Internet • Ultimate Writing Creativity Center • Inspiration 7.5 <p style="text-align: center;">Assessment</p> <p>1. Present the group newsletters to the class. Take anecdotal notes about the presentation, including depth of understanding, clarity and group participation.</p> <p>2. Students evaluate their group effectiveness/growth as part of their learning log. Categories could include:</p> <p style="padding-left: 40px;">What we did well as a group What I learned from someone else in our group What I shared in our group What we could do differently next time...</p>

Lesson Plan: Creatures

Outcomes

Technology A9.2, B9.1, B9.2, B9.4, B9.5

Language Arts 4.3, 5.1, 10.5

Suggestions

- For more information on databases, visit the Journey On website at http://www.edu.pe.ca/journeyon/pro_d_pages/appleworks.htm
- This lesson is closely related to another lesson plan, Explore Canada.

Activity

Creatures ties into the grade four curriculum through the Fur, Feather, Skins, and Scales unit of the Collections Program. This unit explores numerous different kinds of animals, their characteristics, habitats, etc. This activity is designed to help students organize information into a database format. Students will collect data from previously viewed texts (Collections Anthology and library resources) and enter it into an existing database. From there, they will proofread and edit existing data submissions. Students will create their own file of creatures and will be responsible for updating their database as the unit progresses. At the end of the unit, students will be required to submit their creatures portfolio (5 database entries), hard copy and disk.

Resources

- Library resources
Collections: Fur, Feathers, Skins and Scales anthology
- **Necessary File**
database file: creature.cwk

Instructions

As the students read the first animal profile, the Monarch Butterfly, in the Fur, feather, Skins and Scales anthology, instruct them on note-taking and have them compile notes using categories (fields) to be used in the database - Name of Animal, Type of Animal, Description, Habitat, Range, Food, Predators, Lifestyle, Too good to miss facts and (Note-taking sheets provided in this lesson plan.) Teachers may want to edit the file provided (creature.cwk) after class discussion. A drop down list might be created for the field, Type of Animal. The first creature, the Monarch Butterfly, can be done as a class so that everyone goes through the process together. Students will see that even though everyone uses the same text, no notes are the same. The notes are similar but different. Discuss specific terminology that may be unfamiliar to the students (habitat, species, range, predators, etc..)

The next two animals they will choose from the anthology (Snowy Owl, Whale Shark, Black Bear, or Panther Chameleon) and the final two they can choose from the literature available through the library.

Using the material collected from the library, have students choose one or two other animals which they would like to include in their database. Have students share and discuss their personal findings - Is there anything new and unusual about the information collected? Did they discover any strange facts about the animals they chose? How did their impressions about the animals they researched change as they found out more information about them? Which animals are similar? How are they similar?

Lesson Plan: Creatures

Instructions (*continued*)

The research process should occur over a period of a week, each day looking at one animal and discussing their findings and opinions with peers. At the end of the week, each student should have their teacher-guided selection, two selections from the anthology and two individual selections from library resources.

When students have gathered all of their notes from research they are ready to enter the information (data) into the database. If students have already completed the Exploring Canada database, they may be familiar with a database and therefore may only need a brief review. If not, students should be introduced to the terminology and the technology:

- Distribute the file creatures.cwk
- In the computer lab have students open the file creature.cwk.
- Have students compare their information sheets with what they see on the screen. Explain database terminology (field, record). Talk about the reasons people use databases: way to organize information for quick retrieval.
- Instruct students to fill in the information on the first animal they researched, since everyone's is the same, this can be done as a class.
- Show students how to get a new blank record for the next animal (Click on Edit in the menu bar and then New Record) also show them how to save the database file (Click on File and Save). For every animal they will be entering into the database, they need to bring up a new record.
- Discuss the importance of saving files numerous times as they enter their research into the database.

Editing Data

Have students scroll up to the first record entered. Have them proofread information for errors. Instruct students to click on the field boxes to edit any incorrect entries. NOTE: If the entire record becomes highlighted, it can be deleted. To remove highlight, students should hold down the CTRL key and click on any field box.

Search

The power of a database is not realized fully in a database of only five records. However, students can gain a better understanding of searching capabilities of a larger database, such as their school library collection.

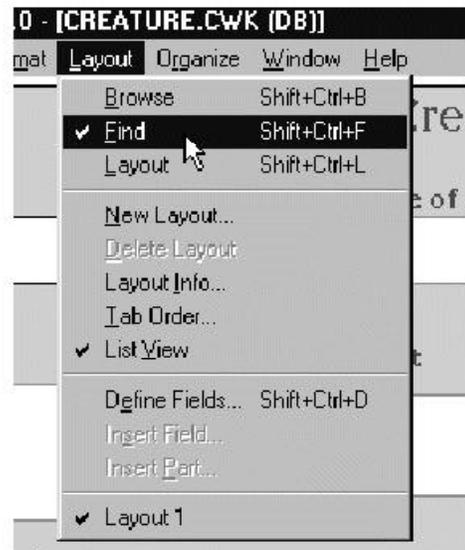
Lesson Plan: Creatures

Instructions *(continued)*

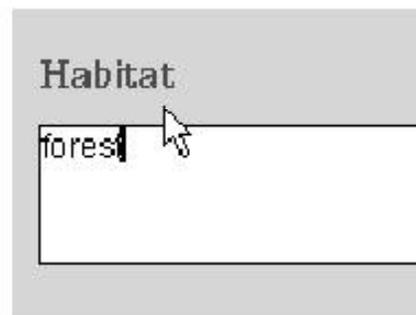
When the students have their database of five records created, they can then search the database to find specific information. For example, let's pretend that they wanted to find all the animals in their database that live in the forest. Students could search the database and draw up the records for all the animals from the forest.

To do this:

Under LAYOUT, click on FIND.



Then click in the "Habitat" field and type "forest." All the records that have "forest" in "Habitat" field will be drawn up. Spelling is critical as, "forist," would not draw up any records.



Any of the fields can be searched. This is similar to searching the author field in school library database. Students should see that the benefits of an electronic way of organizing information, a database, are greater as the size of the database increases.

Lesson Plan: Creatures

Other Activities

- a database can be done on any topic that relates to your curriculum

Instructions (*continued*)

NOTE TAKING SHEET

Name of Animal _____ Type of Animal _____

Description _____

Habitat _____

Range _____

Food _____

Predators _____

Lifestyle _____

Too good to miss facts and _____



Lesson Plan: Exploring Canada

Outcomes

Technology A9.1, A9.2, A9.3, A9.4,
A9.5, B9.1, B9.4, B9.5

Social Studies 4.3.1, 4.4.2

Activity

Exploring Canada is similar to the Dinosaurs lesson plan from the Grade 1-3 integration document. It has been included in the grade 4-6 integration using a grade 4 Language Arts theme, Collections: Building Communities, as the topic. It has been included at this level as a transition lesson plan to provide teachers in the grade 4-6 levels who have not used databases with a complete description of how databases can be used as part of a theme. Students are introduced to databases using a pre-computer activity. Students then manipulate the data in the pre-created database on Canadian communities and perform simple queries to pick out certain information. As an option, students can enter new information into the database that they have gathered from their own research.

Resources

- 5 x 7 index cards or prepared exploring Canada layout sheets
- AppleWorks database
- Overhead projector/LCD
- Question sheet

E-Mail

- Class list of e-mail addresses

Necessary File

database file: explore.cwk

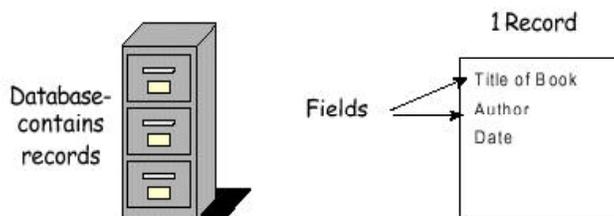
Instructions

Database applications are software tools used for recording and organizing related data in a systematic way. Databases can be used to help students develop a higher level of critical thinking as students engage in organizing and sorting information, discovering relationships and trends, predicting, questioning and problem solving.

Terminology - All of the information stored in a database is stored as a **file** such as a card catalogue. Information within a database is grouped into **records**. A card catalogue in a library is an example of a database. The information for each book represents one record. Within a record the specific data is divided into **fields**. The fields in our analogy of a card catalogue are Title of Book, Author, and Date. Every record in a database has the same fields. The data within a field, differs from record to record. For example, in one record the date may be 1998, while in another it could be 2005.

Lesson Plan: Exploring Canada

Instructions (*continued*)



Keywords - It is very important that students understand the significance of entering data consistently and accurately for later retrieval. In a research project on Canadian Communities, a general question that may be generated by the student is: Who were the first settlers?. The title of the field used in a database may be First Settlers. Possible settlers could include, First Nations people, Acadian people, English people etc. The way in which this is entered into the database needs to be agreed upon by all individuals entering the data, otherwise data will not easily be retrieved. For example, if in a database on Canadian Communities, students enter the following data in three records:

Example:

	Community	First Settlers
record 1	Arviat	1st Nations - Inuit
record 2	Edmonton	First Nations - Blackfoot and Cree
record 3	Sault Ste. Marie	Ojibway people

Later when searching for the answer to the student question: What communities were settled by First Nations people?, only one community will show up; Edmonton. In the case of Arviat, record 1, the use of 1st instead of First would result in this record not appearing in this search. Sault Ste. Marie, even though the settlers were First Nations people, would also be omitted since the settlers were entered without the First Nations preceding the name of the people. When there are a number of possibilities of descriptive terms, a common word or phrase should be chosen and used universally. Some databases will also make the distinction between words using capital letters and words without capital letters. Therefore, it is important to be consistent with the use of capitals.

