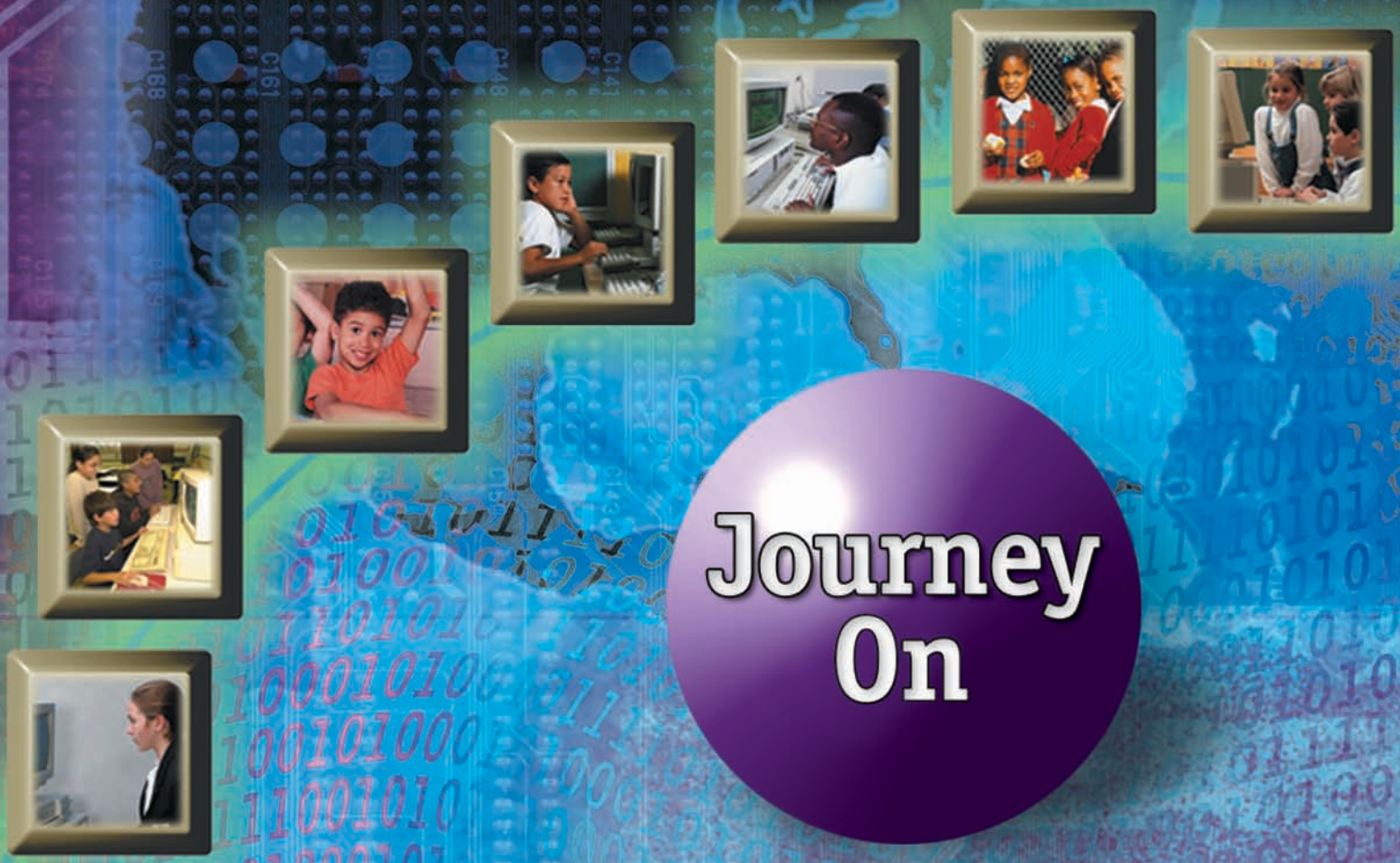
Prince Edward Island
CANADA

Department of Education



Journey On

Working Toward Communication and Information Technology Literacy

Grade 7

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 7 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

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.

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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.*

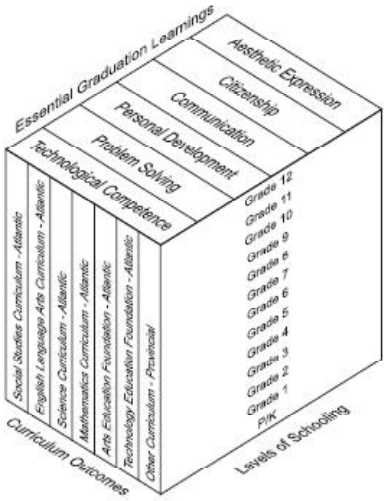
Essential Graduation Learnings (EGLs)

"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 identfied 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

her

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

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

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 and 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

Awareness | Guided Instruction | Independent

	Students will be expected to:		1	2	3	4	5	6	7	8	9	10	11	12
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

	Students will be expected to:		1	2	3	4	5	6	7	8	9	10	11	12
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

	Students will be expected to:		1	2	3	4	5	6	7	8	9	10	11	12
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

	Students will be expected to:		1	2	3	4	5	6	7	8	9	10	11	12
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

Awareness | Guided Instruction | Independent

	Students will be expected to:		1	2	3	4	5	6	7	8	9	10	11	12
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, hexidecimal (RGB and CMYK colour values)													
B5.4	convert various graphic formats between vector (ie: .png, .psp, .cdr) and bitmap images (ie: .wmf, .tif, .bmp, .gif, jpeg, .jpg), import a graphic file from another source													

Spreadsheets

Awareness | Guided Instruction | Independent

	Students will be expected to:		1	2	3	4	5	6	7	8	9	10	11	12
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)													
A6.2	correct errors, modify or delete data in a cell													
A6.3	design own formulas incorporating functions {if SUM(B1..D1)>0, @SUM(B1..D1), 0} and absolute / relative cell references													
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)													
B6.1	identify spreadsheet components and terminology (rows and columns, cell addresses, data entry bar)													
B6.2	identify different types of cell data (text, numeric, function, date)													
B6.3	enter data into simple preexisting spreadsheets, auto fill data, data entry bar, sort data													
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)													
B6.5	enter formulas to perform calculations across columns, rows, cells, move/copy data or formulas from one area of spreadsheet to another													
B6.6	format numbers (decimal places, currency, etc.), format text (font, colour, size)													
B6.7	create links [between notebooks (tabs or sheets), external files, graphs, charts, website]													

Word Processing

Awareness | Guided Instruction | Independent

	Students will be expected to:		1	2	3	4	5	6	7	8	9	10	11	12
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

Awareness | Guided Instruction | Independent

	Students are expected to:		1	2	3	4	5	6	7	8	9	10	11	12
A8.1	apply planning strategies, (storyboards, scripts, graphic organizing, brainstorming)													
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)													
A8.3	describe situations where streaming video and audio is appropriate													
A8.4	create graphics, audio and video special effects (animation, virtual reality, panorama)													
A8.5	select appropriate medium to convey a message (be conscious of file size, formats and storage location)													
B8.1	navigate multimedia resources such as slide shows, online resources or CD rom interactive educational activities													
B8.2	use multimedia creation and editing tools (screen captures, scanner, sound recording, digital image editing software: still and video)													
B8.3	convert file formats for a particular application (.jpg, gif, .bmp, mp3, wav, avi, mpeg, mov, etc.)													
B8.4	use proper tools and procedures to enhance product quality. (Microphones, lighting, camera movement, instrumentation, teleprompters, assign various responsibilities to a production team.)													

Database

Awareness | Guided Instruction | Independent

	Students will be expected to:		1	2	3	4	5	6	7	8	9	10	11	12
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

Awareness | Guided Instruction | Independent

	Students will be expected to:		1	2	3	4	5	6	7	8	9	10	11	12
	Email:													
B10.1	send messages													
B10.2	open messages													
B10.3	manage mail/folders													
B10.4	manage address books													
B10.5	use distribution lists													
B10.6	send and open attachments													
B10.7	create signatures													
B10.8	apply filters and rules													
B10.9	use calendar features such as appointments, tasks, reminder notes/memos													
	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.)													
B10.10	use the organizational features of collaborative tools such as scheduling, calendaring, and interactive syllabus													

Web Authoring

Awareness | Guided Instruction | Independent

	Students will be expected to:		1	2	3	4	5	6	7	8	9	10	11	12
A11.1	identify web page creation possibilities													
A11.2	create appropriate text and image file formats													
A11.3	create an interactive webpage. (online surveys, forms, interactive database, polls)													
B11.1	examine html tags													
B11.2	create a basic web page (may include backgrounds, images, hyperlinks, tables)													
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)													
B11.6	embed objects (audio, video, pdfs, animation, Flash, Java Script Applet,)													
E11.1	describe standards which guide web based publication (W3C accessibility guidelines)													

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.

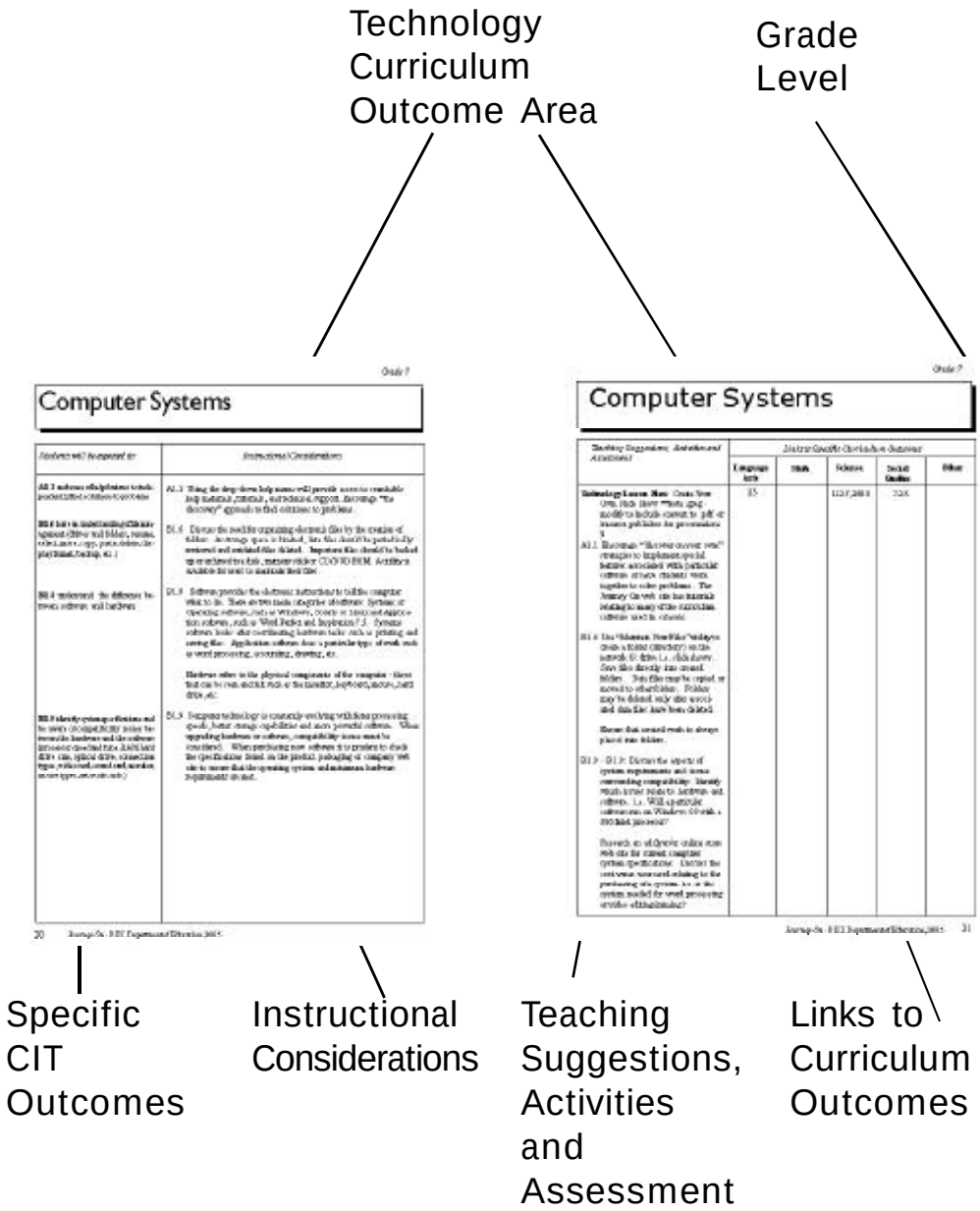
The remainder of the document addresses the level and defines specific knowledge and CIT skills expected of students as they work toward technology competency. Practical considerations are given for incorporating CIT into the curriculum and accompanying lesson plans. The information is presented in a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



Two Page-Layout in Detail

letter designation of general technology outcome

A5.1

indicates first skill in subdivision

refers to fifth area for this grade level under technology general outcome A

Specific Outcomes

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

Grade 7

Computer Systems

Students will be expected to:	*Instructional Considerations*
A1.1 make use of help features to independently find solutions to problems	A1.1 Using the drop-down help menu will p help materials, tutorials, and technical discovery" approach to find solutions
B1.6 have an understanding of file management (drives and folders, rename, select, move, copy, paste, delete, display format, backup, etc.)	B1.6 Discuss the need for organizing elect folders. As storage space is limited, d reviewed and outdated files deleted. I up or archived to a disk, memory stick or CD/DVD ROM. A utility is available for users to maintain their files.
B1.8 understand the difference between software and hardware	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 Applica-

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

aluate and select information using

Teaching Suggestions and Activities	*Links to Specific Curriculum Outc*		
	Language Arts	**Math**	**Science**
Grade 2 **Language Arts Theme**: *New Perspectives* **Lesson Plan**: *Through a Bug's Eyes*	**A1, A3, A4, D1, D3 E1, E1.3, E1.5 G1, G1.1, G2, G2.1, G2.2, G3, G3.1**		
Grade 3 **Language Arts Theme**: *Vanishing Animals* **Internet Sites**:	**A1, A3, A4 D1, D3 E1, E1.3, E1.4, E1.5 G1, G1.1, G2, G2.1, G2.2, G3, G3.1 H2, I1, J5**		

Links to Curriculum Outcomes

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

Computer Systems

Students will be expected to:	***Instructional Considerations***
A1.1 make use of help features to independently find solutions to problems (Guided)	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.
B1.6 have an understanding of file management (Independent)	B1.6 Discuss the need for organizing electronic files by the creation of folders (drives and folders, rename, select, move, copy, paste, delete, display format, backup, etc.). As storage space is limited, data files should be periodically reviewed and outdated files deleted. Important files should be backed up or archived to a disk, memory stick or CD / DVD ROM.
B1.8 understand the difference between software and hardware (Independent)	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, such as Word Perfect and Inspiration 7.5. 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.
B1.9 identify system specifications and be aware of compatibility issues between the hardware and the software (Guided)	B1.9 Computer technology is constantly evolving with faster processing speeds, better storage capabilities and more powerful software. When upgrading hardware or software, compatibility issues must be considered. When purchasing new software it is prudent to check the specifications found on the product packaging or company web site to ensure that the operating system and minimum hardware requirements are met (processor speed and type, RAM, hard drive size, optical drive, connection types, video card, sound card, monitor, mouse types, network cards).