Part 1. Pre-computer introduction of the database concept

1. Discuss the database concept (organized collection of information) using examples such as phone books, the library catalogue system, a hockey card collection, and recipe cards. Ask students for other suggestions of databases and why they think that databases might be useful.

Lesson Plan: Exploring Canada

Instructions *(continued)*

- Brainstorm with students about some of the things they know and some of the things that they would like to know about Canadian Communities (place names, population, and location, etc.).
- Create a non-computer database about Canadian cities using the blank Canadian cities layout sheets or index cards. If index cards are being used, the information should be arranged so that it appears in a similar format to that which appears in the computer version of the database. If teachers wish to emphasize interacting with the information, rather than gathering it, they can provide the information for students to enter.

The screenshot shows a window titled "Exploring Canada" with a form containing the following fields:

- Place Name: [text input]
- Location: [text input]
- Population: [text input]
- Founded in: [text input] with a small "year" label to its right.
- First Settlers: [text input]
- Known For: [text input]

Students enter facts on their cards while the teacher completes a sample sheet on an overhead projector. The terms record and field, and the concept of keywords are introduced at this point. To encourage collaborative learning, have each student or pair of students fill in information about Canadian Cities.

- Have the students sort the completed index cards on the floor in a variety of ways; alphabetically, smallest population to largest population, etc. Have them further analyze the data and look for trends. This may be facilitated by prompting them with questions such as: Which city is the oldest?, Which city has the smallest population? and How many cities were settled by First Nations people?.

This is a duplicate of the screenshot above, showing the "Exploring Canada" form with fields for Place Name, Location, Population, Founded in, First Settlers, and Known For.

This is a second duplicate of the screenshot above, showing the "Exploring Canada" form with fields for Place Name, Location, Population, Founded in, First Settlers, and Known For.

Lesson Plan: Exploring Canada

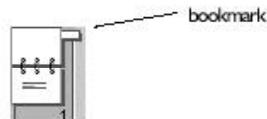
Suggestions

- If you ever have difficulty seeing your data, click on BROWSE under LAYOUT in the menu bar.
- If one or more records become highlighted (outlined in black), it means that they are selected and can be deleted. To remove the highlight, hold down the CTRL key and click on any field title.
- When students are working with a prepared database make sure that they do not use the SAVE command when exiting or the original material could be changed (Click on NO when asked to save). For extra assurances always have a backup copy of the original.

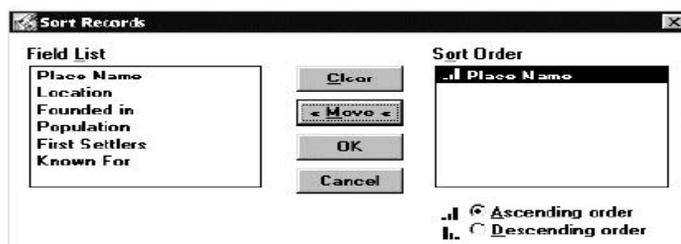
Instructions (*continued*)

Part 2: Introduction to an electronic database

1. Point out to the students that answering some of the questions by reorganizing the index cards in the previous exercise was a lot of work. Other databases such as telephone books do not even permit us the flexibility of reorganizing information. If we have a persons address but not their full name for example, it would take us a long time to find their phone number. Electronic databases are much more flexible and let us reorganize and search for information in a much more efficient manner.
2. Open the file explore.cwk and compare the prepared database with the student prepared cards. Review the database concept and terminology (database, record and field). Compare the facts on the computer screen in column format with those entered on the note-taking sheets. Have students switch to the card layout to see how this view is like the printed sheet.
3. Introduce students to the notebook. Clicking on the top page moves you back one record, while clicking on the bottom page advances you one record. The number of the active record (i.e., the one that you can edit or delete) is indicated in the bottom right hand corner. When you click and hold on the bookmark you can move from record to record by sliding the bookmark up or down.



4. Briefly introduce the concept of layouts. The way information in the database appears on the screen is referred to as the layout. Click on LAYOUT in the menu bar and then Canadian Columns. You will notice that the same information is organized differently. The field headings are now arranged across the top of the page and the information within the fields (data) is located in columns going down the page (see last page of this lesson plan).
5. Introduce the SORT function. It is sometimes useful to reorganize records in the database alphabetically. Click on ORGANIZE in the menu bar and the Sort Records window appears.



Lesson Plan: Exploring Canada

Instructions *(continued)*

Click on CLEAR if any fields names are located in the Sort Order box on the right hand side. Click on the field title Place Name in the field list and then click on the MOVE button (double-clicking on the field name will achieve the same thing). Notice that the field title Place Name appears in the Sort Order box. The little symbol in front of it indicates ascending order (meaning we wish to alphabetize the names of the cities from A-Z). Click OK. The records are rearranged alphabetically. Try sorting by population.

- Have students return to the Canadian Cards layout by clicking on LAYOUT in the menu bar and choosing Canadian Cards. Introduce the FIND feature. It is sometimes useful to use the find feature instead of having to go through all the records to pick out a certain piece of information. If for instance the students were looking for the community in their database that is known for being home to Canadian Astronaut, Roberta Bondar, they could sort their community by the Known For field and search through all of the records until they find Roberta Bondar in this field. However, if they use the FIND feature this task is much quicker.

The FIND feature will search the database for an exact match and report all the records in which the keyword was found. For example, typing the words Roberta Bondar into the Known For field, will find all the records pertaining to Roberta Bondar. Under the LAYOUT menu in the menu bar, you will find the word FIND. A blank record will appear and you can type what it is you are looking for. If we continue with the example noted above, then we would type Roberta Bondar into the Known For field. On the left hand side of the screen beneath the notebook appears an icon:



Click on ALL (or tap the ENTER key) to start the FIND command. All of the information pertaining to the specified keyword(s), Roberta Bondar appears. Beneath the notebook you will now see the words Records X(Y) sorted. This indicates that X records pertaining to the keyword were found out of the total Y records in the database. For example, if 9 records were found to have the words Roberta Bondar in the Known For field out of the possible 12 records that were entered into the database you would see:

The answer to your question should be in the records that appear as a result of your find.

Records:
9 (12)
Sorted

Lesson Plan: Exploring Canada

Other Activities

- Have students research and enter other Canadian Communities into the database.
- Have students prepare questions for other students. They should also provide the answers to their questions.

Instructions (*continued*)

7. Click on ORGANIZE in the menu bar and then SHOW ALL RECORDS to display all of the records in the database once again. Now you can go on and complete another FIND if you wish. Once students are familiar with how to complete sorts and finds, have them complete a question sheet like the sample sheet provided below.

Exploring
Canada



Name: _____

1. Put in alphabetical order by Place Name

How many Canadian Communities are in this database? _____

The first community listed is _____

The seventh community is _____

The last community in the database is _____

2. Sort the database alphabetically by the Location field

Which communities are situated in the Northwest Territory?

3. Sort by Population

Which community has the largest population?

Community _____ pop. _____

Which community has the third smallest population?

Community _____ pop. _____

Which community has a population size closest to the population of Prince Edward Island?

Community _____ pop. _____

5. Sort by Founded In

Which community is the oldest? _____

Which community is the newest? _____

6. Find the communities that are known for being Hudson's Bay Co. posts.

7. Find the community which is known as the home of the biggest Easter Egg in the world.

8. Find the community that is home to astronaut Roberta Bondar.



Lesson Plan: Did You Hear That?

Outcomes

Technology A3.1, A3.2, A3.3,
B3.1, B3.2, B3.3, C3.1, E3.1

Science 104-6, 106-1, 300-3

Suggestions

- If your school has a multimedia projector, this activity can be done as a class activity. Set the projector up in your class, call up the Web sites and search for the information as a class.
- Students could also work in small groups or pairs.

Activity

As part of the Grade 4 Physical Science theme on Sound, students learn about the anatomy of the ear and how the human ear is designed to detect vibrations. Students will investigate and learn about the processes and structures of the ear by exploring and gathering information from pre-selected colourful and descriptive World Wide Web sites.

Resources

- Internet access
- Did You Hear That? activity sheet
- Web site evaluation sheet

Instructions

1. Ask the students to close their eyes, be very quiet and listen closely to the sounds around them.
 2. Invite students to come to the front of the class to draw or otherwise explain how they think humans hear. If they are going to use a diagram to help their explanation, they can draw their diagram on the board. Ask students, What are the processes involved in hearing? What parts of the ear and brain are involved in hearing? Students do not have to know the exact processes and structures involved in hearing. At this point they are sharing what they do know. This is their opportunity to guess and discuss together, as they will be exploring how we hear thoroughly throughout this lesson.
 3. Distribute the activity sheets and go over the questions with the students to help focus their Internet explorations. Direct students to the following Web site to find the information they need to complete the activity sheets. NOTE: The Web site listed above was current as of June 2005. Because Web sites have a tendency to move and/or disappear, it is a good idea to check to see if they are still active and preview them for content before giving the addresses to the students. Students should bookmark the sites.
<http://yucky.kids.discovery.com/noflash/body/pg000144.html> (June 2005)
- Have students evaluate one of the Web sites they use (see the evaluation sheet available at the end of this lesson). They should also cite the Internet sites they use in the following format:
1. Author (if known)
 2. Title of article (in quotation marks)
 3. Title of complete work (underlined)
 4. <full http address> (enclosed in angle brackets)
 5. (date of your visit in parentheses)

Lesson Plan: Did You Hear That?