Computer Systems

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
Technology Lesson Plan: ***Interactions within Ecosystems*** Outcomes A1.1, A4.1, B1.9, B1.16, B4.1, B4.2			**109-13, 111-6, 112-7, 210-2, 306-1**		
Create Your Own Slide Show	2.3		112-7, 209-3	7.1.1	
A1.1 Encourage "discover on your own" strategies to implement special features associated with particular software or have students work together to solve problems. The Journey On web site has tutorials relating to many of the curriculum software used in schools.					
B1.6 Use "Maintain Your Files" utility to create a folder (directory) on the network G: drive i.e. slide shows. Save files directly into created folders. Data files may be copied or moved to other folders. Folders may be deleted only after associated data files have been deleted. Ensure that created work is always placed into folders.					
B1.8 - B1.9: Discuss the aspects of system requirements and issues surrounding compatibility. Identify which issues relate to hardware and software. i.e. Will a particular software run on Windows 95 with a 386 Intel processor? Research an ad flyer/or online store web site for current computer system specifications. Discuss the cost verus user need relating to the purchasing of a system. i.e. is the system needed for word processing or video editing/gaming?					

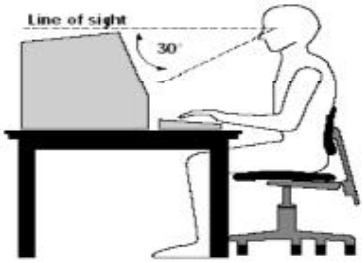
Computer Systems

Students will be expected to:	***Instructional Considerations***
B1.11 describe networks, file servers, connections (Awareness)	B1.11 A network is the connection of two or more computers to share files, software, printing and other resources. Classroom computers connected within a school is referred to as a local area network (LAN). All schools are connected together in a wide area network (WAN). Within the school, computers are connected with category 5 twisted pair copper wires and linked through hubs and switches. Among schools a variety of communication technologies may be used. Fibre optic lines are rented from telecommunication providers where line speeds such as 10, 100 megabit or 1 gigabit per second capacities may be purchased, depending upon need. Schools outside the fibre optic service area may be connected using Symmetric Digital Subscriber Line (SDSL) which is a technology similar to a home high speed connection. Where several schools are in line-of-sight, wireless transmission may be used.
B1.12 demonstrate proper use of network printing, choose proper printer, recognizes process and purpose of Print Queues (Independent)	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.
B1.16 import and export files to other formats (Guided)	B1.16 Many programs allow the exporting of files to other formats. Word Perfect files, for example, may be converted to portable document format (.pdf). This allows users who do not have the Word Perfect program to view the file with a free reader program from Adobe Systems. Word Perfect files may also be exported into hypertext markup language (.html) format so that they may be read using a web browser. The import feature allows data created in one program to be opened and manipulated in another program. The method and file formats used will vary from program to program.

Computer Systems

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
B1.11 Discuss careers in the networking/ communications field. Identify job descriptions, educational requirements and salary levels. What skills and equipment would be required to network two computers together at home? (Research this from the Internet, ask someone who has done this, invite a guest speaker, etc.) B1.12 Demonstrate the features of print queue monitoring software. Have two or three students select the printer and send print jobs while the printer power switch is turned off. Note the originator of the print job, the time the job was sent, and the order in which the printing will occur. Delete the print jobs that are waiting. B1.16 Demonstrate the conversion of a completed slide show to .pdf or web compatible format so that people who do not have Presentations 9 can view the content. Adobe Reader is a free software that is used to view .pdf files. It is available on school networks or it may be downloaded from the Internet. Web compatible formats allow the show to be viewed with a web browser.					

Social, Ethical and Health

Students will be expected to:	***Instructional Considerations***
A2.1 identify aspects of an ergonomic workstation (Guided)	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) Teaching young children to position themselves properly at the computer and using good posture is essential to prevent the future development of serious injury.  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.
B2.1 demonstrate proper touch keyboarding techniques (Guided)	B2.1 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 (i.e.: home row, quick keystrokes, proper reaches). After practice students will be able to key much faster than they can write with pen or pencil.

Social, Ethical and Health

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
Technology Lesson Plan: ***Travel Agency*** Outcomes A2.1, B2.1, C2.1, D2.1, E2.5, E2.6 A2.1 Visit Options Incorporated (http://www.oiweb.com/ergo/workstation-setup.html) or use a search engine to find guidelines for workstation setup, proper posture and stretching routines. Remind users of the importance of following these guidelines. Adherence to the above principles may be incorporated into an assessment strategy. See appendix for a diagram of an ergonomic workstation. (Occupational Health and Safety Manual, Draft 2004) Discuss and model good posture and work habits required to reduce the risks of computer associated injury. Observe position at the computer and provide feedback to users. Create a checklist or rubric for assessment. B2.1 Adhereance to the proper touch keyboarding techniques may be incorporated into an assessment strategy.	3.2, 3.3, 7.1	F7	112-8, 112-9, 113-11	**7.2.3**	

Social, Ethical and Health

Students will be expected to:	***Instructional Considerations***
C2.1 examine current Canadian law governing the use of technology (Guided)	C2.1 Many changes to Canadian laws governing technology use are "reactive" in nature as new technology and applications are developed. Extensions to laws have been made related to Electronic Contracts; Copyright; Trademarks; Internet Consumer Protection; Internet Advertising; Personal Information Protection; Criminal Law and Securities Law.
D2.1 determine the technological requirements for specific career goals (Guided)	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 numercy, literacy, and technological skills is five fold higher than those who have equivalent numeracy and literacy skills. *(Murray, T. Scott. Statistics Canada. A Presentation To Cabinet, Charlottetown, PE. January 28, 2005)*
E2.4 use electronic communication etiquette (Independent)	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.
E2.5 adhere to rules of freeware, shareware and commercial ware (Guided)	E2.5 Programs that are available on the Internet may be easily attainable but are not always free (Also remember that these programs can be the most common source of computer viruses). Software programs referred to as freeware are free. Often there are limitations to the term "free"and these are usually defined in a "read me" file that comes with the program or appears before you download it. Shareware, on the other hand is NOT free. It is often very inexpensive,but to use it, you are required to send the authors a fee.

Social, Ethical and Health

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
C2.1 Visit sites such as IT.Can Web resources (http://www.it-can.ca/en/resources.html). Discuss a particular area of law that required revision because of advances in technology. Debate the merit of these changes made to Canadian law. D2.1 Visit http://www15.hrdc-drhc.gc.ca/english/general/home_e.asp and determine technical (computer use) requirements of careers in particular areas i.e. tourism, hospitality, travel. List at least ten ways technology is used in the selected career. E2.4 Research emoticons and letter expressions (i.e. lol - laughing out loud) used on the Internet. Discuss situations in which the use of these would be appropriate. Does the use of emoticons limit "access" to information published in this format on the Internet? Do writers need to consider the feelings, rights, and needs of others when opting to use such abbreviations? E2.5 Visit a download site such as www.tucows.com and note the classification of software available. Discuss possible reasons for some software having no cost while others are quite expensive.					

Social, Ethical and Health

Students will be expected to:	***Instructional Considerations***
E2.6 adhere to copyright and privacy laws, give credit to sources of information (Guided)	E2.6 Most materials on the Internet are copyright protected. Ideas or quotes must be properly cited and authors' permission must be obtained for the use of graphics or images taken from online sources. The following illustrations and examples have been obtained from University online publications citing the Modern Language Association (MLA) and the American Psychological Association (APA) publication manuals. MLA - Humanities Style: (format for Internet journal publication) Generic format: Author(s). "Title of Article." Title of Journal Volume. Issue (Year): Pages/Paragraphs. Date of Access <electronic address>. Specific example: Stach, Michael. "Introduction to Blogs and Blogging." Tech Learning. 24. 9 (2004): 23 pars. 10 March, 2005 <http://www.techlearning.com/story/showArticle.jhtml?articleID=18400984> APA - Style: (format for Internet journal publication) Generic format: Author, A. (Date of publication). Title of article. Title of journal, volume number (issue number if available). Retrieved month day, year, from http://Web address Specific example: Stach, Michael (2004). Introduction to Blogs and Blogging. *Tech Learning 24 (9).* Retrieved March 10, 2005 from http://www.techlearning.com/story/showArticle.jhtml?articleID=18400984

Social, Ethical and Health

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
E2.6 Cite references to web sites used to locate information using the MLA style.					

Social, Ethical and Health

Students will be expected to:	***Instructional Considerations***
E2.7 identify ethical issues involved with Internet content, awareness of inappropriate use of technology (Independent)	E2.7 Organizations have developed a "code of ethics" over time. This guides members actions as to what is right or wrong. i.e. medical, legal, journalism societies have written codes of conduct. Students and teachers sign an acceptable use policy that outlines appropriate use of technology. The Office of the Privacy Commissioner of Canada website (http://www.privcom.gc.ca/fs-fi/02_05_d_13_e.asp) offers many suggestions for protecting personal privacy on the web (chat, discussion forums, newsgroups, blogs, e-mail, etc). Commercial web sites have been tracking visitor information and browsing habits for over a decade through the use of "cookies" (small text files stored to a computer's hard drive to "remember" information from that site, including names, passwords and pages visited). Evolving technology is allowing companies to match online users and their activities to their real-life identities.
E2.9 follow publishing etiquette. Adhere to the guidelines for school web pages as outlined by PEI Department of Education. (Guided)	E2.9 The Journey On website (http://www.edu.pe.ca/journeyon/tech_support_pages/GuidelinesforSchoolWebPages.html) provides many suggestions and guidelines for online publishing. Note that pictures and full student names should never appear together in an online document. Parental release forms must be signed for student names, pictures or works to appear in an online document. Release forms may be downloaded from the Journey On site. Etiquette refers to suitable language, no discrimination, etc.

Social, Ethical and Health

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
E2.7 Visit the Canadian Government site "The Canada Strategy to Promote Safe, Wise and Responsible Internet Use" (http://www.cyberaverti.gc.ca/english/home.html) Discuss inappropriate uses of technology such as cyber-bullying, harrassment, identity theft, hate, electronic fraud, hacking, virus creation, etc. Identify strategies to protect or minimize impact of these activities. E2.9 Discuss with students the criteria for publishing content and have them apply these standards. Ensure that all published work meets the "Guidelines For School Web Pages" from the Journey On website.					

Internet

Students will be expected to:	***Instructional Considerations***
A3.1 demonstrate awareness of the Internet as a source of information (Independent)	A3.1 The Internet is an extensive "web" of interlinked computer networks. The Internet includes computers from educational institutions, governments, libraries, businesses,and research institutions. Once connected to the Internet, individuals have access to a vast amount of information and resources provided by these organizations.
A3.2 use various tools and strategies necessary to carry out research (Guided)	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. The tools(search engines and directories) and/or strategies employed in a query will depend upon the source of information (Internet, database, etc.) Boolean operators (AND, OR, NOT, AND NOT and for the Internet: ADJ, and NEAR) are common to each. In databases, queries often require the use of Logic operators, such as: less than (<), greater than (>), less or equal (<=), greater or equal (<=), not equal (<>), and equal (=). Utilize the various Help features of Internet search engines. Search engines may differ among each other in the way a query must be formulated. For example, a number of search engines require Booleans to be written in capitals.
A3.3 obtain/download material from Internet (Guided)	A3.3 Material (text, graphics, files) may copied and pasted, downloaded to the users computer, or "captured" with a screen capture feature of a graphics program from the Internet. Be aware of copyright issues when doing this.
B3.1 use the various browser navigation tools (Independent)	B3.1 The back/forward buttons enable the user to go to the previous or next page from the present one. Should one of the buttons appear shaded or "greyed out", it means that this feature is not available at the moment. History provides an alphabetical record of viewed web sites and the time the site was visited. In Internet Explorer the history button appears as a "sundial" icon in the menu bar.

Internet

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
Technology Lesson Plan:					
World War I Looking For Answers Outcomes A3.2, A3.3, B3.3, C3.1, E3.1				**7.5.1, 7.6.1, 7.6.2, 7.6.3**	
A Fishy Tale *Investigate A Mystery*	4.1, 5.2, 6.3, 10.5	F2, F3, F7	109-1, 111-1, 111-2, 112-4, 112-7, 210-2		
A3.1 Constructivist and resource-based approaches encourage the use of multiple sources of information. The location and independent use of these resources require higher level thought processes from Bloom's Taxonomy. Visit five topic related web sites to gather pertinent information. Note the various types of information that is available on the topic i.e. participating countries in World War I. A3.2 Search engines, such as Google, Yahooligans, and Ask Jeeves will provide links to sites. Key the search term, such as *World War I* or *Canadian Fishery*. Possible links to thousands of sites related to each word will be returned. Narrow the search by determining key words closely related to your chosen topic and place quotation marks around these i.e. "canadian cod fishery". Look in the search engine results for ideas on other search terms i.e. fish landings, fishery quotas, etc.					

Internet

Students will be expected to:	***Instructional Considerations***
B3.2 manage bookmarks/favorites (Independent)	B3.2 Bookmarks or Favorites may be set within Internet browsers to remember particular Internet sites that were visited. These bookmarks must be categorized into folders so that sites may be located quickly and easily. Periodically, users may want to delete bookmarks that are no longer useful.
B3.3 distinguish among various file formats,requiredplug-ins,file compression/decompression utilities (Guided)	B3.3 When downloading or accessing remote files, users must be familar with conventions used with that particular file format(file extension). The software program with which the file was created must be located on the user's computer. Many software vendors will provide a viewer or browser "plug-in" which extend the capability of the user to view creations formatted with their particular software applications eg. Powerpoint, Shockwave, Flash, Quicktime, etc. In addition,vendors may use a file compression/decompression utility (codec) so that files can be made smaller when sending over the Internet. Once the file has been transferred to the user's computer it is decompressed or "expanded" when viewed.
C3.1 Discuss ways in which the Internet is evolving (Guided)	C3.1 The Internet is evolving in regards to line speeds utilized, services available, laws governing, and numbers of users. Voice Over IP technology allows data lines to be used as telephone links. Higher speed lines are making it possible for telephone companies to deliver cable TV services to their customers. Peer-to-peer file sharing utilities, such as Napster, have become more regulated or are becoming pay-for-service businesses. E-Bay (online auctioning) is one of the largest electronic businesses on the Internet. Products such as blogs, instant messaging and wikis become available and their features and options change over time. Large companies, such as Google and Yahoo, provide a variety of Internet services to their clients ie. searching, email, gaming, news, newsgroups, imaging, blogging, web site hosting,etc. More citizens are conducting business with government and banking institutions over the Internet. Online and distance education programs are flourishing as businesses and individuals realize the importance of "life-long" learning.

Internet

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
B3.2 Useful web sites may be saved for future reference. Create a folder to organize favorites/bookmarks. Within this folder, create sub-folders for various topics such as land, air, sea. Search for web sites related to each of the sub-folders. Add these sites to the appropriate folder. Should an error be made the bookmark/favorite may be copied or moved to its proper folder or deleted. B3.3 Search for a topic related file on the Internet containing the extension .pdf This file will automatically open with Adobe Acrobat Reader on school computers. Research the .pdf format to explain why the author chose to save the file in this manner. C3.1 For each of the following categories (i.e. personal, business, entertainment) brainstorm evolving/novel uses of the Internet. Use a "future wheel" regarding services/uses of the Internet ten years from now. What are some of the features that make these sites attractive to the user? (design, interactivity, searchability, colour, name, services provided, etc.)					

Internet

Students will be expected to:	***Instructional Considerations***
E3.1 critically evaluate information and its source based on pre-determined criteria (Guided)	E3.1 The validity of information contained in a particular web site may be evaluated by critically examining several factors. Dalhousie University Library provides a summary and evaluation checklist at http://www.library.dal.ca/how/criteval.htm that breaks the evaluation process into the following six general areas: (Sue Hunter, 1999) • Authority or creditials of the author. Has he/she written other articles? Is he/she educated or have experience in the area? Is the author writing for an organization, such as a university or government? • Purpose. Who is the intended audience? eg. adults, toddlers or teens? Is the site trying to persuade or sell something? Is there a hidden agenda or bias? • Coverage. Is information factual, detailed and presented in its full and proper context? Does the presentation seem to make sense? • Currency. Is the site up-to-date and references recent research or facts on the topic? • Objectivity. Is material presented with balanced and fair arguments? Is there consistency in that arguments do not contradict one another? • Accuracy. Is the information provided in the site corroborated or supported in other sources? Is a bibliography provided? Should a weakness be found in any one of the above areas, the reader should be careful about relying on information found on that particular site. Stress that anyone can easily create a professional looking web site without it being edited or supported by factual information. There are many "fringe groups" who use the Internet to convey their "message" or "view of the world" to an unsuspecting public.

Internet

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
E3.1 Vist the Media Awareness Network site to critically assess the validity of online resources. (http://www.media-awareness.ca/english/teachers/wa_teachers /fact_or_folly_ teachers/index.cfm) Search for sites which contain fictitious information using terms such as "critical literacy", "fact or fiction", "online", in a search string. Teachers should preview selected sites carefully, and provide the URL of pertinent pages. Using the criteria found under "Instructional Considerations", judge the validity of these sites.					

Concept Maps

Students will be expected to:	***Instructional Considerations***
A4.1 use brainstorming techniques to generate ideas (Independent)	A4.1 Concept mapping software exists on the school network to assist users in developing ideas resulting from a brainstorming activity.
B4.1 add fonts, graphics, sound, and colours to enhance ideas (Independent)	B4.1 Learners are able to differentiate among ideas with colors, shapes,patterns. Audio also supports multiple learning styles.
B4.2 create hyperlinks to files, web sites, or multimedia content (Independent)	B4.2 Gather and present information from multiple sources, including documents, by hyperlinking to any file. Drag and drop JPEG and GIF images into a concept map.

Concept Maps

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
Technology lesson plan:					
Interactions within Ecosystems Outcomes A1.1, A4.1, B1.9, B1.16, B4.1, B4.2			**111-6, 210-2, 306-1, 109-13, 112-7**		
Geological Timeline	2.1, 5.3, 8.1, 8.3, 8.4		109-13, 111-6, 209-4, 210-2, 311-5, 311-6	7.1.1, 7.2.3,	
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.					
B4.1 Reflect design creativity through the use of graphics, fonts, sound and color. Critique aesthetic qualities of the completed activity.					
B4.2 Link supporting detail or documentation to the graphic organizer that was created. Explain reasoning for the selection of particular documents used to support the concept.					

Graphics

Students will be expected to:	***Instructional Considerations***
A5.1 create illustrations or graphics by using the various drawing tools (Independent)	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 geometic shapes can be created and then altered with repect to their size, orientation colour and position.
A5.2 apply principles of design (Guided)	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.
B5.1 demonstrate various object editing features (Independent)	B5.1 Graphics programs provide the user with 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.

Graphics

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
Technology Lesson Plan:					
Translations, Rotations and Reflections Outcomes A5.2, B5.2, B5.3		**E9, E10**			
Travel Brochure *Aboriginal Empowerment Webpage*	9.3, 10.3		209-4, 210-2, 211-2	7.1.1, 7.2.3, 7.3.1, 7.4.1, 7.4.3, 7.4.4, 7.7.1	
A5.1 Paintshop Pro and Appleworks have tools to enable users to create original graphics. See Journey On (http://www.edu.pe.ca/journeyon/pro_d_pages/using_psp/using_psp6/tools.htm) for a tools description for Paintshop Pro or (http://www.edu.pe.ca/journeyon/pro_d_pages/awgraphics/awgraphics.htm) for Appleworks.					
Create a graphic for use in the suggested lesson plan activity.					
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.					
B5.1 Manipulate the graphic by adding text, colouring, changing orientation, cropping and resizing.					

Graphics

Students will be expected to:	***Instructional Considerations***
B5.2 carry out various object manipulations (Guided)	B5.2 Graphics programs allow the creation of images and their manipulation. Superimposing a grid on the image allows the user to determine the exact dimensions of any image component. The units of measurements are often pixels but can easily be changed to millimeters, centimeters, inches or points. One of the greatest breakthroughs in graphics design is the possibility to create an image in layers. This method allows the modification (editing, changing of colours and size, placement, etc) of each individual layer without affecting any other component in the image. Moreover, the order of the layers can be easily re-arranged and a layer that was a background in one completed image may become the foreground in the next.
B5.3 use other graphic creation tools (Guided)	B5.3 Creators must consider the medium being used when designing web pages, print publications, etc. Special tools(i.e. clone brush, color replacements, effects, and filters) allow the selection of formats that are particular to the final product. For example, RGB (Red, Green, Blue) format is used to view colour on a computer screen with the use of light. CMYK (Cyan, Magenta, Yellow and Black) are pigment colours that provide all colour combinations in printed publications. Not all colours that may be produced in RGB on the computer screen can be reproduced using pigments when printing.

Graphics

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
B5.2 Build a graphic by adding objects to separate layers. Should a number of similar items be added to one layer, align objects by selecting them and using the automated alignment feature. Observe that objects in completed graphic are aligned. B5.3 Use “dropper tool” to match fore-ground color to an area of the image. “Clone brush” one area of the image to another to remove unwanted objects.					

Graphics

Students will be expected to:	***Instructional Considerations***
B5.4 convert various graphic formats between vector and bitmap images, import a graphic file from another source (Awareness)	B5.4 Vector-based images(i.e: .png, .psp, .cdr) are created as distinct objects recorded as mathematical formulae. Each shape is combined to form a graphic ie. a house. The user can add, remove, and modify individual pieces of the image (such as the roof of the house). Images may be resized without the loss of resolution and the file size will remain relatively constant. Bitmap (Raster) images(i.e: .wmf, .tif, .bmp,.gif, .jpeg, .jpg) are created as a series of small dots called pixels. To visualize this, imagine drawing a picture on graph paper by colouring in each individual square. If you draw a house in bitmap format, all of the shapes used to create the house become one shape composed of many small squares. The result is that it is more difficult for the user to modify individual components of an image. The computer must track each individual pixel and record its colour information and location. As a result, bitmap images are very large. As the user increases the image size, the file size becomes much larger. Resolution will also deteriorate as the image is increased in size. Programs such as Front Page and Word Perfect allow the user to resize images. Users must be aware that the displayed size changes but that the actual file size remains unaffected. For example, large files that are used in .html documents will result in wasted resources in that the file must be stored on the server and will also result in longer wait times for images to be viewed. Always use a graphics program to resize images. Image editing software can be used to open and convert images to the format necessary for a particular application. Many graphic file formats are developed privately and are copyright protected. For example, .psp is a format that is used by Paint Shop Pro. For these files to be used in other applications, they must be converted to a format recognized by the specific application where it will be used. ie. .jpg for Internet pictures, .gif for Internet graphics, .bmp for bitmap, etc.

Graphics

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
B5.4 Convert the completed graphic from its native format (eg. .psp) to one that is compatible with the program being used (eg. .jpg). This is done by selecting the .jpg "file type" with the "Save As" command from within Paintshop Pro. It is good practice to maintain the .psp file and create another in the desired format. All formatting and layers are kept in the .psp file which allows the graphic to be easily changed. Files that are converted to another format have all effects merged together into one graphic.					

Spreadsheets

Students will be expected to:	***Instructional Considerations***
A6.1 plan / design a spreadsheet to organize and tabulate data from various sources (Independent)	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 which can be stored and manipulated using the spreadsheet. You can enter numbers, text, or formulas into your spreadsheet. Once the student has an understanding of the types of data which can be entered into the spreadsheet(schedules, tally / score sheets, solving mathematical word problems), they are better able to design a spreadsheet which will meet their needs.
A6.2 correct errors, modify or delete data in a cell (Guided)	A6.2 Spreadsheets simply 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.
A6.4 use different types of graphs / charts to visually represent data; label graph components (Independent)	A6.4 By entering data into a spreadsheet and labelling graph components(legend, title, x-y axis), students are then able to make a variety of charts and graphs(line, pie, bar). Students will be better able to interpret charts and graphs after having created their own using spreadsheet software.
B6.1 identify spreadsheet components and terminology (Independent)	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.

Spreadsheets

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
Technology Lesson Plan:					
Circle Graphs Outcomes A6.2, B6.2, B6.4, B6.5		**F5, F6, F7**			
Spreadsheet Introduction *Plot the Points* *Line Graphs* *What Are The Chances?*	9.2	A11, C1, D4, F5, F6, F7, G4, G5	209-3, 209-4, 210-2, 210-3, 210-12, 211-2	7.2.3	
A6.1 Discuss situations where the use of a spreadsheet is desirable. The spreadsheet is better suited for reoccuring situations where the user wants to record numeric data and perform calculations. ie. attendance, growth chart, milk sales, etc.					
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.					
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.					
B6.1 Introduce spreadsheet terminology and insist that this terminology be used.					

Spreadsheets

Students will be expected to:	***Instructional Considerations***
B6.2 identify different types of cell data (Guided)	B6.2 It is important to have an understanding of the various types of data which can be stored and manipulated using a spreadsheet. Numbers, text, dates and times, or formulas may be entered into a cell. Each type of data has a distinct purpose and advantage. Numeric: Consists of the numbers 0 through 9, and the minus sign (-) for negative numbers. Numeric data may be sorted, or it can be used for calculations or to produce charts. Dates and Times: Consists of dates entered as numbers (for example, 8/24/95) and times entered as numbers in either 24-hour clock format (for example, 17:20) or 12-hour clock format (5:20 PM). Dates and times may be sorted and different formats selected. Text: Consists of all letters, numbers, and symbols. Text may be sorted alphabetically, but calculations can not be performed. Formula: Consists of a set of instructions that the spreadsheet follows to produce a value for a cell. i.e. =sum(A1..A10) will provide a total of all numbers in cells A1 to A10 in the current cell (the cell where the formula is entered)
B6.4 edit spreadsheet layout (Guided)	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 or deleted in a spreadsheet by clicking on "Calculate/Insert or Delete cells" and selecting the necessary range of cells to move.Column widths and row heights may be altered.Cells may be locked or unlocked.