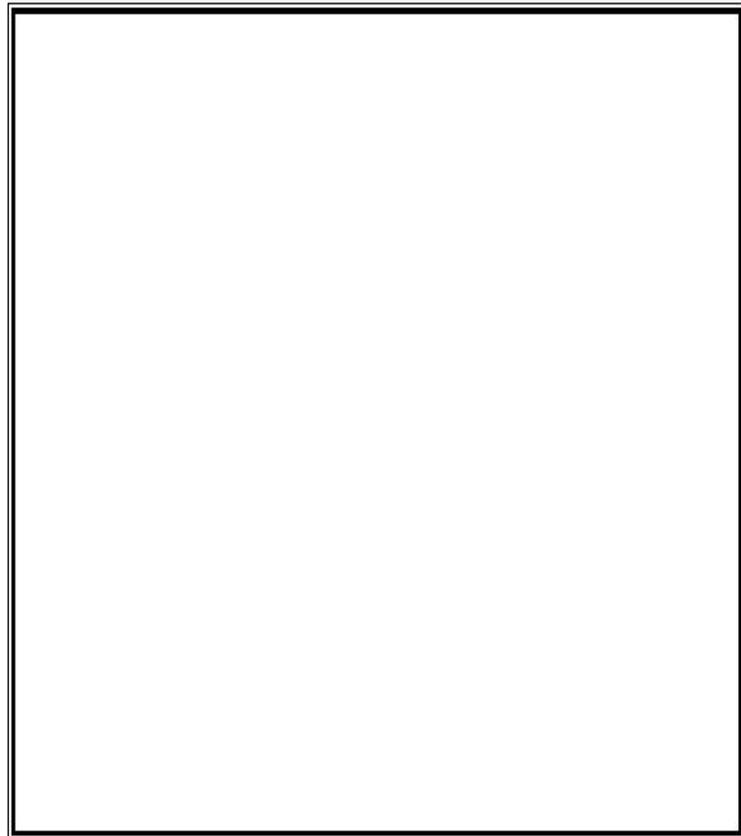
Instructions (*continued*)



Did You Hear That?

Name: _____

Draw a Sketch of the human ear in the space below. Be sure to include the structure of the inner, middle, and outer ear.



Lesson Plan: Did You Hear That?

Instructions *(continued)*

Use the following site to explore what parts make-up your ear and how you hear.

<http://yucky.kids.discovery.com/noflash/body/pg000144.html>

1. In your own words, briefly describe the processes involved in human hearing.

2. Identify the following structures as belonging to the outer ear, middle ear, or inner ear.

anvil _____	cilia _____
auricle _____	eardrum _____
hammer _____	stirrup _____
cochlea _____	

3. Besides the ear, what other parts of the human body are involved in processing sound?

4. What are some ways that hearing can be damaged?

5. What are some instruments that are used to help people who have damaged hearing hear?

Lesson Plan: Did You Hear That?

Instructions (*continued*)

TITLE: _____

TODAY'S DATE: _____

QUESTIONS TO THINK ABOUT.

A. Does the page title tell what the page is about? _____

B. GRAPHICS:

How many graphics are on the page? _____

Are they big? _____

Are they slow to download? _____

C. What is the author's name or the name of the organization that created this Web page and e-mail address?

D. What date was the page created? _____

E. What is the date that the page was last updated? _____

F. Is the page very large? _____

EVALUATING THE INFORMATION

Does it help to answer my questions? _____

Would another source have answered my questions better?

How do I know that this information is correct?

Does the information differ from that found in other sources (books, magazines, Internet sites, etc.?)

Lesson Plan: Noise Pollution

Outcomes

Technology A6.1, A6.4, B6.1,
B6.4

Language Arts 5.1, 10.3

Math F1, F3, F5, F8

Science 104-1, 108-1, 108-3, 206-
9, 207-6

Activity

1. Brainstorm noise pollution . What is it? What are some sources of noise pollution in various environments of students - home, school, community?
2. Explore various means of recording noise pollution - sound meter, microphone connected to computer, tape recorder, distance from sound before can no longer hear it, etc..
3. Choose an environment. Collect noise level data from at least five sources of noise pollution, using a tally sheet to record the results.
4. Create a graph using the spreadsheet portion of AppleWorks.
5. Create three questions based on the information provided in your graph.
6. Share your graph and questions with a partner.
7. Answer your partners' graph questions.
8. Revise/edit your original questions based on feedback from your partner.
9. Post the graphs on a bulletin board display. Post the questions and see if people can guess which graph the questions are based on.
10. Make three recommendations for decreasing noise pollution and protecting your hearing based on what you learned from the environment you explored.
11. Share each students' recommendations in a newsletter to parents.

Resources

- Internet
- Appleworks Spreadsheet

Assessment

Choose three sources of noise pollution. In your learning log, make a chart that lists the source of noise pollution, positive and negative aspects of the source, potential for hearing loss and safety procedures.

Lesson Plan: Pocket Change

Outcomes	Activity
<p>Technology A6.1, A6.2, A6.4, B6.1, B6.3, B6.4, B6.6</p> <p>Math B17, F1, F2, F3, F8</p>	<p>One of the important features of the AppleWorks Spreadsheet utility is that it allows individuals to perform numerous calculations, organize, and display data in tabular and/or graphical form. In this activity, students will learn how to create a spreadsheet and perform calculations. Once the student has created the spreadsheet, he/she will be given a math problem to solve using their spreadsheet. In this activity, students are told the total number of coins and the amount of money those coins equal. The task is to find combinations of coins which equal the given amount. Using a spreadsheet simplifies this task.</p>
Suggestions	Resources
<ul style="list-style-type: none"> For more information on AppleWorks Spreadsheets, see the Journey On website at : http://www.edu.pe.ca/journeyon/tech_support_pages/help_manual/ssheet/default.html 	<ul style="list-style-type: none"> The Drawing application in AppleWorks. Pocket Change problems Necessary File: pocket.cwk
	Instructions
	<p>The following exercise takes students through the process of creating their own spreadsheet to help them calculate different sums of pocket change. Students can create the spreadsheet themselves, or they can simply be given the file pocket.cwk and then use the spreadsheet to figure out the problems listed below.</p> <p>Students are given two pieces of information. They are told the number of coins they have in their pocket and how much money these coins add up to. Their task is to figure out what coins make up the sum of money they have in their pocket. If for example, they were told they have \$7.87 as the sum of money, and this 7.87 is made up of 11 coins, then they need to figure out what coins they have. This is where the spreadsheet comes in. Students will use the spreadsheet to help them figure out what coins they have. The spreadsheet allows them to guess and check their answer. As they enter possible amounts of different coins into the spreadsheet, the spreadsheet will total the data. When the data they enter into the spreadsheet adds up to the desired \$7.87, they have solved the problem.</p>

Lesson Plan: Pocket Change

Instructions (*continued*)

Pocket Change Problems To Solve Using Spreadsheets:

NOTE: In each of the following problems it is possible to have more than one correct solution. For each problem try to figure out all of the possible answers.

1. You have 5 coins which add up to \$3.55. Figure out how many of each coin you have.
2. You have 7 coins which add up to \$9.01. Figure out how many of each coin you have.
3. You have 6 coins which add up to \$5.27. Figure out how many of each coin you have.
4. You have 14 coins which add up to \$15.96. Figure out how many of each coin you have.
5. You have 14 coins which add up to \$11.07. Figure out how many of each coin you have.
6. You have 25 coins which add up to \$35.72. Figure out how many of each coin you have.

Extension: Have each student in the class make up a problem to pass along to a classmate.

Setting Up A Spreadsheet For Pocket Change

1. Open a new file in the Spreadsheet application of AppleWorks. Click on **FORMAT** in the menu bar and choose **DOCUMENT**. In the box that appears change the size of your spreadsheet to have 4 columns across and 12 rows down. Enter the following information in the corresponding cells:

A1 - coin, A2 - pennies, A3 - nickels, A4 - dimes, A5 - quarters, A6 - loonies, A7 - toonies, A8 - Total, B1 - Value, C1 - Number, D1 - Worth

2. Left click the mouse in cell B1 and then drag to select all of the cells in columns B, C, and D. Now, from the **FORMAT** menu, choose **COLUMN WIDTH**, change it to 50, and click **OK**.
3. Because students are going to be working with money in this spreadsheet it is necessary to display these values using dollar signs and decimal points. Thus, the cells must be formatted for currency. Select cells B2 to B7. From the **FORMAT** menu choose **NUMBER**, click on the circle beside **Currency** and click **OK**. Do the same for cells D2 to D8.
4. In column B, the Value column, enter the value for the six coins listed in column A.