Spreadsheets

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
B6.2 Enter three dates into a spreadsheet i.e. birthdays, special events, holidays. Change the display format of selected dates. Sort dates by ascending or descending order. Enter 10 numbers in consecutive cells. Use the "auto sum" (appleworks) or "quick sum" (Quattro Pro) Demonstrate that formulas may be placed as =A1+A2+A3 or as a function =sum(A1..A3) [In Quattro Pro @sum(A1..A3) is used] 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. To insert a column or row select "calculate" from the pulldown menu and "insert cells" option. (Appleworks)					

Spreadsheets

Students will be expected to:	***Instructional Considerations***
B6.5 enter formulas to perform calculations across columns, rows, cells, move/copy data or formulas from one area of spreadsheet to another (Guided)	B6.5 Formulas may calculate down columns or across rows and may be entered manually or a "speed sum" feature may be envoked from the task bar. Formulas may also be replicated for cells where similar results are required. When this is done the formula will adjust automatically for the new cell. i.e. a formula =sum(A1..A10) replicated from cell A11 to B11 will automatically change to =sum(B1..B10) Formulas may also be copied and pasted from one cell to another.
B6.6 format numbers and text (Independent)	B6.6 When using a spreadsheet, it is often necessary to format the data entered. Numbers may require a certain format i.e. 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.

Spreadsheets

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
B6.5 Randomly enter two columns of five numbers each. Create a formula using "auto sum" to add the first column. Copy and paste that formula to sum the second column. "Auto sum" the total of row 1 in cell C 1. Select C 1 to C 6 with the mouse and "Calculate" from the pull-down menu and "Fill Down" option. Formulas should appear in the empty cells and should have updated themselves to reflect the address of the cells to their left. B6.6 Apply currency, 2 decimal places, (dollar signs) to all data from the example B6.5. Select "Format" from the pulldown menu and "number" option. Currency, percent, decimals, date, time,etc. may be applied to the data in a cell. 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					

Word Processing

Students will be expected to:	***Instructional Considerations***
B7.5 format text (Independent)	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,text wrap, outlines and bullets).
B7.6 format documents (Independent)	B7.6 Pages may be formatted by inserting page numbers, changing margins and creating 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.
B7.8 insert and format tables and text boxes (Guided)	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.
B7.9 format multipage documents with headers, footers, page numbers, page breaks, and keep text together function, change page orientation/size (Awareness)	B7.9 Headers, footers and page numbers may be formatted to appear automatically on each page. A page break is a code that places the insertion point at the top of the next unused page without needing to use many "enter" commands. Page breaks may be inserted with the use of the [ctrl] + [enter key] in Word Perfect and using the "Format" pull-down menu and "Page Break" in Appleworks. By convention, writers are not to place one line of a paragraph by itself on a following page or separate headings from corresponding text. "Keep Text Together" allows the user to specify how many lines of a paragraph may be placed between the bottom of one page and the top of the next. In Word Perfect, select the text that must remain together and click "Format" and "Keep Text Together" and "Widows and Orphans" to specify how many lines many be left at the bottom or top of a page.
B7.10 insert automated features (Guided)	B7.10 A date and/or time code may be inserted in a document so that the current date and/or time is obtained from the computer system. The folder and file name of a document (and other information) may be automatically placed on that document through the use of a "file stamp". Select "Insert" from the pull-down menu and "other" from the sub-menu.

Word Processing

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
Technology Lesson Plan:					
Poetry In Motion Outcomes B7.8, B7.10	**4.3, 9.1, 9.2, 9.3, 10.3**				
Investigate a Mystery	4.1, 5.2, 6.3, 10.5	F7	211-2		
B7.5 The assignment will determine formatting requirements. Specify criteria for assignments. For example, formatting for a poem will differ from that of a report.					
B7.6 Provide document format examplars to guide the creation of works. Peer edit work to ensure that created document conforms to the exemplar.					
B7.8 Display data in a table. Borders may be turned off when this information is placed in a report so that the data will appear to belong to the body of the document.					
B7.9 Demonstrate how to insert headers, footers and page numbers. Explain why the "Keep Text Together" feature would be used. Set this feature to allow no less than two lines to appear alone at the top or bottom of a page.					
B7.10 Include page numbers and a header in multiple page documents.					

Multimedia

Students will be expected to:	***Instructional Considerations***
A8.1 apply planning strategies (Guided)	A8.1 Time devoted to pre-production planning with paper and pen or software tools(story boards, scripts, graphic organizing, brainstorming)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.
A8.2 create an age/grade appropriate slide show presentation that may contain one or more of the following objects (Independent)	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(text, graphics, images, animations, audio and video) using equipment available in schools.
A8.3 describe situations where streaming video and audio is appropriate (Guided)	A8.3 Multimedia files may be viewed by downloading or streaming them from the Internet. "Downloading" involves placing a hyperlink on a web site whereby the whole file is downloaded to the users computer before it becomes viewable. This may involve a long wait depending on the file size and line speed. "Streaming" allows the media to commence playing after partial download and is appropriate for very large files. There are several formats for the creation of streaming video (Windows Media Macromedia, Real Media, Quicktime, MPEG-4) Streaming is also used in the delivery of "live events" through web casting.
A8.4 create graphics, audio and video special effects (Awareness)	A8.4 Digital cameras have the capacity to create digital stills with special effects and short audio/video segments. Network software has the capacity to create animations and video clips (i.e. Paintshop Pro [Animation Shop], Corel Presentations, Movie Maker [XP]). The Internet contains a variety of online sites that allow users to create animated work.

Multimedia

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
Technology Lesson Plans : ***Create Own Slide Show - Heat Slide Show*** Outcomes A8.1, A8.3, A8.5, B8.2, B8.3			**112-8, 113-4, 210-2, 211-2, 308-3**		
Aboriginal Empowerment.	9.3, 10.3			7.1.1, 7.3.1, 7.3.2, 7.4.1, 7.4.4, 7.7.1	
A8.1 Use concept mapping software to aid in brainstorming or to prepare a rough storyboard sequence. Use rough hand-drawn comic-strip-type sketches to plan detailed shot and scene sequences. Individuals tend to want to skip over the planning stage but it is essential to the success of this assignment. Present plan for approval. A8.2 Create a slideshow to showcase multimedia content. This project should include at least two of the following elements: digital image, audio file, animated special effect, video, or a link to an external resource on the computer or Internet. A8.3 Visit the Department of Veteran Affairs website (http://www.vac-acc.gc.ca/remembers/) to view streaming videos of Canadian War Verteran accounts. Visit the Kidzonline multimedia and lesson plan resource (http://www.kidzonline.com) to view streaming and downloadable video resources.					

Multimedia

Students will be expected to:	***Instructional Considerations***
A8.5 select appropriate medium to convey a message (Guided)	A8.5 Select a medium to convey the message. Text is used to present a poem. Audio would be appropriate for providing emphasis or a dialect for the poem. Still images would be added to the text or the audio to provide a particular atmosphere. Video may be used to relate the poem to real life situations. Animation may be used to illustrate the poem in ways that would be impossible in real life. Not only must the medium(file size, formats, storage location) be considered, but also the intended audience.
B8.2 use multimedia creation and editing tools (Guided)	B8.2 Hardware resources such as digital cameras (that can capture still as well as video/audio footage), video cameras, web cams, microphones,and scanners are reasonably priced and widely available. Graphics programs allow the user to capture screen shots from the computer monitor, edit digital pictures, create animations and combine graphics and text. Video/audio editing capability is available on Windows XP computers. Home computer systems are now being marketed with multimedia features and software that appeal to the multimedia consumer.
B8.3 convert file formats for a particular application (Guided)	B8.3 Multimedia technologies have been developed by a number of companies and have evolved over time. Therefore, there is not one file format or standard for the different multimedia components. Software utilities allow for conversion of the more widely used applications from one format to another(i.e: .jpg, .gif, .bmp, .mp3, .wav, .avi, .mpeg, etc). This allows users to view multimedia content that has been created in another format with their specific software and hardware configuration. File formats may need to be converted to allow for presentation in a particular media such as on a web site or on a CD/DVD.
B8.4 use proper tools and procedures to enhance product quality (Awareness)	B8.4 Skill in multimedia development will continue to evolve as equipment becomes available at lower grade levels and in the home. The experiences of individual group members (and expertise of other colleagues in the school) must be taken full advantage of to create quality multimedia content.

Multimedia

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
A8.5 Justify the medium chosen for multimedia content. B8.2 Review one or more of the following multimedia creation tools to support an activity. Use Paintshop Pro to capture a screen image. A microphone may be used to create a 30 second audio file with Inspiration 7.5. Scan a source document, modifying dimensions. Take a digital photograph or video and edit it. B8.3 Completed media must be compatible with the equipment available to the intended audience. Test media early in project cycle to anticipate any challenges. B8.4 Encourage alternative assignment options that promote creativity and problem solving through the use of "new media".					

Database

Students will be expected to:	***Instructional Considerations***
A9.2 perform searches on a database file using logical and Boolean operators (Guided)	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).
A9.3 design/plan a database to use as a method of organizing information (Guided)	A9.3 When planning a database keep in mind the type of information that is to be extracted when the database is complete. The creation of the fields and the type of fields used will influence the information that can be extracted later. For example in the creation of an address book, fields would be created for a name, address, telephone number, and email address. Fields must be included which will allow for the entry of such information. It is also important to create fields that contain only one bit of information rather than several. For example, should the user want to sort the records by last name s/he will need two fields for the name - first and last name.
A9.4 create and modify a form (Guided)	A9.4 Appleworks adds fields to a form and allows the user to specify the type of data that will be placed in a particular field i.e. text, number, date, calculation, etc. Error checking routines may be built into the field by selecting “pop up menu”, “radio button” or “check box” allowing the user to select only from within a data range. Data may be entered into the database using the “form view” or “list view” from the layout pull-down menu after the fields have been created. The form may be customized under the “layout” menu by moving the field labels and names. Graphics and colour may be added to the form or fields. Fields may be added or deleted from a form at any time. Should a field be added to an established database, the user must revisit all records to update the data for the new field. 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 occurrance 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.

Database

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
Technology Lesson Plans:					
Student Census Outcomes A9.3, A9.4, A9.5, B9.2, B9.3, B9.4, B9.5		**F1, F2, F3, F7**			
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)	5.2, 9.2, 10.3, 10.5		208-8, 209-4, 209-5, 210-2	7.2.3	
A9.3 A database provides a way to record information about a subject i.e. CD or hockey card collection. Brainstorm possible fields. Choose that will be required to provide useful information about a collection. Identify the field types necessary.					
A9.4 Create the data input form for the activity in A9.3. Add a graphic relating to the selected activity, a title such as "My CD Collection" 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.: catalogue number					

Database

Students will be expected to:	***Instructional Considerations***
A9.4 create and modify a form ... continued (Guided)	A9.4 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).
A9.5 use databases to analyze data and look for trends (Guided)	A9.5 A school student management system (Trevlac) is an example of a large database. Users may obtain various pieces of information from this tool. For instance, attendance reports may be produced by number of absentees such as 5 days, 10 days, etc. or by class. The database may also provide the classes that each student is enrolled in, the classes taught by a particular teacher or the individual students taught by a teacher. Databases created in Appleworks use similar 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)
B9.2 create fields and with variable field types and properties (Guided)	B9.2 Appleworks allows the user to specify the type of data that will be placed in a particular field i.e. text, number, date, calculation, etc. The label text for a field i.e. font, colour, size and for the input box may be changed separately through the "layout" screen.
B9.3 restructure database (Guided)	B9.3 Fields may be added or deleted from a form at any time. Should a field be added to an established database, the user must revisit all records to update the data for the new field. Should a field be deleted all associated data for that field stored in the database is erased.
B9.4 sort records alphabetically, numerically and by multiple fields (Guided)	B9.4 In the address book example, the records may be sorted by "last name" as key one. Should two people have the same last names a second key "first name" sort can be specified. For a numeric sort to be accurate, the field type must be defined as numeric when it was created.

Database

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
A9.5 Refer to the lesson plan "Student Census". 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. B9.2 Assign field types to match the data that will be placed in the fields i.e. First Name, Date of Birth, Age. 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 lesson plan database ie: e-mail address; Remove a 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 age, last name, first name and middle initial. sort the data by city, favorite activity, last name.					

Database

Students will be expected to:	***Instructional Considerations***
B9.5 create a report from the entire database or selected records (Guided)	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.
E9.1 examine functions and implications of database driven websites (Guided)	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.

Database

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
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 - city, favorite activity and last name. From the pull-down menu select "Layout" - "New Layout" - "Columnar Report". Enter a name for the report i.e. Favorite Activity. Set the field order as city, favorite activity and last name. To sort the records for this report select "Organize" - "Sort Records". Move the city, favorite activity and last name field names into the sort order box and specify ascending or descending. Click OK. Observe progress and check that records are in specified sort order. 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 i.e. key the name of the community where you live. Only the records from that community will be displayed. E9.1 Visit an online business site such as Veseys Seeds (http://www.veseys.com) and search for a product. Identify the features that are associated with a database application. Examine the information requested from online customers. Debate if all pieces of information are justified.					