Lesson Plan: Pocket Change

Instructions (*continued*)

Entering Formulas in your Spreadsheet:

1. In cell D2, (Worth column) we want the spreadsheet to do some calculating for us. This cell is in the Pennies row, therefore we want this cell to calculate the number of pennies entered in the Number column by the value of the penny. This calculation will give us the total amount we have in pennies. We must enter a formula to do this. The formula will take the number in the Number column and multiply it by the value of a penny which is entered in the Value column. The formula is $=B2*C2$. Notice as you enter the formula it can be seen in the entry bar at the top of your screen. The = sign means this is a formula and the * sign means multiply. Because there is no number in the Number column a \$0.00 will appear in cell D2.
2. We want the same formula to appear in cells D3 - D7. The only difference will be the number of the row because the Nickels are in row 3, Dimes row 4, Quarters row 5, Loonies row 6, and Toonies row 7. We can copy the formula from one cell to another and the spreadsheet will change the number of the row for us. To do this click in cell D2 and drag down to D7 so that these cells are highlighted. Choose the CALCULATE menu and then choose FILL DOWN. \$0.00 will appear in each of these cells because there are no numbers in the Number column.
3. It is possible to create a formula to total columns C and D in this spreadsheet. In cell C8 type $=\text{Sum}(C2..C7)$. This formula tells the computer to add the values in cells C2, C3, C4, C5, C6, and C7, and display the answer in cell C8.
4. Copy the formula from cell C8 to cell D8 by clicking on C8 and dragging your mouse to highlight cell D8. Next choose FILL RIGHT from the CALCULATE menu. Notice that there will be no value for the totals of columns C and D because there are no values entered in column C. Your spreadsheet is now complete and ready to use to help you solve the problems.

	A	B	C	D
1	Coin	value	Number	Worth
2	Pennies	\$0.01		\$0.00
3	Nickels	\$0.05		\$0.00
4	dimes	\$0.10		\$0.00
5	quarters	\$0.25		\$0.00
6	loonies	\$1.00		\$0.00
7	toonies	\$2.00		\$0.00
8	total	\$3.41	0	\$0.00
9				
10				
11				
12				

Lesson Plan: Math Facts

Outcomes

Technology A6.1, A6.2, B6.1,
B6.3, B6.4, B6.6

Math B9

Suggestions

- Students only need to use column C of the spreadsheet. This is where they enter their answers.
- For more information on AppleWorks Spreadsheets, see the Journey On website at: http://www.edu.pe.ca/journeyon/tech_support_pages/help_manual/ssheet/default.html

Activity

As students are learning multiplication and division, this learning activity will reinforce their math facts through the instant positive or negative reply that the spreadsheet provides. Thanks to Gail Finness from Greenfield Elementary for suggesting this idea for a lesson plan.

Resources

- AppleWorks files: multipl4.cwk and divide4.cwk

Instructions

The files that accompany this lesson plan offer students a different way to practice and test their math facts. These spreadsheets can be used for practice or for review, depending on the skill level of the students.

The grade 4 files multipl4.cwk and divide4.cwk are a mix of different fact families. They should be done toward the end of grade four after students have worked with all the fact families.

The math facts that students are to solve are listed in column A as is seen in the diagram below. The answers to these facts are in column B, which is hidden. Students enter their answers in column C and immediate feedback is given in column D. If the student gets the answer correct, column C will change to Excellent, Super Job or Wow! If the students does not get the answer correct, the column will stay at Try Again, Don't Give Up or Keep Trying. Instructions on how to create this kind of spreadsheet file follow on the next two pages.

	A	C	D
1	6*6=		TRY AGAIN
2	2*5		KEEP TRYING
3	3*8=		DON'T GIVE UP
4	1*7=		DON'T GIVE UP
5	4*9=		KEEP TRYING
6	5*2=		TRY AGAIN
7	5*8=		KEEP TRYING
8	2*8=		DON'T GIVE UP
9	3*7=		KEEP TRYING

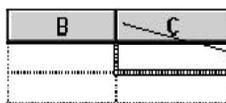
Lesson Plan: Math Facts

Instructions (*continued*)

The following instructions explain how to create the spreadsheet file for math facts practice.

1. Open AppleWorks and from the Welcome to AppleWorks window select Create a New Document. Click Continue.
2. From the New Document Window, select Spreadsheet and click OK. The spreadsheet program will open. Click in cell A1 so it becomes the active cell. Type the word Solve and then hit the enter key. In cells A2, A3, A4, etc., type the mathematical equations that you would like your students to solve.
3. Starting in cell B2, type the answer to the equation that precedes this cell in column A. Leave column C blank. This is where the students will enter their answers and column D will tell them if they got the answer correct.
4. After having typed all of the problems and their corresponding answers in columns A and B, click on cell A2, hold you left mouse button down and drag your mouse down to highlight all the rows containing problems and across to highlight the four columns, A, B, C and D.
5. In the Format menu select Size. In the size menu choose 34 or 36 point. This will make the font large. It may also make your text disappear. This is because what is written in the cells is larger than the size of the cell. We will have to increase the size of your cells so that you can read what is in them.
6. Highlight all of the cells that you want to increase in size (see step 4). Click on Format in the menu bar and then choose Column Width, enter a number that is larger than the number that you see in the Column Width window (try 100). Your columns should have increased in width. Now let's increase the height of the rows. Make sure your cells are still highlighted, click on Format again, but this time choose Row Height and again enter a number larger than the number you currently see in the row height window (try 40). You may have to try a couple of numbers before you get your cells the right size.

You can also increase the size of your rows and columns by placing your cursor in the gray area that is known as the row and column indicators. If you place your cursor between two columns or rows in this gray area, your cursor will turn into a double headed arrow.



Place cursor here to get the double headed arrow.

Lesson Plan: Math Facts

Other Activities

- You can make a spreadsheet file such as the files that accompany this lesson plan for any math facts your students may be learning and practising or, as a challenge for the students, have them create a spreadsheet for their classmates to solve.

Instructions (*continued*)

You can click and drag to increase or decrease the size of the column or row. We want to use this technique to hide column B. Currently column B has the answers to the math facts in column A, we do not want the student to see this so we will hide column B. Click in the gray area between columns B and C so that the mouse pointer turns into a double headed arrow. Click and drag to the left until column B disappears.

7. Click on cell D2. Here we will enter the formula that will tell the students if they have entered the correct answer.

Formula:

In cell D2 enter: =IF(C2=B2, "Excellent", "Try Again") The formula reads: if the number that the student enters in cell C2 equals the answer that the teacher entered in cell B2, then the word Excellent will appear in cell D2, if the number in C2 does not equal what is in B2, then cell D2 will read Try Again. In cell D3 enter: =IF(C3=B3, "Wow", "Keep Trying"). There are no spaces in this formula, except between Keep and Trying and Try and Again in the other formula..

In cell D4 enter: =IF(C4=B4, "Super Job", "Don't Give Up") etc, until all of your cells have the correct formula. To save the time and effort of having to retype that formula for every cell, you can copy and paste in the formula. To do this, click on cell D1 and from the Edit menu choose Copy. Now click on the next empty cell that you want to paste the formula into and click on Edit and then Paste. Continue copying and pasting the various formulas into the cells until all of the cells in column D have been filled.

8. If you want to dress up your spreadsheet, you can change the colour of the font in your cells by highlighting the cells you want to change colour, click on Format in the menubar and choose Text Colour and from the palette of colours that appears, pick the colour you would like for your text.

Lesson Plan: What's In The Party Bag?

Outcomes

Technology A6.1, A6.2, B6.1, B6.3, B6.4, B6.6

Math B13

Suggestions

- For more information on AppleWorks Spreadsheets, see [Journey On website at:
http://www.edu.pe.ca/journeyon/tech_support_pages/help_manual/ssheet/default.html](http://www.edu.pe.ca/journeyon/tech_support_pages/help_manual/ssheet/default.html)

Activity

Treat bags are an important part of almost every childhood birthday party. In most cases, the host or hostess takes great care in picking out the treats and trinkets that will be included in the party bag. In this activity, students are given a budget of \$32.50 and will use this money to buy treats for their birthday party bags. Each student must first decide how many children will be invited to his/her party, since this will affect how much money will be spent on each party bag. Using a spreadsheet and their estimation skills, each student will determine which objects (from a selected list) he/she will buy for the birthday party bags.

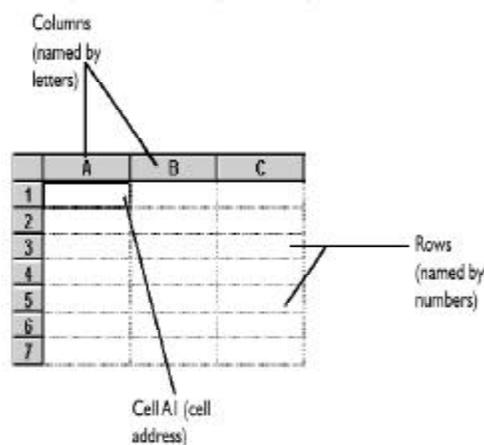
Resources

- AppleWorks Spreadsheet
- File: partybag.cwk

Instructions

1. Students will need to be reminded to use spreadsheet terminology. To conduct a mini-lesson on spreadsheet terminology, you can use a multimedia or LCD projector. If one is not available, you can print an empty spreadsheet chart similar to the chart presented below and make a transparency for use on an overhead projector.

All information stored in a spreadsheet is stored in a **file**. Spreadsheets are formatted as tables that consist of **rows** and **columns**. Each column is identified by one or more letters, while each row is identified by a number. Each box that is formed when a column and row intersect is called a **cell**. Each cell has a unique **cell address** that is made up of the column letter(s) followed by the row number.



Lesson Plan: What's In The Party Bag?