Telecommunications

Students will be expected to:	***Instructional Considerations***
A10.1 collaborate using software (Guided)	A10.1 Within the classroom, collaborative tools(i.e. 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. 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. 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.
B10.3 manage mail folders (Guided)	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.
B10.4 manage address books (Guided)	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.
B10.5 use distribution lists (Guided)	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.

Telecommunications

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
Technology Lesson Plans:					
Sherlock Holmes Outcomes A10.1, B10.3, B10.4, B10.5, B10.6, B10.7, B10.8	**1.1, 1.2, 9.5, 10.3**				
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.			113-7, 210-16, 211-2, 211-4, 211-5	7.2.2, 7.3.4, 7.4.3	
B10.3 Create folders to organize received email. Transfer mail messages into created folders.					
B10.4 Create an address book for class-mates. 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 indentifiable 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

Students will be expected to:	***Instructional Considerations***
B10.6 send and open attachments (Guided)	B10.6 Files may be sent "attached" along with an email. There are file size restrictions on attachments sent through providers such as Sympatico. Should an attachment exceed the limit the email will be undeliverable. The school email system scans and filters email for viruses. Any suspect files will be filtered and deleted. Program and other files with particular extensions are automatically filtered. (For a complete listing of these file extensions please see http://www.edu.pe.ca/sats/standards/update/blocked_attachments.pdf) Emails with attachments that are stored in the inbox or a mail folder take up mailbox storage space. Attachments should be saved to a local drive location and the email deleted.
B10.7 create signatures (Guided)	B10.7 A signature is an automatic message that is placed at the bottom of a sent email. In business, signature information will often contain the company name, individuals' name, phone/cell/ fax numbers, email address, mailing address, web site URL, etc.
B10.8 apply filters and rules (Guided)	B10.8 A rule defines a set of conditions and actions to be performed when an email meets those conditions. For example, email from a particular source may be identified in a rule and sent direclty to the trash or an particular email folder. (instead of being displayed in the inbox). A filter allows for the searching of an email by a number of criteria. This is useful when a large number of emails exist or the user forgets in which folder the email was placed.

Telecommunications

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
B10.6 Files may be sent "attached" along with an email. There are file size restrictions on attachments sent through providers such as Sympatico. Should an attachment exceed the limit the email will be undeliverable. The school email system scans and filters email for viruses. Any suspect files will be filtered and deleted. Program and other files with particular extensions are automatically filtered. (For a complete listing of these file extensions please see http://www.edu.pe.ca/sats/standards/update/blocked_attachments.pdf) Emails with attachments that are stored in the inbox or a mail folder take up mailbox storage space. Attachments should be saved to a local drive location and the email deleted. B10.7 A signature is an automatic message that is placed at the bottom of a sent email. In business, signature information will often contain the company name, individuals' name, phone/cell/fax numbers, email address, mailing address, web site URL, etc. B10.8 Create an email folder called "Rules". Set up a rule to automatically redirect mail from a classmate to this folder. To utilitize the filter feature email messages must be present. Discuss the usefulness of this feature.					

Telecommunications

Students will be expected to:	***Instructional Considerations***
B10.9 use calendar features such as appointments, tasks, reminder notes/ memos (Awareness)	B10.9 Encourage users to maintain the dates for tests, assignments, meetings and upcoming events in their electronic calendars. Some calendars allow appointments, tasks and reminder notes to be sent to others. The receiving person must "accept" or "reject" this electronic communications.
B10.10 use the organizational features of collaborative tools such as scheduling, calendaring, and interactive syllabus (Awareness)	B10.10 Online content management systems rely on specific instructions linking content to activities and completion dates (interactive syllabus). These tools ensure that activities are performed in sequence and are not overlooked. They allow larger activities to be subdivided into smaller, manageable parts.

Telecommunications

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
B10.9 Model the use of appointments, tasks or reminder notes. These may be sent to others. B10.10 Ensure that timelines and instructions for assignment are complete. Post assignments / homework on the school web page. E-mail assignments/instructions (.pdf files are useful for attachments) Carbon copy parents.					

Web Authoring

Students will be expected to:	***Instructional Considerations***
A11.1 identify web page creation possibilities (Independent)	A11.1 Many opportunities exist within the grade seven 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 Intermediate school websites contain numerous completed activities that may be used as examples.
A11.2 create appropriate text and image file formats (Guided)	A11.2 Use a maximum of two fonts. Use one font for text passages and one for accents such as titles, buttons,etc. Use common fonts on web pages as speciality fonts are replaced when viewed on the users' computer. Designers can provide the font for download, however, they must be aware of copyright for the fonts. Most people will leave a site rather than download the font as it takes time and they often are concerned about downloading files. A second consideration is that each installed font will consume computer memory. Gif, .png and .jpeg are the main graphics file formats for web publishing. To reduce download times, use the smallest graphic size possible (file size not physical size) Use .jpeg for graphics (photographs, art, images with shadows and shading). Use .gif for graphics with a few colours and transparency.

Web Authoring

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	***Math***	***Science***	***Social Studies***	***Other***
Technology Lesson Plan:					
Aboriginal Empowerment Webpage Outcomes A11.2, B11.2, B11.3, B11.6				**7.1.1, 7.3.1, 7.4.1, 7.4.4, 7.7.1**	
Travel Agency	3.2, 3.3, 7.1	F7	112-8,112-9, 113-11	7.2.3	
A11.1 Browse the Internet for specific examples of webpages that may be used as guides. School/educational websites may be of value. Use a web page editor to create a template to display student creations. Content may include text, scanned drawings, graphics or multimedia content. A11.2 Identify criteria and create a rubric or checklist to critique sites for effective/non-effective use of media. Save a graphic file in various formats and note the size vs image quality. The image property dialogue box of some software programs provides information on file size. Web editors will give an estimated download time for entire web pages. Create text in a graphics program, such as Paintshop Pro, and save as a .gif file. Insert this into a web editor for use as a heading. Save as an .html file and view in a browser.					

Web Authoring

Students will be expected to:	***Instructional Considerations***
A11.3 create an interactive webpage (Awareness)	A11.3 Interactive components of webpages require databases and server side scripting which are unavailable to students. However, there are various online companies that offer free services that may be incorporated into a static website. i.e. polls, surveys, web counters, guest books, etc.
B11.1 examine html tags (Awareness)	B11.1 While web editors are easy to use and automate many web page construction tasks there are times when a knowledge of html coding is helpful for trouble shooting and customizing pages. Web page editors allow pages to be displayed in webpage and html views.
B11.2 create a basic web page using a WYSIWYG editor (Guided)	B11.2 "What you see is what you get" web editors are much like a word processor that will display to the screen exactly the way it is keyed. They automate many functions, such as linking, inserting graphics and making tables, which results in huge time savings.
B11.3 indicate where file or page is hosted (Guided)	B11.3 The anatomy of a URL demonstrates the entire site structure. The initial section after http:// is the server address (eg. www.edu.pe.ca) Folders and subfolders are separated by a backslash (www.edu.pe .ca/ journeyon/). Individual files finish the URL with a file extension (eg. .htm, .asp, .php, .jpg, .avi, etc.) www.edu.pe.ca/journeyon/pd.htm Files are initially created and the structure is maintained locally on the users' computer system. This structure is transferred to a web file server. The web file server is owned by the department of education, but they pay a fee to the Internet Service Provider (ISP) to connect to the Internet.

Web Authoring

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
A11.3 Search for free interactive online tools using such terms as *online polls interactive web page tools* to find online companies providing these services. Incorporate the required coding necessary to embed the selected interactive tool within the web page. B11.1 Web editors allow the user to view the html coding. Create a table and view the resulting code. Discuss the characteristics of html coding. Locate further information on particular .html tags by referring to an online source or tutorial. International standards for web page development can be found on the World Wide Web Consortium (W3C) page at http://www.w3c.org B11.2 Create a basic webpage relating to a curriculum topic. Provide criteria. B11.3 Draw the file structure, using Inspiration 7.5, for the following URL: http://www.edu.pe.ca/ journeyon/ pro_d_pages/frontpage/ class_webpage_exercise.htm The structure of a web URL is [server], [folder], [subfolder], [file]. The server address (www.edu.pe.ca) would be found at the top level of an organizational chart structure.					

Web Authoring

Students will be expected to:	***Instructional Considerations***
B11.4 apply website file management and transfer files to and from web servers, edit pages online (Awareness)	B11.4 Web Site Structure consists of one main images/graphics folder. In this folder images which are re-used throughout the website are stored. The main file, which should always reside in the root folder, will be named index.htm. Subfolders are built from a category, department or project. Subfolders should contain separate folders for graphics, video or audio. Files are initially created and the structure is maintained locally on the users' computer system. This structure is transferred to a file server by using File Transfer Protocol (FTP). Some web page editors allow the user to edit files directly on the remote server.
B11.5 use special features (Awareness)	B11.5 Image maps are a combination of image and HTML coding. The code creates "hot spots" on the image which may be linked to files or web pages. Often hot spots are used as navigation elements in web pages. Should this be done, the designer must include an alternative navigation bar in case the image map does not work with a particular browser. Large images can be "sliced" into smaller portions held together by an invisible table. Each part of the image loads at the same time and encourages the visitor to remain as the image is revealed. Elements of the image can be used to link to files, webpages, popups, etc. similar to a hot spot. A Cascading Style Sheet may be defined and placed in the header of an HTML document to automatically apply formatting to the page ie. spacing, font, colour, etc. Frames break the page into areas that load from separate HTML files. A disadvantage of using frames is that a page cannot be printed as displayed. Rollovers and mouseovers may be programmed using script or automatically through the use of a web editor such as Front Page or Dreamweaver. Layering techniques are used to overlap images or other elements on a web page.

Web Authoring

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
B11.4 General File Management Skill Review. Demonstrate how to store a file, copy, paste, move, and delete. Brainstorm the content for a webpage project. Outline the main ideas within a written down file structure consisting of appropriate files, names, and subfolders. B11.5 View examples of websites that have a combination of sliced images and hot spots. Determine where the hot spots are and where the slices are. Critique a web site created with hot spots: Recognize and describe the hot spots. Identify the function of the hot spot. Does the site provide a text based navigation? Evaluate the effectivenesss of these special features. Examples of special graphic features may often be found in news, weather, arts and government sponsored websites. Here are some current examples: Royal Academy of Arts: www.royalacademy.org.uk/ CBC news: www.cbc.ca/local/ Weather: www.weatheroffice.ec.gc.ca/canada_e.html					

Web Authoring

Students will be expected to:	***Instructional Considerations***
B11.6 embed objects (Guided)	B11.6 An embedded object is multimedia content or simply a file (.pdf) created with one application and placed into a webpage with HTML coding. Embedding the object, ensures that the object retains its original format. Video that is included on a site must include information about its size so that users can decide whether or not they want to wait the time required to view the media. Provide a link to a plugin source for a downloadable file (e.g. Quicktime). Never incorporate the automatic downloading of a video/audio file into the loading of a page. Audio must be produced on the best quality sound equipment the user can obtain. Reeves and Nass (1996) found that users will tolerate poor video but are very affected by poor audio. Care must be taken not to overload the user with competing visual and audio information. People have difficulty reading text and listening to unrelated audio at the same time.

Web Authoring

Teaching Suggestions, Activities and Assessment	*Links to Specific Curriculum Outcomes*				
	Language Arts	*Math*	*Science*	*Social Studies*	*Other*
B11.6 Search for free java applets from the Internet for displaying stylized text, images, and video. Download the selected .zip file, uncompress and insert original works. Embed or link audio, video, animation or data files (.pdf, .wpd, etc.). Remember to describe the contents of the linked files as well as their file size.					

Lesson Plan: Plot The Points

Outcomes

Technology: A6.1, B6.2, B6.4, B6.5

Math: F5, F6, F7

Language Arts: 9.2

Science: 209-3, 209-4, 210-2, 210-12, 211-2

Activity

In this activity students will plot data which they will use to generate a scatter plot graph.

Resources

- Appleworks Spreadsheet
- Files: ptsdata.cwk, ptsgraph.cwk

Instructions

In this activity students will plot the data which compares the length of time it takes them to run 100 metres to the distance that they can achieve doing the long jump. They will plot this data on a graph. Imaginary data for this activity has been provided below on the assumption that the faster a person can run, the further this person will be able to jump in the long jump. A teacher could actually do this activity with the class to gather real data.

1. **Creating or Retrieving the Data**

Option 1: Manual Data Entry

Enter the following data into a spreadsheet in this format. (See directions for Appleworks on the following page)

Students	100m (sec)	Long Jump(m)
1	11	3.5
2	13	2.7
3	14	2.5
4	12	3.7
5	12.5	3.7
6	16	1.9
7	14	2.0
8	15	1.5
9	15	1.5
10	11.5	3.0
11	10.5	3.8
12	15	1.9
13	16	1.4
14	12	1.6
15	13.5	2.5
16	12	3.4
17	17	1.7
18	15	1.6
19	11	3.2
20	12	3.8

Lesson Plan: Plot The Points

Other Activities

• Further graphing ideas where students must choose how to setup the data in a spreadsheet and then choose the best graph to display this data, can be found in the APEF Mathematics Curriculum guides for the various Intermediate grade levels.

Grade 7: Page 7-115 F7.1 to F7.10

Instructions *(continued)*

To Enter Option 1 Data in AppleWorks:

- Open AppleWorks.
- In the **New Document** window click on **Spreadsheet**. (If the **New Document** window does not appear, click on **File / New**).
- Cell A1 will be outlined which means that it is ready for data.
- Using the cursor movement keys (arrows), move to the necessary cells and enter the information which appears to the left, including the titles.
- **To enter data** - go to the proper cell and then click in the **Data Entry** window. (This is the white space just below the menu bar). Type your data and hit the **Enter** key. The data will appear in the cell that was selected.
- Enter the data for the other cells, using the cursor movement keys (arrows) to go to the required cells when necessary.
- To edit entries, click on the cell to be edited, make the change in the data entry window and hit **Enter**.
- Save your file with the name **ptsdata.cwk**

Option 2: File with Data Already Entered

To do this in AppleWorks:

• Click on **File / Open**.