Instructions (*continued*)

2. Students open the file partybag.cwk and read the instructions provided.
3. The first step is to decide how many friends will be invited to the birthday party and enter this into the appropriate box. To enter the number of kids invited to the party, click on the box with the question mark in it. Use the backspace or delete key to erase the question mark, and type the appropriate number.
4. The second step is to find how much money can be spent on each birthday party bag. Students use their division skills and scrap paper to figure out the amount that can be spent on each party bag. This amount is entered into the appropriate box again by clicking on the box with the dollar sign in it and typing the amount.
5. Once students have figured the amount of money that can be spent on each party bag, this amount must be entered into the spreadsheet. To do this, students click on cell E3, type the amount, and press the enter key.
6. Next, students read through the list of potential party bag items and their respective prices. They will choose which treats they will buy to fill a single treat bag. Students must spend exactly the amount that they determined on each treat bag. They may buy more than one of any item, but they can't exceed the amount they have budgeted for a single party bag.
7. To buy treats for Party Bag #1, students will start in Column C and click the cell opposite each item they would like to buy. Then, they will enter the number of treats they want to buy. The spreadsheet will automatically calculate the cost of the treats purchased and deduct it from the total amount they can spend on one party bag.
8. If students overspend, they can go back and reduce the number of items purchased by clicking on the appropriate cell in Column C and either changing or deleting the amount.
9. Once they have completed Party Bag #1, students will move on to Party Bag #2 and buy a different combination of treats for this party bag, again never overspending the amount they have budgeted for each party bag.
10. Students should be encouraged to save their work often.
11. When they have finished, students can print their work and compare the party bags they have created with each other.

Lesson Plan: What Are You Reading?

Outcomes

Technology A9.1, A9.3, A9.4,
A9.5, B9.1, B9.3, B9.4

Language Arts 5.1, 10.3

Suggestions

- The following activity gives students the opportunity to use a database to keep track of their reading. A file is provided which can be distributed to students for an electronic reading log. For more information on databases, see the Journey On website at :http://www.edu.pe.ca/journeyon/tech_support_pages/help_manual/database/default.html
- If you decide to use the file provided, have the students open the file and save as a different name so they have a copy of the original file.
- Remember if you want to build a database for the whole class, each student has to start with the same file and can make changes to the layout or field structure.
- Adapt the database files for your class.

Activity

Each student throughout the school year will read a number of books be it for silent reading, as part of a theme, for general interest, or some other aspect of school work. Many teachers have their students keep a log in a scribbler of the books they read. This lesson allows students to use a computer database as their reading log. The template database files that are needed to begin are available.

Resources

- AppleWorks Database
- File: 4bkrec.cwk

Instructions

The database template file is shown below. The field for “What is the book about?” students select from a drop down list: adventure, animals, biography, fact book, relationships, school stories, sports, and other.

The image shows a screenshot of a database form. The form has several input fields: 'Author', 'Title', 'Date started', 'Date finished', 'Number of pages', and 'Copyright'. There is a 'Rating' field with a drop-down arrow. Below these is a 'What is the book about?' field with a drop-down list that is open, showing options: 'Adventure', 'Animals', 'Biography', 'Fact book', and 'Relationships'. There is also a 'My response' text area. A small image of a horse is visible on the right side of the form. Two callouts with dashed lines point to the 'Fields' label and the 'Drop down list' label.

The Rating field for all grades is a drop down list: fantastic, great, very good, O.K., so so, poor, and never again.

Teachers can modify the database files as fields can be added or dropped. Drop down lists can be modified. Teachers can discuss with their classes the fields to include in the database. Students can be challenged to create an attractive layout for their reading record. A word of caution, if teachers want to create a reading log database for the whole class, all students have to start with the same file. Records can be added but the field structure and layout has to remain the same.

Lesson Plan: What Are You Reading?

Instructions (*continued*)

Entering Information into the Database

It is suggested that the students can practice entering the information about their books on paper before going to the computer. The printout of the database is a good form for students to use to record the information on paper. If students record their first books on paper, the transition to the computer will be easier. What students see on the computer will be exactly like the pages they filled out on paper. The paper version should become unnecessary and students will enter information on books read directly into the electronic database.

How you choose to structure how students put information into their database depends on your school situation. If you have a networked computer in your class, students can enter the information as they finish reading a book. With a computer lab, teachers can have students record the information on paper to be entered when the class has time in the lab.

What can you do with the database?

A database of a student's reading allows the records to be sorted alphabetically for text fields, numerically for number fields, or by date for date fields. Each field can be searched for specific information such as: all the books by one author, all the books that have a fantastic rating, all the books by a category (i.e., school stories), or even a key word search of the My response field.

Imagine the questions and analysis possible from a database of the books read by your class for a month, a term or over a year.

Lesson Plan: Can You Find It, Please?

Outcomes

Technology A3.1, A3.2, A3.3, B3.1, B3.3, C3.1, E3.1

Language Arts 4.1, 10.3

Suggestions

- Teachers may want to use the following two page activity with their students to provide a guided opportunity for searches by author, title, and subject. This activity (individually or in pairs) should be completed within a forty minute period.

- Working in pairs allows for students helping students.

- Try to encourage independent use by not giving answers. The task sheet can have blanks spaces.

Other Activities

- Teachers may want to follow up an interest from the class to gather additional resources from the Public Library.

- Almost all school libraries have an electronic database for the school collection and although the computer software is not the same, searching features are similar. Classes may want to try a search on the school's system then try the Public Library system.

Activity

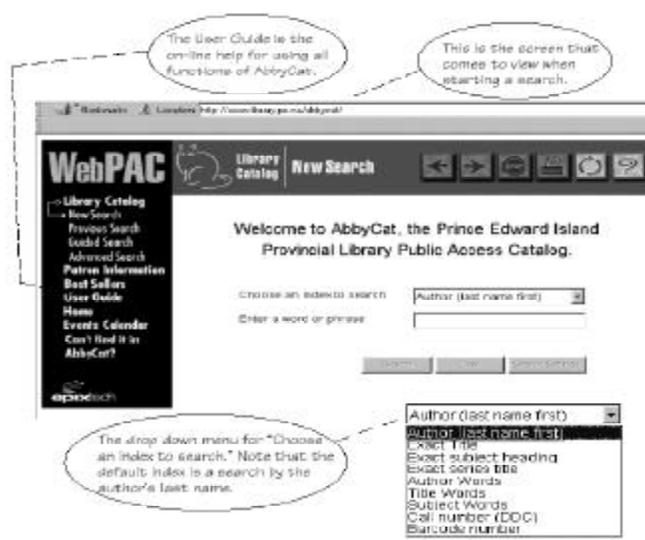
With Internet access, anyone can search the resources available in our Provincial Library system. Being able to access resources on-line from our public library database, is a useful skill for our students (and adults). Teachers can adapt the searching exercises to the needs of their classroom and this lesson is appropriate for grades four through to adults.

Resources

Copies of activity sheet for students (a master sheet is provided)

Instructions

Visit the **ABBYCAT WEB SITE** <http://www.library.pe.ca/abbycat>



Lesson Plan: Can You Find It, Please?

Instructions (continued)



Searching by title:

Change the Index to search in drop down menu to “Title Words.”

When you can't remember the author's name, but can remember a few words of the title, an electronic database can find the book. For example, **Charlie and the Chocolate Factory** can be found by entering a word from the title. In July, 2000 here are the results when searching for:

“Charlie” found 149 titles, “chocolate” found 90 titles, and “factory” found 48 titles

This strategy helps as the book, **Charlie and the Chocolate Factory**, is in the list, but the list is too long. The book is hidden among too many titles.

How many books are listed when using two words from the title in the search?

Try entering: factory and Charlie _____ Try entering: Charlie and chocolate _____

Why might you use as many words as you can remember from the title to find a book? _____

(When you use more than one word to limit you search, this is an example of Boolean logic. All good electronic databases such as libraries and CD-ROM encyclopedias have this capability.)

Does it matter if the search words are different order? _____ (Try it.)

Search for chocolate. Why don't you find any titles?

Lesson Plan: Can You Find It, Please?

Instructions (*continued*)

Subject searching

Change the Index to search drop down menu to “Subject Words.”

Let’s pretend that you want to find a book that has poems about sports. How many headings do you see when you search for:

sports _____ poetry _____

Now try a search using both words, sports and poetry

How many headings? _____ How many titles? _____

Independent searching

Try a search of your own to find a title that would interest you and record the following information.

Author’s last name first name Copyright Date

Title Call number

What search index did you use? _____

What search terms did you use? _____

Lesson Plan: Fishing For Facts

Outcomes

Technology A3.1, A3.2, A3.3, B3.1, B3.3, C3.1, E3.1

Language Arts 4.1, 10.3

Suggestions

- Students work very well on learning stations in pairs. The pair can help each other and switch between controlling the computer and recording responses on the task sheet. Insist on students bookmarking the sites. This allows them to easily return to the site if they don't finish or for further research. (Also keep in mind that the websites given on the activity files may or may not be active).

Activity

Students are directed to specific Web sites to complete a task sheet or learning station. These structured activities can be designed for almost any topic. Students will come to see the Internet as an additional source of information. The fact finding nature of the activities can introduce children to a variety of topics that could become the focus for more in-depth research.

Resources

- Internet
- Files:
 - Bridges 4bridges.cwk
 - Canada 4Canada.cwk
 - Pioneers 4pioner.cwk

Instructions

The learning stations provided on disk are examples of using the Internet to support a topic studied in the classroom. The stations provide a good first step in using the Internet. The structure provided makes it clear to the students what is expected and allows teachers to evaluate task sheets. Learning stations lead to students becoming more independent in gathering information on-line. Additional learning stations can be created for library resources, both in conventional print form or in CD-ROM databases.



Lesson Plan: Fishing For Facts

Other Activities

- Limitless. Learning stations can be set up for almost any topic. Relax the structure and allow students to visit the sites and record the three things they found the most interesting.
- Have the students evaluate the site based on criteria discussed in class. (Again, refer to page 45 in Journey On Grades 4-6, the green book.)
- Have the students record and cite the Web page in proper form.