• Make sure you are in the g: drive.

• Click on the file **ptsdata.cwk** and click on OK.

2. Creating the Graph

Create a graph which plots this data. To do this in AppleWorks follow the instructions below:

- Select **Column B and C** (select means to click and drag with the mouse).
- With the appropriate data selected, click on **Options / Make Chart...**
- In the **Chart Options** window, choose either **Bar, Scatter, Pie or X / Y Scatter** graph and click on **OK**.
- A graph will appear on the screen. It is a graphic object and it is now selected because there are four small black boxes (handles) surrounding it.
  - To **size** the graph, click directly on one of the black handles and drag.
  - To **move** the graph, click anywhere on the graph and drag the mouse.
  - To **delete** the graph, click anywhere on the graph and hit the delete key.
- At this point students will have to decide which graph best depicts the data.
- To do this students will have to create one graph, delete this graph and then re-select the data and create another graph. Once they have seen the various graphs they can decide which one best suits their purposes.

Lesson Plan: Introduction To Spreadsheets

Outcomes

Technology A6.2, B6.2, B6.4, B6.5

Math A11, C1

Activity

The purpose of this activity is to learn the skills needed to create a spreadsheet. Students can practice the skills of entering data and setting up formulas.

Resources

- Appleworks spreadsheets
- List of data

Instructions

- Open Appleworks and select spreadsheet. In cell A1 key "Homework". In cell B1 key "Classwork". In cell C1 key "Quiz". In cell D1 key "Test".
- Enter 8 pieces of data for each column. Make all grades of a similar value (i.e. out of /10)
- Under the "Homework" column, select the cell A10 and enter the formula =Sum(A2..A9) to total the column.
- Repeat for each column using appropriate letters in formulas.
- Find the average of each column using the formula =Average(A2..A9) in cell 11A
- Repeat for each column using appropriate letters in formulas.
- Find the overall average by averaging the Totals row and inserting the formula =Average(A10..D10) in cell E10

Lesson Plan: Student Census

Outcomes

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

Math F1, F2, F3, F7

Language Arts 5.2, 9.2, 10.3, 10.5

Science 208-8, 209-4, 209-5, 210-2

Social Studies 7.2.3

Activity

In this lesson, students will collect data from their peers and store the information in a database. As students manage the information they should come to realize the usefulness of a database as a tool to manage large amounts of information in an efficient and accurate manner. Teachers should allow the students to construct the database from scratch. Teachers should note that if this activity is done in Grade 7 and then again in Grade 8 or 9, the Census Information Form at the back of the lesson should be changed, or students should be made to collect other data of some kind altogether. In this way the activity will be modified for use at all Intermediate grade levels.

Resources

- E-Mail
- Class list of e-mail addresses
- Files:
  Student file: censstud.cwk
  Teacher file: censteac.cwk (Contains data for 10 imaginary students)
- Each student should have at least 25 paper copies of the Student Census sheet found on the last page of this lesson plan

Instructions

Vast amounts of information can be very difficult to manage and analyze using traditional methods. With the advent of microcomputers and software programs (databases), this task can be greatly simplified and less time consuming. Students should quickly realise the usefulness of databases once they start to work with the data they have collected. Once students have mastered the basic concepts of data management, they should start to recognise applications in the real world. In this lesson we will have a look at collecting student information and how it can be entered, stored, sorted, analyzed, and presented.

Teachers should make a copy of the form onto which the students can record their information. Students should enter information for a minimum of 25 people. These can be people in their class but would not have to be limited to classmates. Students can record their information on the paper forms and then enter the information into the database as they have access to the computer lab.
Please see the last page of this lesson plan for a copy of this form for students.
Have students create the database from scratch and then enter information.

Database fields are shown on the next page.

Lesson Plan: Student Census

Instructions *(continued)*

First Name
Middle Name
Last Name
Date of Birth (date field)
Age (number field)
Were you born in Canada?
Were you born in PEI?
Street Address
City
Postal Code
Number of people who live at this address (number)
Number of brothers (number)
Number of sisters (number)
Right or left handed
Name of Elementary School attended
How do you usually come to school?
Favorite subject
Favorite activity

Database Creation in AppleWorks

- Open AppleWorks and click on **File / New** (Cancel the **Welcome** window if it appears).
- In the **New Document** window, click on **Database**.
- In the **Name** field of the **Define Fields** window, enter the name for the first field and then press **Enter**.
- Repeat this step for each of the field names listed to the left. (All fields are text fields except for the fields with the brackets after them. In order to carry out effective searches etc., later, the computer must know what type of data it is sorting or searching. Thus the need for different field types. For the fields with brackets, make sure to make the appropriate choice of field type before hitting **Enter**.

Once field names have been entered, several of the field names have to be modified in order to make data entry easier and more consistent.

eg: For the field "Were you born in Canada?" the answer will be either yes or no. This field can be set up in such a way that the user who enters the data can be given a choice of either yes or no and these will be the only possibilities for this field. Using this method, only this specific data or key words will be entered into this field and this will make subsequent searching for specific information much simpler.

Follow the instructions that follow to modify the fields in the suggested way.

Lesson Plan: Student Census

Instructions *(continued)*

- Click on **Layout / Define fields**.
- In the **Define fields** window click on the field to be modified. (The first one to be modified is "Were you born in Canada?")
- Click on the **Options** button.
- In the **Auto Entry** window look for the **Input list** area. In this area click a check mark for both options. The first check box allows you to create a drop down list of data options for that field and the second check box limits the data options to only the ones that you put in the list.
- Click on the **Edit List...** option.
- In the **Edit Value** List type **Yes** and click on **Create** and then type **No** and click on **Create**.
- Click on **Done** and then on **OK** and then on **Done**. This will bring you back to the actual database. To verify the changes that you made, click on the empty space where you will enter data for the "Were you born in Canada field". As soon as you click on this you will have a drop down box with a choice of Yes or No. By double clicking one of the options you enter that data into the field and you go directly to the next field.
- To make modifications to this drop down list or to create other drop down lists for other fields, repeat the above instructions.

Fields which can have a drop down list and data for the drop down list:

Were you born in Canada?.....Yes and No
Were you born in PEI?.....Yes and No
Province.....AB, BC, MB, NB, NF, NT, NS, ON, PE, QC, SK, YT
Right or left handed.....Right handed and Left handed
Name of Elementary School attended..... See Note below **

**This is a partial list of all Island Elementary Schools. Have the students use these names to create a partial drop down list for this field. Once they have the hang of how to create a drop down list, use the student file called censstud.cwk This has all the school names already entered.
Alberton Elementary
Amherst Cove Consolidated
Athena Consolidated
Belfast Consolidated
Bloomfield Elementary
Cardigan Consolidated
Central Queens Elementary

How do you usually come to school?..... Car, bus, walk, bicycle, other
Favorite subject?..... Language Arts, Mathematics, Science, Social Studies, Physical Education, Health, Music, Art, French
Favorite Activity?..... Sports, watching TV, reading, riding my bike, travelling

Lesson Plan: Student Census

Instructions *(continued)*

Once students have completed the creation of the database , they can make use of the file called **censstud.cwk** This is a file with the database already created. Students can use the paper **Student Census** forms which they used earlier to collect data, to enter the data into the data base. To enter data into the data base follow the instructions below:

Entering Data into the Database

- Click on the first field where the data will be entered.
  Note: If the entire record turns black, click where you think the empty field outline is. When you find it the fields will appear. Another way to eliminate the black is to hold the CTRL key and click anywhere.
- Start typing the data just as in a word processor.
- Use **Tab** to move to the next field. (Enter will not work as this only increases the size of the field).
- In a field with a drop down box, double click on the entry of choice.
- To make a correction, click on the field in question, type the corrections and hit tab. To delete the entry, select the entire entry and hit the **Delete** key.
- When the all fields are completed click on **Edit / New Record** (Shortcut here is **CTRL-R**) This will give you an empty record and you can start the second record entry.
- Once you have several records you can navigate from record to record using the small booklet icon at the top left of the screen. Click on the top page and you move up one record. The bottom page moves you down one record. You can also click and drag on the slider to move up or down in the database. The number of records and the current record are displayed to the bottom of this booklet icon.

Once students have entered data records, there are many different ways for the students to view and manipulate the data. For the purposes of this lesson plan we will organize the data in one particular way. Students will then be able to manipulate the data in other ways to respond to questions about the data.

Let's say that the teacher wants to know how many people have more than 3 people living at that particular address and the teacher wants to have these people listed in alphabetical order by last name. To isolate this information and display it properly, follow the instructions to the right.

For more information on data manipulation using AppleWorks database, please visit the **Journey On** web page at :
http://www.edu.pe.ca/journeyon/pro_d_pages/appleworks.htm

Lesson Plan: Student Census

Instructions *(continued)*

Displaying, Sorting and Filtering Data

Creating a New Layout

We will first create a new layout in which we will show only the required fields (First Name, Last Name and Number of people who live at this address).

- Click on **Layout / New Layout...**
- In the **New Layout** window first give the layout a name. This name should reflect what the layout will present. Call it **>3 people at address**. In the **Type** section click on **Columnar Report** and click on **OK**.
- In the **Set Field Order** window, click on the **First Name** field and then on **Move**, then click on **Last Name** and click on **Move**, and finally, click on **Number of people who live at this address** and click on **Move** once more.
- Click on **OK** when completed.

Sorting the Layout

Let's say that we want the records sorted in alphabetical order by last name.

- Click on **Organize / Sort Records...**.
- In the **Sort Records** window, click on **Last Name** and then on **Move** and then on **OK**
- The records will now be sorted by last name.

Filtering the Layout

Now we want to filter for only those records which have more than 3 people living at that address.

- Click on **Layout / Find**
- In the field for "Number of people at this address" type **>3** to indicate all records with a number greater than 3 in this field.
- Click on the Find from **All** button to the left of the screen.
- All records with more than 3 in this field will appear.
- To show all records again, click on **Organize / Show all records**.

Lesson Plan: Student Census

Activity Suggestions

Have students answer the following questions by creating new layouts and then sorting and filtering the information in such a way as to find the appropriate information.

1. Create a layout which displays only the names of students (last name first) and organizes the names in alphabetical order by last name.

2. Create a layout which displays the names of the students (last name first) and also their age. Arrange the students from oldest to youngest.

3. Create a layout which displays the names of the students (last name first) and also their age. Filter students so you show only those students over certain ages. Eg: all students over 10 years of age, then over 12 years of age, etc.

4. Find all the students who were born in Canada. Arrange these students in alphabetical order by last name.

5. Find all students who were not born in Canada. Arrange these students in alphabetical order by last name.

7. Find all the students who were born in Prince Edward Island. Arrange these students in alphabetical order by last name.

8. Find all students who were not born in Prince Edward Island. Arrange these students in alphabetical order by last name.

9. Find all the students who live in the largest community in your school area. Arrange these students in alphabetical order by last name.

10. Find all the people who have more than 2 people living at their address.

11. Find all the people who have more than 2 people living at their address and who also have more than one brother.

12. Find all the people who walk to school and have Language Arts as their favorite subject.

13. Find all the people who are right handed.

14. Find all the people who are over 10 years of age and have sports as a favorite activity.

15. Develop other questions which can be answered using the database. What are some questions which you cannot answer using this database? How could you change the database to be able to answer these questions?

Lesson Plan: Student Census

Student Census Form

STUDENT CENSUS

Name _____
First Middle Last

Date of Birth _____ Age _____
Month Day Year

Were you born in Canada? (Check one) ☐ Yes ☐ No

Were you born in P.E.I.? (Check one) ☐ Yes ☐ No

Address _____

_____
City/Town/Community Province Postal Code

Number of people who live at this address? _____

Number of brothers _____ Number of sisters _____

Check one: ☐ Right-handed ☐ Left-handed

Name of elementary school(s) attended _____

How do you usually come to school? (Check one)

☐ car ☐ bus ☐ walk ☐ bicycle ☐ other

Circle your favorite subject:

Language Arts Mathematics Science Social Studies

Physical Education Health Music Art French

What is your favorite activity?

Sports Watching TV Reading Riding my bicycle

Traveling Other: _____

Lesson Plan: HEAT Slide Show

Outcomes

Technology A8.1, A8.3, A8.5, B8.2, B8.3

Science 112-8, 113-4, 210-2, 211-2, 308-3

Activity

In this activity students will plan and create a slide show which illustrates a concept related to the study of HEAT. Possible topics, procedures, web-links, and assessment strategies can be found in the Resources section below.

Resources

- Corel Presentations 9/Appleworks-Slideshow
- Inspiration 7.5
- Internet

The assessment rubric and the online research progress log are available at:
http://www.edu.pe.ca/journeyon/resources_pages/lesson_plans/Lesson_Plans_7-9/Heat/default.htm

A tutorial for Corel Presentation 9 and HEAT slideshow guidelines exist at
http://www.edu.pe.ca/journeyon/resources_pages/lesson_plans/Lesson_Plans_7-9/Heat/default.htm

Lesson Plan: Poetry In Motion

Outcomes

Technology B7.8, B7.10

Language Arts 4.3, 9.1, 9.2, 9.3, 10.3

Other Activities

• In addition to creating a poem in the wordprocessor, the teacher may want the students to present their poem orally in class.

• In addition to the oral presentation, students could do a presentation in AppleWorks/ Presentations 9 which would visually depict their poem. Images could be presented that would help explain, create a mood or simply enhance the message.