Instructions (*continued*)

1. Students carefully type the address in the location bar. If it is not exactly correct, it will not work. This is not an easy task.
2. Once the site is reached, have the students bookmark the site. This means that they can come back to the site without having to retype the address.
To bookmark a site:
 - a) Make sure that you are at the correct site.
 - b) Right click on the mouse.
 - c) Click on Add to Favorites
 - d) The other option would be to click on the "Favorites" button on the browser menu bar.

Students should be taught to critically evaluate Web sites. Students at an early age should credit the sources of their information and Internet sources are no different.

World Wide Web:

1. Author (if known)
2. "Title of article." (in quotation marks)
3. Title of complete work. (underlined)
4. <full http address> (enclosed in angle brackets)
5. (date of your visit in parentheses)

Lesson Plan: Natural Disasters

Outcomes

Technology A8.1, A8.2, A8.5,
B8.1

Language Arts 1.2, 4.3, 5.1, 10.3

Science 301-7

Activity

1. Have students brainstorm natural disasters, such as flash flood, mudslide, volcanic eruption, earthquake, avalanche, tornado, forest fire, meteor collision, etc. With a partner, chose one natural disaster to research further. (*You may wish to use Inspiration 7.5*)
2. With a partner, brainstorm questions about the selected natural disaster.
3. Students should provide their theories about the answers to the questions as a next step, prior to beginning their research.
3. Use a variety of resources (human, text, internet) to explore background information on the event, as well as how the natural disaster affects the landscape, and what preventative measures could be taken to lessen the impact.
4. Create a slideshow using AppleWorks to share the key points of the findings. Include text as well as a combination of clipart, scanned images, student created graphics and digital photos in the slideshow.
5. Have students document the sources utilized in the slideshow.

Resources

- Internet
- Inspiration 7.5
- Appleworks Slideshow

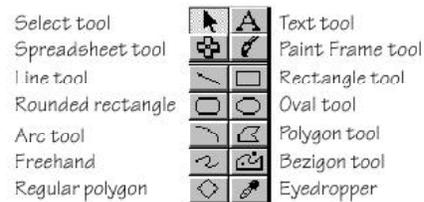
Lesson Plan: Shapes Make Pictures

Outcomes	Activity
<p>Technology A5.1, A5.2, B5.1, B5.2</p> <p>Art GCO 2, GCO 7</p>	<p>A graphics program is both a tool and a medium for the developing artist. The skills acquired in this lesson allow for artistic creativity in the digital environment and are transferable to all other digital presentations such as word processing and presentations (slide shows). This lesson builds upon what students have learned about the drawing program in AppleWorks from the primary lessons, but students who have never used the program before, need only to be shown the basics to successfully complete this lesson.</p> <p style="text-align: center;">Resources</p> <ul style="list-style-type: none"> • AppleWorks Drawing • Word Perfect • Ultimate Writing Creativity Center • Inspiration 7.5 <p style="text-align: center;">Background</p> <p>The Mouse - While the mouse can vary, the basic variety has a left and right button, and a little movable ball on the underside. The mouse is used for opening, closing, moving and resizing windows. In graphics programs it is also used to manipulate objects about the screen. In word processing applications it is used to select text and move the cursor about the document. The mouse has three operations:</p> <ol style="list-style-type: none"> 1) Clicking - to move the cursor or select an object, the left mouse button is clicked once. The right button is only used in some programs for special functions. However, the settings for these two buttons can be switched to make clicking easier for the left-handed user. 2) Double-clicking - clicking the left mouse button quickly twice in succession without moving the mouse in between clicks. 3) Dragging - click the left mouse button and hold it down while moving the mouse pointer across the screen. This allows for text to be selected and selected objects to be moved. <p>Art - as budding young artists, students can use the drawing application in AppleWorks to create some very elaborate illustrations. The sky is the limit!!</p> <p>In the computer lab - Any graphics program can be used for this exercise, however AppleWorks Drawing allows the beginning user the greatest ease when editing, moving and deleting objects that they have drawn. Detailed explanations on the topics can be found on the Journey On website at: http://www.edu.pe.ca/journeyon/tech_support_pages/help_manual/drawing/default.htm</p>

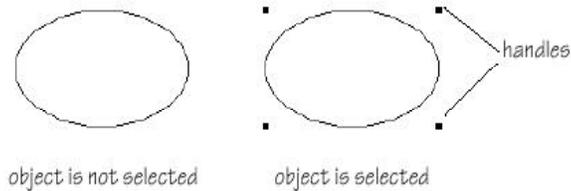
Lesson Plan: Shapes Make Pictures

Background (*continued*)

Introduce students to the tool bar. Clicking on the tools enables you to make shapes.

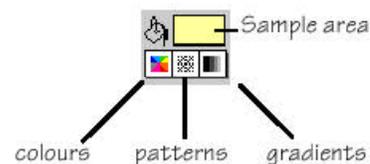


If the mouse pointer looks like an arrow you can delete or move the shape that you have drawn. Put the pointer on your object and click to “select” it. An object is selected if the little square handles can be seen around the object.



Once the object is selected, tap the DELETE key to remove the object from the screen. Point to the object and click and hold the left mouse button. While holding the button down, move the mouse. The object will also move on the screen. If you place the tip of the mouse pointer exactly on the handles, and then click and hold, you can stretch or shrink your object as you move the mouse.

The fill tools are located below the tool panel. They allow you to add colour inside your object. The object must be selected in order to colour it. Once an object is selected click the colour palette and then the colour of your choice.



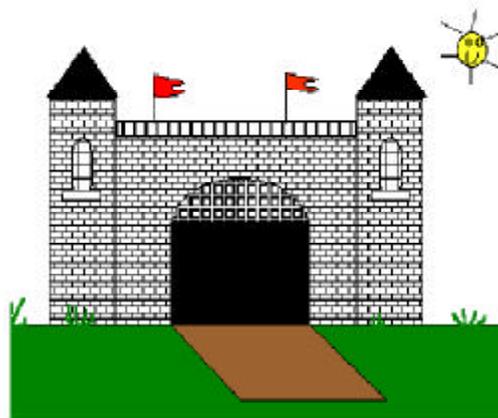
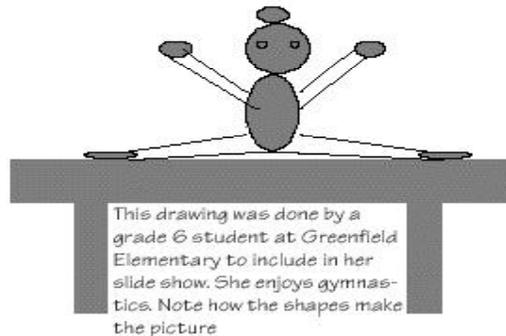
Lesson Plan: Shapes Make Pictures

Instructions

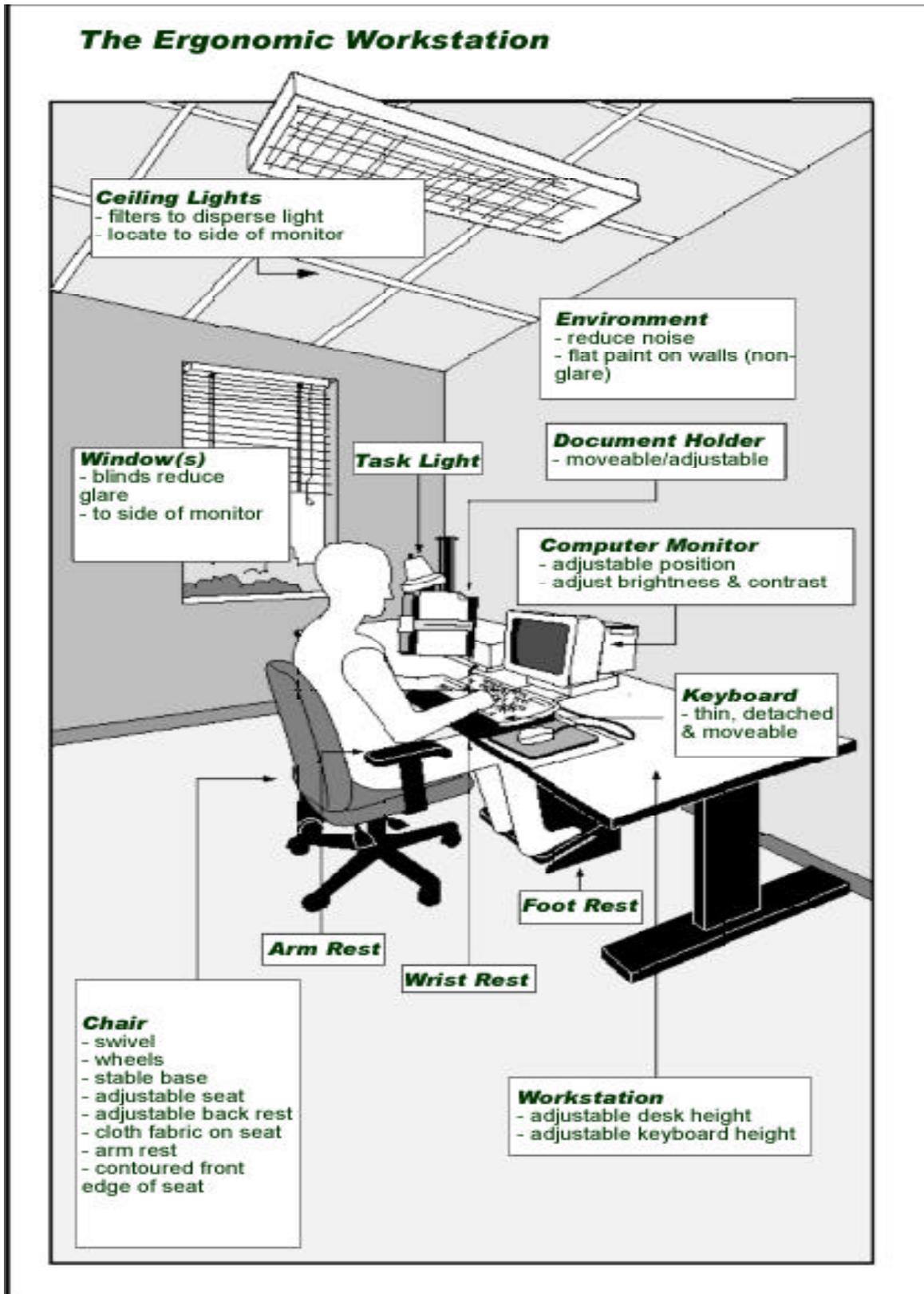
Have students explore some of the advanced features of AppleWorks Drawing such as the group command, duplicate, flip horizontal, flip vertical and layering (move to back, move backward, move to front, move forward).