Activity

After researching and reading different types of poetry in class, students will produce a poem on the wordprocessor using some of the various formatting features to create different forms and effects.

Resources

- Word Perfect 9 or Appleworks Word Processor
- Internet

Instructions

Before permitting the students to write their own poetry, have them search the internet for various forms of poetry. Find examples of how the form affects the message that the author wishes to convey.

Have students choose a form or genre of poetry. Appleworks allows students to experiment with alignment, tabs, rulers, fonts, margins and indents. Word Perfect has such features as text art, in addtion to the features offered in Appleworks. Allow the students to create their poetry and manipulate it so that the form best conveys the message.

Tutorials on Appleworks and Corel Word Perfect may be found on the **Journey On** website at: **http://www.edu.pe.ca/journeyon/pd.htm**

Lesson Plan: A Fishy Tale

Outcomes

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

Science 109-1, 111-1, 111-2, 112-4, 112-7, 210-2

Math F2, F3, F7

Activity

In this activity, students will do a short research project on a particular species of Atlantic seafood and as part of the research they will do an internet search, record and graph information pertaining to commercial landings of that species of seafood for the years 1989 to 1998 for the provinces of Quebec, New Brunswick, Prince Edward Island, Nova Scotia and Newfoundland. They will cut and paste this information from a website into a AppleWorks spreadsheet. Once they have this information in the spreadsheet, they will create a graph to display the information. To complete the activity, students will be expected to give a short report on the species of seafood that they researched and to present their findings as to the amount of commercial landings of this seafood for the given time period.

Resources

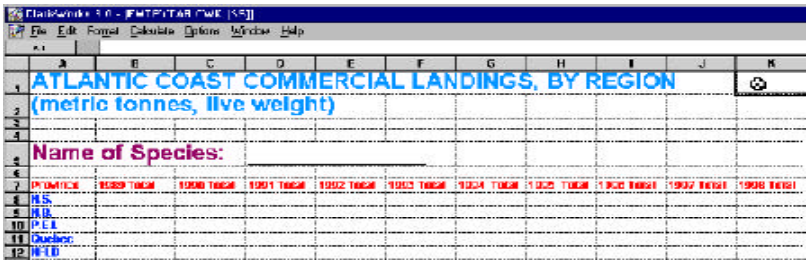
- Internet
- Appleworks Spreadsheet
- Applworks Activity File: emptytab.cwk

Instructions

Use a search engine such as Google (www.google.com) to find statistics for Canadian Commercial Fishery. The data should cover variety types of seafood species for a certain period of time.

It is suggested that students work individually or in groups of two. Each student or group will choose one species with which to work. Students will research this particular species to find information of interest. They are to prepare a short report on this species and hand the report in to the teacher or prepare a presentation where they present their research to their classmates.

As well as the research on one of the species, they are to create a spreadsheet which they can use to create a graph which displays the landing totals for the years 1989 to 1998. The teacher can allow the students to develop their own spreadsheet format to display the data. If needed, however, the teacher can distribute the following graphic of how the spreadsheet might look. Please see the following page for instructions on how to create the actual spreadsheet. Students should use the graphs in their report or presentation.



Lesson Plan: A Fishy Tale

Instructions *(continued)*

Students should first set up a spreadsheet to accommodate the data. Create your own format or follow the example that the teacher has provided. To create the spreadsheet follow the instructions below.

To Create the Table in AppleWorks

- Open AppleWorks.
- In the **New Document** window click on **Spreadsheet**. (If the **New Document** window does not appear, click on **File / New**)
- Cell A1 will be outlined which means that it is ready for data.
- Using the cursor movement keys move to the necessary cells and enter the necessary information.
- To enter information into the cells - go to the proper cell and then click in the **Data Entry window**.

(This is the white space just below the Menu bar) Type your text and hit the Enter key. The text will appear in the cell that was selected.
- Enter the text for the other cells, using the cursor movement keys to go to the required cells when necessary.
- To edit entries, click on the cell to be edited, make the change in the data entry window and hit **Enter**.
- Save your file with the name of the species which you are researching. For this example we will use **cod.cwk**

Once the spreadsheet has been created students can start to enter the data from the webpages. To do this follow the instructions to the right. Students will have to change the address in the URL field (only the year section) to access the various years of data. Students could also print out each table of the website so they have a printout of the statistics. This may make it easier for the students to enter the data into AppleWorks.

To Enter Data from the Webpages into the Spreadsheet

- Copy the totals for each province for the particular species that you are researching. Put the totals into the appropriate cells of your spreadsheet. This can be done manually or you can cut and paste from the table in the webpage to the spreadsheet in AppleWorks.
- To cut and paste, in the web page, select the data you wish to cut and paste. Click on **Edit / Copy**.
- Move to AppleWorks (See Hint below)
- Click in the cell where the data is to go and click on **Edit / Paste**.
- Repeat the above steps for each number that you have to cut and paste.

Lesson Plan: A Fishy Tale

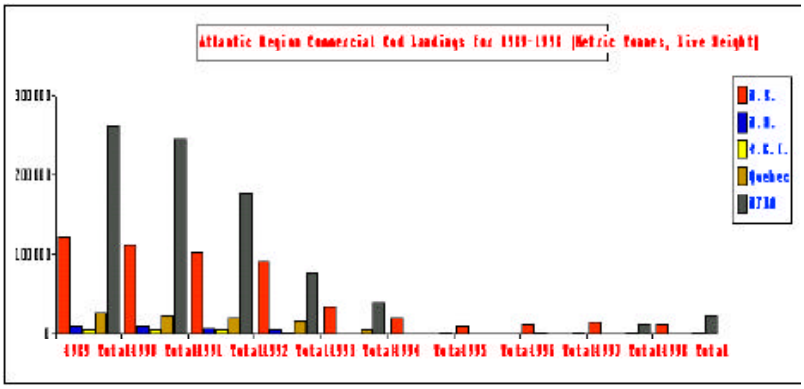
Instructions *(continued)*

Once the data is in the spreadsheet the students can display this data graphically.

To Display the Data Graphically in AppleWorks

- Select all the data numbers as well as the names of the provinces and the years. (Select means to click and drag with the mouse).
- With the appropriate data selected, click on Options/Make Chart...
- In the Chart Options window, choose the Bar graph if it is not already chosen and click on OK.
- A graph will appear on the screen. It is a graphic object and it is now selected because there are four small black boxes (handles) surrounding it. To enlarge the graph, click on one of the black boxes and drag the box until the graph is as large as you need.
- The title of the graph comes directly from the data in the spreadsheet and does not adequately reflect what is in the graph. To change the title do the following:

  - Double click on the graph.
  - In the Chart Options window click on Labels.
  - In the Title field change the name from whatever is displayed to Atlantic Region Commercial Cod Landings for 1989-1998 (Metric Tonnes, Live Weight). Please note we have used Cod as the example and you must replace Cod with the name of the species that you researched. The graph should look similar to the graphic below.



Lesson Plan: A Fishy Tale

Other Activities

• Instead of a report for the teacher, students can do a presentation to the rest of the class revealing the results of their research.

• Each student or group could create one slide with their spreadsheet graphic on the slide. All these slides could be saved as one file and then the students could each present their individual slide.

• Have a class discussion on the possibilities for the fluctuations in some of the numbers.

Instructions *(continued)*

The teacher may want students to find the totals of all the columns and rows, simply for information sake and also as a good spreadsheet exercise.

To Find the Totals of all the Columns and Rows

• Just to the left of the last column in the spreadsheet create a new column for totals by typing **Totals** as a heading. This column will give the totals for the entire time period covered by the spreadsheet.
• Just underneath the last row of data create a new row by typing totals as the heading. This row will give the totals for all provinces combined for each year.
• Click in the first cell of the totals column, in the case of our example **cell L8**.
• In the data entry window type the = sign to indicate a formula. Then click on each cell that is to be added together. An addition sign is automatically added between each cell address. The formula should look like the following: **=B8+C8+D8+E8+F8+G8+H8+I8+J8+K8** Hit **Enter** when finished and the total of all the numbers should appear in the cell. (Alternatively, the sum function can be used by clicking on **Edit/Paste sum** and then in the **Function Window** click on **Sum**. Replace the two variables with B8 and K8 separated by two dots. The formula should look like the following **=SUM(B8..K8)**.
• Once you have the formula for the first cell you can copy this formula to the other cells.
• Click once and release the mouse button on the cell which contains the formula.
• Now click again on this cell and drag down until all the cells that need a formula are selected.
• Click on **Calculate/Fill Down**. All the cells should have totals.
• Repeat the above steps for the totals row.

As a further exercise, the teacher may have the students create different graphs to display the same data. Have the students decide which graph best displays the information.

To Display Different Types of Graphs in AppleWorks.

• Select the data which is to be graphed.
• Click on **Options/Make Chart**.
• Choose one of the options from the **Chart Options** window. Click on **OK** and the chart will appear.
• Try other chart options and decide which graph best portrays the data in the spreadsheet.

Lesson Plan: Line Graphs

Outcomes

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

Math D4, F5, F6, F7

Science 209-3, 209-4, 210-2, 210-3, 210-12, 211-2

Social Studies 7.2.3

Activity

In this lesson, students will interpret graphs and create a story which explains the graph. They will develop a table of values for the graph and this table of values will be entered into a spreadsheet and the actual graph will be recreated. Students will change values in the table of values to see the effect that this change has on the graph and they will subsequently rewrite their stories to reflect the changes in the graph.

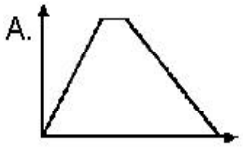
Resources

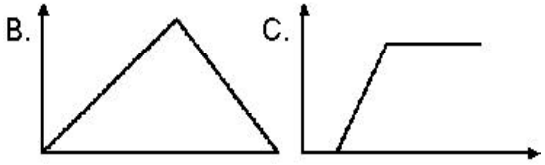
- Appleworks
- Appleworks Activity File: line1.cwk
- Graph paper

Instructions

Rates can easily be visually displayed using graphs. Interpretation of these graphs can give us the rates to which they are associated. Initially, to teach the concepts, teachers may wish to create several graphs and their corresponding tables of values manually. Once the students understand the concepts, however, it is much easier to use the spreadsheet to study graphs and their corresponding tables of values. In this lesson, students will consider various graphs and create the table of values represented by the graph.

For this exercise, an example will be used from the Atlantic Canada Mathematics Curriculum Guide, page 7-81. Exercise D4.4 shows three graphs which depict a walk taken by Mr. Jones on three different days. The students are asked to use the graphs to create a story which describes the graphs. Students are also asked to label the graphs. The graphs are recreated below and instructions are included on the following pages to help the students complete the exercise.





Lesson Plan: Line Graphs

Instructions *(continued)*

Let's assume that each graph represents the walk on any particular day so the three graphs represent three different walks. Letter A represents the walk on the first day.

Students should visually recreate this graph in their scribblers. Label the X axis as the time in minutes and the Y axis as the distance from the starting point in meters.

The X axis could have a total of 60 minutes in increments of 5 minutes The Y axis could have a total of 2000 meters in increments of 250 meters. Once the students have created the x and y axis, they should recreate the lines of the graph as accurately as possible. Once these lines have been placed on the graph, they can then create a table of values for the graph. The table would look very similar to the table below.

Time in minutes	Distance from starting point in meters
0	0
20	1750
30	1750
60	0

To Enter This Data in AppleWorks

- Open **AppleWorks**.
- In the **New Document** window click on **Spreadsheet**. (If the **New Document** window does not appear, click on File / New.)
- Cell A1 will be outlined which means that it is ready for data.
- Using the cursor movement keys move to the necessary cells and enter the information which appears in the table above. Enter the headings and the numbers.
- To enter data - go to the proper cell and then click in the **Data Entry**

(This is the white space just below the Menu bar.) Type your data and hit the **Enter** key. The data will appear in the cell that was selected.
- Enter the data for the other cells, using the cursor movement keys to go to the required cells when necessary.
- Save your file with the name **Line1.cwk**

Lesson Plan: Line Graphs

Instructions *(continued)*

Once students have the data entered, they can create a graph to display the data. To do this follow the instructions found below. Does the graph look like the original graph? If not, students should make changes to the table of values in order to make the graph appear like the original.

Create a Graph to Display Data

- Click once in the cell which is at the top left corner of the range that you want to select. Click and drag the mouse to the bottom right most cell of the range you want. All the cells in this range should now be black. This means they are selected. (The first one is also selected even though there is only an outline around it.)
- Click on **Options / Make Chart...**
- In the **Chart Options** window click on **X / Y Line** chart and then click **OK**.
- The line chart will appear.
- This chart is a graphic object. The small black boxes in the corners mean the graphic is selected. When it is selected you can:
  - move the graphic by clicking and dragging the mouse anywhere on the graphic
  - size the graphic by clicking and dragging on one of the black boxes in the corners. This may be necessary in order to accurately see all the numbers on each axis
  - delete the graph by hitting **delete** on the keyboard.

Students can also properly label the graph and make changes to the legend.

To Label the Graph in AppleWorks

- Double click the graph and the **Chart Options** window will appear.
- Click on **Labels**. In the **Title** field enter a title such as **Distance** vs **Time graph** or **First Day Walk.** Click on **OK**.

Lesson Plan: Line Graphs

Other Activities

• Teachers are encouraged to let students experiment with exercises. Exercises D4.1, D4.2, and D4.3 on Page 7-81 in the grade 7 math curriculum guide are similar exercises that the students could do with a spreadsheet.

• Let the students create their own graphs and the write stories about the graph that they just created. Some examples of stories they could work on:

• Number of car accidents each month over a period of one year. (Hint: The number of accidents goes up during the winter months.)