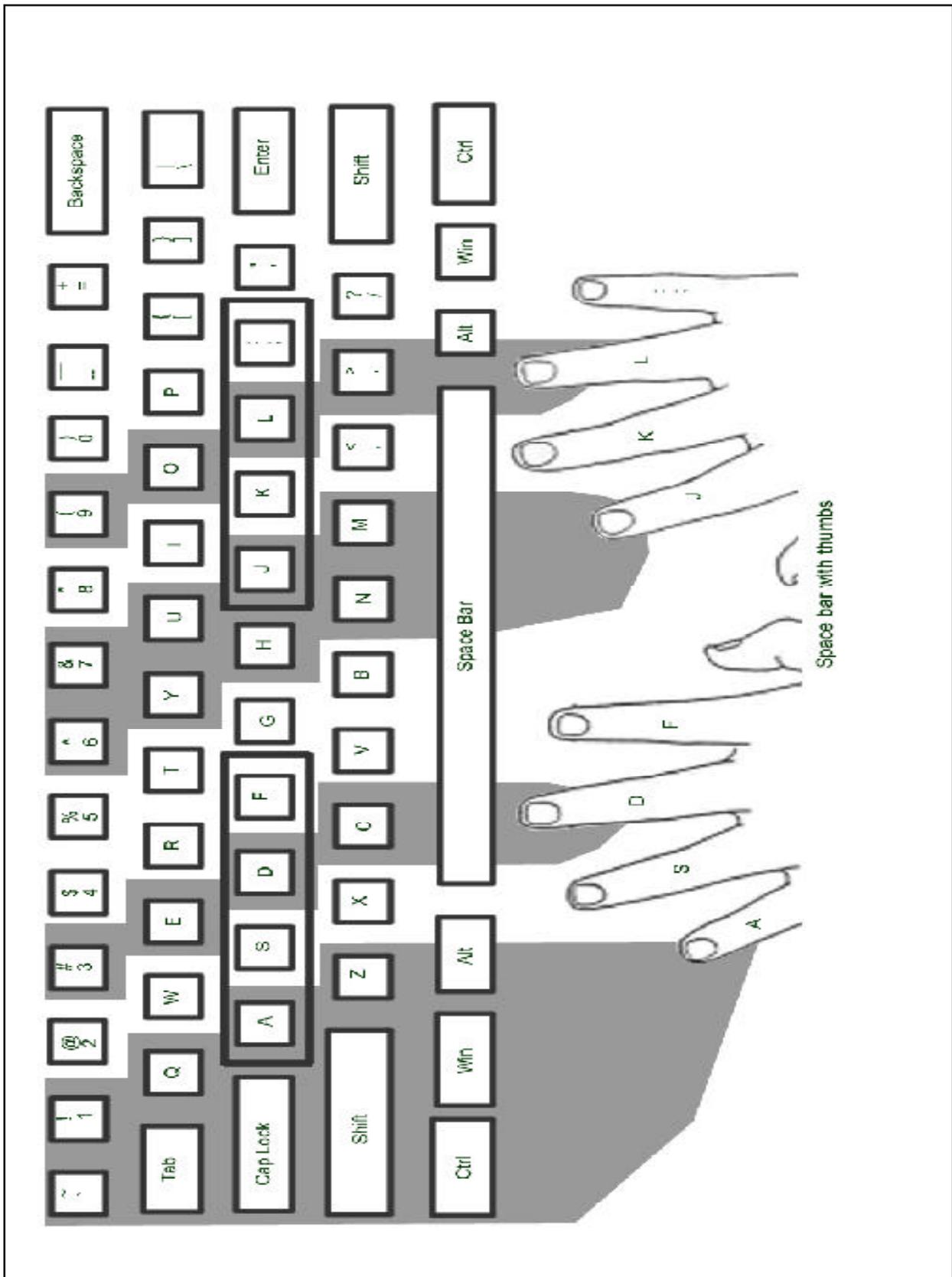
Students will quickly learn the necessary skills to create a picture. The introduction of the program tools can be brief with more time given for creation and exploration.

The pictures found on the next few pages are provided to give teachers a starting point for digital representations. After some exploration, you might have students try to create their own versions of the pictures on the next few pages. The grade levels indicated are only given to show the levels of development. Ignore (white out) the grade levels and try to match the skill level of your students to one of the pictures. Or, allow students to develop a theme from the classroom or personal interest.



Take a close look at this picture of a castle. It was created using the rectangle, oval, irregular polygon, freehand, and line tools of the AppleWorks graphics program. Can you recreate this castle, or create a castle of your own using only the tools mentioned above?





Glossary

Abbycat: PEI Public library database system

Absolute: a cell reference that remains constant in a formula. Dollar signs are used to force the spreadsheet to keep the cell reference in a formula the same when it is copied. (i.e. when the formula =A6/\$B\$6 is copied the numerator A6 will change to A7, A8, etc. while the denominator \$B\$6 will stay the same)

APA: abbreviation of American Psychological Association. The APA standard is used for quoting references for the sciences.

Applet: An application, written in Java, that can run inside a web page but is not limited by the functionality of HTML. Java applet and Java script differ that a Java applet needs to be downloaded. Java script is incorporated in a web page with HTML tags.

Application sharing: a program that is installed on the server computer which allow all computers on the network to have access to that software.

Assignment drop box: a mechanism for uploading electronic assignment files for an instructor using an online content management system such as WebCT or ATutor.

Attachment: file that is attached to an email

Auto fill data: spreadsheet feature that will complete a series of entries such as the “days of the week” or “months of the year”. (i.e. enter January, February and select the corresponding cells with the mouse and select “auto fill”. The remaining 10 months will be automatically entered)

Automated text: database input form feature that will automatically fill a field with a predetermined value (i.e. current year, telephone area code, etc.)

Background: display behind graphics and text on a web page. A background can be a colour or a tiled graphic.

Bitmap: pixel (picture element) representation of a graphic. The image is made by small dots (pixels) of different colors.

Bookmark (Favorite): a saved link to a specific place on the Internet.

Boolean operators: logic system that returns “true or false”, “yes or no”, “AND”, “OR”, “NOT”. These terms are used to set parameters for searching.

Browser: a program that accesses and displays files and other data available on the Internet and other networks. (i.e. Internet Explorer, Netscape)

Bullets: a symbol appearing before items in a list.

Button bar: a bar of graphical buttons found in a program that contain “short cuts” for commonly used tasks.

Cascading style sheet (CSS): a feature of HTML that allows users to create style templates (sheets) that specifies how different text elements (paragraphs, headings, hyperlinks, etc.) appear throughout a website.

Cell address: coordinate of a cell. It is represented by a letter and a number such as A2

Cell: the area in a spreadsheet where rows and columns intersect. Data and formulas are placed in cells. Cells are identified by the alphabetical column and numeric row i.e. A1

Clone brush: a graphics tool used to copy all or part of an image.

CMYK: a subtractive color model used in color printing. This color model is based on mixing pigments of cyan, magenta, yellow and black in order to make other colors.

CODEC: abbreviation for COmpression/DECompression. Software or hardware that compresses and decompresses audio and video data streams into smaller sizes while maintaining the quality. (.wmv, .ra, SVCD, MPEG, mp3, etc.)

Cold boot: powering off the computer completely and restarting it.

Column: vertical section of a spreadsheet, identified by a letter

Commercial ware: commercial software which requires purchase and registration.

Compatibility: whether or not hardware or software will work on a computer.

Compression: process of encoding data, video, or audio in order to reduce its size (.zip, .jpg).

Connection line type: how a computer is linked to a network (i.e. T3, modem, DSL, etc.)

Connection speed: the speed of information transfer among networked devices.

Cursor (Pointer): the symbol used to represent the movement of the mouse. (i.e. arrow)

Data entry bar: space in the spreadsheet to enter the cell data or formulas.

Database report: data from fields specified in a search query sorted into a particular order. Calculations and formatting may be applied to the reports generated.

Database: collection of structured, searchable electronic data (i.e. search engines are data bases)

Decompression: process of decoding or reading encoded data.

Desktop publishing: combination of text, images and graphics to produce publications such as newsletters, posters and brochures

Display format: the way the files and folders are being displayed in the windows (i.e. thumbnails, icons, details, etc.)

Distribution list: a list of email addresses that are grouped together so that one email message may be sent to all members of the group. (i.e. all students in a class, all teachers on a particular committee)

Download / Upload: refers to the transfer of information between computers. The person/computer sending the information refers to the transfer as an upload, while the person/computer receiving the information refers to it as a download.

Drive: name that refer to a storage location such as C:, G:, or A:

Dynex: PEI (French) school library database system

Effect: graphical manipulation that applies special effects to objects (i.e. chrome, neon).

Embed object: objects (audio, video, animation, etc.) that load with the HTML tags when the page is visited. Those items will be downloaded and run automatically

Ergonomic: workplace designed for maximum comfort, efficiency, safety, and ease of use.

Error checking routine: features in a database input form that checks to see that entered data corresponds to some pre-defined criteria (i.e. ticket number must fall within the range of 1-500, and no two records may have the same ticket number)

Export: to transfer information to another format for use in a different program.

Field types: identifies the type of information that is to be entered into a field in a database (i.e. date, numeric, text)

Fields: different categories in a database (i.e. first name, middle initial, last name, street)

File extension: alphanumeric characters located after the period at the end of a filename. This identifies the type of software that can open the file. (i.e. .mp3, .wpd, .gif, .html, etc.)

File management: process of organizing files into folders and sub-folders and selecting storage medium (i.e. hard disk, floppy disk, CD)

File properties: detailed information on the file. (i.e. size, date, extension)

File size: storage space taken by a file in the computer system (i.e. kilobytes - kb, megabytes - mb, gigabytes - gb)

Filter (graphic): graphical manipulation that applies special effects to images (i.e. blur, sharpen).

Filters: search criteria that allow particular emails to be located. Filters may be set with “rules” that provide directions on tasks to perform with selected emails.

Fixed/locked titles: feature in spreadsheet program to keep certain cells showing (i.e. headings) while scrolling

Flash: developed by Macromedia, Flash is a software used to create web content that interacts with the users by providing animations, audio, games, etc.

Flat database: is a single database table structure (i.e. Appleworks, MS-Works) Searches can be performed within this table but it is not capable of organizing complex applications.

Folder (Directory): an electronic storage area that can contain a group of files and/or other directories.

Font: the style of text characters. (Times New Roman, Arial, Garamond, etc.)

Footer: text placed automatically at the bottom of each page in a document

Frame: a webpage that has separate divisions (windows) within the web browser. The content for each frame area comes from a different .html file.

Freeware: software distributed by the creator free of charge under certain conditions.

Functions: pre-defined mathematical rules that are available in spreadsheet programs i.e. mean, round, standard deviation, exponents, payment amount, etc.

Graphics in layers: objects placed over other objects to create one image. This allows for easier editing and manipulation.

Group file sharing: a specific network folder that a workgroup member can share

Grouping: creating one single object made up of several other objects. This allows for resizing the object as a whole.

Hardware: all physical parts of a computer (i.e. monitor, mouse, keyboard, etc.).

Header: text placed automatically at the top of each page in a document

Hexadecimal: a numbering system with base of 16 includes only the digits 0 through 9 and the letters A, B, C, D, E, and F. Used to identify large numbers accurately i.e. identify colors, network addresses.

Hosting service: service that companies provide to store data on their server

HTML tags: Hypertext Markup Language tags are instructions within brackets < > that tell the web browser how to display the page information.

Image map: an alternative navigational structure whereby an image on a webpage has “programmed coordinates” that allow the user to navigate the site intuitively, using the mouse.

Import: to bring in external information

Insertion point: the insertion point is where the next character typed from the keyboard will appear. (i.e. “I beam”)

Interactive syllabus: an electronic course outline

Java Script: a scripting language developed by Netscape to enhance the capability of HTML language

Justification: adjustment of text to ensure that margins will align throughout the document (i.e. left, center, right)

Layer: visualized as electronic “transparencies” which allow users to display and manipulate information separately.

Link (Hyperlink): a clickable link to another file (i.e. web page).

Lock cell: locking a cell will prevent any changes on its content. It doesn't hide the content of the cell.

Logical operators: used to compare variables such as greater (>) greater or equal (>=), equal (==), less or equal (<=) and less (<).

Macro: a group of repeated commands that are recorded and saved for later use.

Mail merge: a word processing feature that allows a user to create a “data records” database to record information about a number of people, and a form letter template. Based upon a search criteria, names, addresses and other recorded data are combined with fields found in the form letter. Completed forms may be displayed on the screen or sent directly to a printer.

Menu bar: a horizontal bar at the top of a window, below the title bar, that contains drop-down menus.

Microcat: PEI (English) school library database system

MLA: abbreviation of Modern Language Association. The MLA standard is used for quoting references for the humanities.

Multimedia: the use of several media to convey information (text, audio, graphics, animation, video).

Multiple logins: simultaneously logging into multiple computers on the same network using the same username.

Network: a communication system connecting two or more computers.

Notebook: another name for an individual spreadsheet.

Object alignment: positioning of an object with respect to other objects.

Panorama: a series of picture “stitched” together using software to create a picture wider than what the camera is normally capable of capturing. Some panorama can offer user a 360 degree view.

Plug-in: an auxiliary program that works within a browser to enhance its capability. The plug-in can be a third party product. (adobe reader for .pdf, Real Audio, Shockwave, etc.)

Pop-up ads: a form of online advertising that open a new window automatically to display advertisements.

Principles of design: five universally recognized principles are contrast, unity, pattern, movement, and rhythm. Used in combination these principles create an esthetically pleasing product.

Print queues: set of printing tasks waiting to be processed.

Publishing etiquette: acceptable guidelines for publishing. (i.e. non-biased, inclusive language).

Record: all fields relating to one “object” in a database (i.e. all information regarding one student)

Relational database: is the creation of multiple tables linked to each other through a common “key” such as a customer number. (i.e. a travel agency may have customer contact information in one table, airline reservations in a second, hotel and car reservations in a third. If any piece of information changes only one table needs to be updated.)

Relative: a cell reference that will automatically update itself in a formula when it is copied. (i.e. a formula =A6/B6 will update itself to =A7/B7, =A8/B8, etc. as it is copied downward in a column)

Rename: change the name of the file or folder to another name.

RGB: a color model that utilizes the additive model in which red, green, and blue light are combined in various ways to create other colors (i.e. pixels on a computer monitor). Colours created on the computer monitor sometimes may not be able to be reproduced when printed.

Rollover (mouse over): a “change of state” when the mouse is positioned above an object.(i.e. colour changes, cursor changes, image changes)

Row: horizontal section of a spreadsheet, identified by a number

Rule: a task to perform on emails that meet a particular criteria. (i.e. send a return message for all incoming emails, such as “on vacation until ..”, delete message from particular sources, or automatically place mail in a particular folder)

Save as: same as “Save” but allows user to save a copy of current file under a new name or location.

Save: permanently record data to a storage medium such as a floppy disk or hard disk.

Screen capture: saving a portion of the current screen as an image file to be inserted into a document. Paintshop Pro includes a screen capture utility.

Search engine: a program designed to help find information on the Internet. (i.e. Google, Ask Jeeves, Yahoooligans)

Server: the central computer in a network. (i.e. contains shared data, programs, etc.)

Shareware: trial version of any commercial software.(i.e 30 days) Shareware is also known as demoware, trialware and many other names.

Signature: text added automatically at the end of an email (i.e. name, position, return address, phone/fax number, email address)

Software: program or application that runs on a computer.

SPAM: acronym of the words: Stupid Pointless Annoying Messages. These messages are often advertising emails sent out massively on the internet.

Spreadsheet: a grid which helps you organize data in rows and columns. Calculations may be performed by inserting formulas. Charts or graphs may be generated from the data.

Spyware: computer software that gathers and reports information about the computer usage without the user’s knowledge or consent.

Streaming video and audio: refers to a technique of transferring media over the Internet to the user’s computer so that it is available without having to download the whole file. The media will begin to play once a predetermined amount of data is transferred to the computer “buffer”

Tab rulers: guides found in word processors allowing the user to graphically set and delete tab indents

Template (Master page): a model page that provides a basic structure for adding content

Text art: tool found in Word Perfect that allows the user to create text in 2D and 3D formats in a variety of shapes

Text wrap: word processing feature that automatically places the text on the next line

Touch keyboarding: the ability to type without looking at the keyboard.

Un-grouping: separating objects that were previously grouped.

Unlock cell: this allows modification be to performed on cells that were previously “locked”

Vector: mathematical representation of a graphic. The image is made from mathematical equations that represent the curves, lines, area, color, etc. This form of representation allows for small file sizes while maintaining detail when increasing picture size.

Virtual reality: an artificial environment created with computer technology

Virus: a virus is a program or piece of code that causes an unexpected, usually negative, event.

W3C accessibility guidelines: World Wide Web Consortium organization that provides standards for web page creation. These include accessibility issues (challenged users, slow line speeds, older processing equipment) and equipment compatibility.

Warm boot: restarting the computer using reset button, Ctrl+Alt+Del, etc.

Watermark: a graphic or text appearing in the background of a page (i.e. the word “Draft” or a graphic of a soldier in a Remembrance Day poem)

Web Server: a computer that stores data (i.e.: web sites) for the world wide web

Whiteboard: a whiteboard is a shared electronic workspace. Each participant can add text, make drawings or paste pictures on the whiteboard. Other participants can immediately see the result on their workstation.

Wireless connection: connection to another device without physically connecting a wire.

WYSIWYG: Acronym for “What You See Is What You Get”. WYSIWYG is used to describe applications that let you see what documents will look like