• Amount of soft drink consumed each month over a period of one year.

• Number of blue jeans purchased each month over a period of one year.

• Number of Music CDs purchased each month over a period of one year.

Instructions *(continued)*

Students can also make changes to the x and y axis to better reflect the increments suggested earlier. Follow the instructions to the right to do this. Students should now be able to write a paragraph about Mr. Jones first day walk. They should be able to answer questions such as: Did he walk at a constant pace? Did he take any rests? Students could also play with the numbers. For example change the number 20 in the Time in Minutes column to 10. How does this affect the graph? Change the story to reflect this change. (If the graph is on the screen it will change as soon as the number is changed. If the graph was deleted, however, then it will have to be recreated to reflect the change in the data.)

To Make Changes to the Step Size on the X and Y Axis

- Double click the graph. The **Chart Options** window will appear.
- Click on the **Axes** button.
- In the axes window make sure to select the axis with which we wish to function. In this case it is the X axis which we wish to modify.
- Students can experiment with the various options here but we are concerned especially with the options at the bottom of the window.
- For the **minimum** option enter 0.
- For the **maximum** option enter 60.
- For the **step size**, enter **5**.
- Omit the last field.
- Click on **OK**.
- In order for the increments to appear properly it may be necessary to size the graphic. Please see instructions on the previous page.
- The Y axis can be changed in the same way.

Students should recreate, in the same way, the other two graphs in this exercise. Write a story for these graphs as well. Play with the numbers and make the necessary changes to the stories which result from the changes.

Lesson Plan: Investigate A Mystery

Outcomes

Technology A3.2, A3.3, C3.1, E3.1
Language Arts 4.1 (guide, pg. 29), 5.2 (guide, pg.30), 6.3 (guide, pg 31), 10.5 (guide, pg. 35)

Math F7

Other Activities

- Instead of creating a report on their findings, students could also create and present a slide show presentation which illustrates their findings. For information on creating slide show presentations please see the **Journey On** web site at:**http://www.edu.pe.ca/journeyon/pd.htm**

Activity

Students will research a mystery relating to the "Mystery and Wonder" theme. Using a variety of resources, including the Internet and CD-ROMs, students will gather information and then present their findings in written and visual form. Teachers can have the students pass in a written report about their findings.

Resources

- Internet
- Word Processor

Instructions

Instructions for this lesson plan are quite straight forward. Students are expected to pick a topic related to "Mystery and Wonder", research this topic and then write a short report on their findings. Teachers can make specifics such as the length of the report and number of references etc., suit their own particular needs and the needs of particular students in the class.

Most important in this lesson plan with respect to the technology skills are the skills related to searching the Internet, evaluation of websites, citing web resources used and the skills related to using replacement variables when producing the document.

Lesson Plan: Circle Graphs

Outcomes

Technology A6.2, B6.2, B6.4, B6.5

Math F5, F6, F7

Activity

In this activity, students will illustrate, explain, and express ratios, decimals and percents in graphic form.

Resources

- Graph paper
- AppleWorks Spreadsheet
- Appleworks Activity File: circle1.cwk

Instructions

Refer to **Mathpower 7** page 153 problem 39 or **Interactions 7** page 11-12.

Depending on the exercise used there are various examples of data that the students can use to set up the spreadsheets.

Using Mathpower

Problem #39 from **Mathpower Page 153** looks at the number of males and females in grade 6, 7, and 8 classes. Students can enter this information into a spreadsheet and create circle graphs to indicate the percentages.

There is a file called **circle1.cwk** for students should the teacher choose to use it. It simply has the data already entered into the spreadsheet.

Two ways to proceed:

- Students enter the data into a spreadsheet themselves. To do this use the data from the book and enter it into the spreadsheet. This data has also been included on the next page with the totals. Be sure to enter the totals.

- Teachers send a file with the data already entered. This file is called **circle1.cwk.** This can be done on the schools networks.

Please see the next page for detailed description of this exercise. The teacher could photocopy these pages for student use.

Lesson Plan: Circle Graphs

Instructions *(continued)*

Problem # 39 page 153 Mathpower 7

1. **Option 1**: Manual Data Entry

Enter the following data into a spreadsheet in this format.

	Combined	Girls	Boys
Grade 6	26	12	14
Grade 7	32	20	12
Grade 8	42	16	26
Totals	100	48	52

To Enter this Data in AppleWorks

- Open AppleWorks.
- In the **New Document** window click on **Spreadsheet**. (If the **New Document** window does not appear, click on **File / New**).
- Cell A1 will be outlined which means that it is ready for data.
- Using the cursor movement keys (arrows), move to the necessary cells and enter the information which appears to the left.
- **To enter data** - go to the proper cell and then click in the **Data Entry** window

(this (the white space just below the menu bar). Type your data and hit the **Enter** key. The data will appear in the cell that was selected.
- Enter the data for the other cells, using the cursor movement keys (arrows) to go to the required cells when necessary.
- Save your file with the name **Circle1.cwk** .

2. **Option 2** Use the file with data already entered. Your teacher will have put this in your g: drive.

Open the file called **Circle1.cwk**

To do this in AppleWorks

- Click on **File / Open**
- Make sure you are in the g: drive
- Click on the file **Circle1.cwk** and click on **OK**

Lesson Plan: Circle Graphs

Instructions *(continued)*

Questions to accompany the lesson:

1. What percentage of the students are in Grade Six? Create a pie graph which displays this data. To do this follow the instructions to the right. Place your answer in the space below.

To do this in AppleWorks

- Click once in cell **A1** and then click and drag the mouse to cell **B4**. All the cells in this range should now be black. This means they are selected. (A1 is also selected even though there is only an outline around it).
- Click on **Options / Make Chart...**
- In the **Chart Options** window click on **Pie** chart and then click OK.
- The pie chart will appear.
- The pie chart is a graphic object. The small black boxes in the corners mean the graphic is selected. When it is selected you can:
  - move the graphic by clicking and dragging the mouse anywhere on the graphic.
  - size the graphic by clicking and dragging on one of the black boxes in the corners.
  - delete the graphic by hitting **delete** on the keyboard.

2. What percentage of the students are in Grade Eight. Use the graph from number 1 above to answer. Students can display the actual numbers which are represented by each section of the pie graph. To do this follow the instructions below.

To do this in AppleWorks

- Double click anywhere on the graph.
- The **Chart Options** window will appear.
- Click on the **Series** button.
- Choose the **Label Data** option and click on **% in slice**.
- Click on **OK** and the percentages will appear in the slices of the pie graph.

Lesson Plan: Circle Graphs

Instructions *(continued)*

Questions to accompany the lesson:

3. What percent of all the students are girls? Create a graph which will display this data. To do this follow the instructions below.

In order to complete the graph for question 3 we will move column b over to column e and then columns c and d directly beside column a.

- Select (if it is not already selected) the first pie chart and delete it.
- Select all of column b by clicking in the column indicator.
- Hold down the **Ctrl+Alt** keys together and then click in cell **e1**. The data will move to the new location.
- Select all of column c and d by clicking in the column indicators. (Click in the first column indicator and then drag the mouse to select whichever other columns you need).
- Hold down the **Ctrl+Alt** keys together and then click in cell **b1**. The data will move to the new location.

Once the move done, you will also need totals for the girls and boys columns.

- Put the word "**Totals**" in cell a5 and then, using formulas, calculate the totals for the girls and boys columns.

You can now follow the below instructions to create the graph for question 3.

- Select the range of data needed for the second pie chart. **(a5 to c5)** Click on **Options/Make Chart...**
- In the **Chart Options** window click on **Pie** chart and then click **OK**.
- The pie chart will appear.
- The legend will display the series rather than the actual names of the grades. If you want the actual names of the grades to come from the spreadsheet, the data will have to be moved so that the appropriate rows are below one another when the data is selected. To do this follow the same instructions as above. In this case you will be moving row 5 up to row 2 so that the totals appear just under the titles for Girls and Boys. Then, when you select the data for the graph, include the titles in the selection and then the graph will be properly labeled.
- You can also add the percentages to the slices by double clicking the graph and choosing **Series/Label Data/% in slice.**

Lesson Plan: Circle Graphs

Other Activities

Have the students do surveys in the class to determine the number of students who like particular things. Have the students create pie charts to represent the percentages. Some of the topics that they could investigate would be:

- Which TV program is the most popular?
- What is the most popular food?
- Which clothing brand is the most popular?
- Which hockey team is the most popular?
- What sport do students like to play the most?

- Divide the results according to males and females.

Instructions *(continued)*

Using Interactions

If the teacher uses Interactions, there are some good examples of data to use in Pie Charts on page 11 and 12. Students can enter the data for problem #2 on page 12 and recreate the pie chart for this exercise. To do this please enter the data from Problem #2 and then follow the instructions below.

To do this in AppleWorks

- Select the cells with the required data.
- Click on **Options / Make Chart...**
- In the **Chart Options** window click on **Pie** chart and then click **OK**.
- The pie chart will appear.
- The pie chart is a graphic object. The small black boxes in the corners mean the graphic is selected. When it is selected you can:
  - move the graphic by clicking and dragging the mouse anywhere on the graphic.
  - size the graphic by clicking and dragging on one of the black boxes in the corner.
  - delete the graphic by hitting delete on the keyboard.

It might also be interesting to have the students estimate the numbers for the graphs in problems 3, 4, and 5 and have them enter these numbers into the spreadsheet to recreate the graphs on this page. In order to do this students will have to use a total and then, by looking at the graph, estimate the number which would represent each section of the pie based on the total. eg: In problem # 3 page 12, the graph indicates the percentages of energy used to run different parts of the house. The obvious total would be 100 and then the other percentages would be approximately:

- Heat / Air Conditioning 65
- Lighting 3
- Water Heating 16
- Appliances 16

Estimate what the fractional representation would be for each section.
Using the data determine exactly what the fractional representation would be for each section of the circle graph.

Now have the students enter this data and graph it to see if their graphs look the same as the graphs on page 12.

Lesson Plan: What Are The Chances

Outcomes

Technology A6.1, A6.2, B6.1, B6.2, B6.5

Math G4.1, G5

Activity

In this lesson , students will compare experimental results with theoretical results. They will use the computer to simulate the throwing of a six sided die. They will simulate the throw of the die 25 times, 50 times, 75 times and 100 times. In each case they will record the results (what number appeared). They will also calculate the theoretical probability of getting certain numbers when throwing a six sided die. Once complete they can compare the experimental results and the theoretical results to determine if and how the two are related.

Resources

Appleworks Spreadsheet
File: Probss.cwk for the teacher

Instructions

Probability

Working with probability concepts can be greatly enhanced through the use of a computer. Rather than carrying out the many trials necessary to verify probability theories, a computer can be used to generate random results.

Introductory Activity:

Coin
Have the students discuss the theoretical chances of getting heads on a coin which is tossed 10 times. The students will now toss the coin 10 times to obtain the experimental results. Compare the experimental and theoretical data. Now have the students toss the coin 20 times and look at the data. The teacher may even want to go as high as 30 coin tosses and have the students verify the results. Note if students become aware of the experimental results approaching the theoretical results as the number of flips increases.

Activity Using a Die and a Spreadsheet

This exercise uses an example from the Atlantic Canada Mathematics Curriculum Guide, page 7-129, SCO G4.1 Find the experimental probability for each of the following situations which involve a six-sided die:

a) The probability of tossing a 4 with your die.
b) The probability of tossing a 2 with your die.
c) The probability of tossing an even number .
d) The probability of tossing an odd number.

Lesson Plan: What Are The Chances

Instructions *(continued)*

Students should first calculate the responses to the situations on the previous page. In theory, what should the results be for the die tosses? Once they have found the theoretical results, they can then verify these results using the spreadsheet. To do this, follow the instructions below.

Using the Random Function in AppleWorks

Creating the Spreadsheet

- Open **AppleWorks** and click on **File / New**. In the **New Document** window, click on **Spreadsheet**.
- Enter a function into cell A1. (Click in Cell A1 and enter the function into the **Data Entry Window**  below the menu bar).
- The function will be **=RAND(6)**

Explanation of Function

- The = sign is used to let AppleWorks know that you're entering a formula and not numbers or text. You always begin a formula with an equal sign in AppleWorks.
- **RAND** generates a random number.
- **(6)** The argument will be set at 6, since the numbers one to six are found on the die. Arguments are the values you supply to a function so that it can perform a calculation.

- Once the formula is entered into Cell A1 click in cell A1 so that it is selected. Now click and drag down to row 25. The entire section you dragged should be black.
- Click on **Calculate / Fill** down. You now have 25 randomly generated numbers. This is the same as throwing the die 25 times.

Lesson Plan: What Are The Chances

Other Activities

• Let the students create their own functions for games such as Trouble which has four colours (blue, red, green and yellow).

• Let students show the probability that when 50 babies are born, 25 of the babies will be girls.

• Let students show the experimental probability of throwing snake eyes (the dice lands with the number one showing for each of two dice). In this case the students will have to create two columns of random numbers from one to six. To make it easier students can add these two columns and put the results in column C. Using the techniques learned with the one die, column C can now be copied and sorted and the results tabulated.

• To better visualize the data, students could graph the columns of data to see the results.

Instructions *(continued)*

Grouping the Numbers Together for Easy Counting:

- All the numbers are in random order and it would be handy to have all the ones together, all the twos together etc. so that results can easily be counted.

To do this, do the following:

- With AppleWorks you cannot sort functions so you must eliminate the formulas in the cells before you sort. To do this select, all the cells which contain numbers and then click on Edit/Copy. This will copy the contents of the cells to the clipboard.
- Click in Cell B1 and then click on Edit/Paste Special...
- In the Paste Special window click on Values Only and click on OK. (Please note that there will be no visible change. The random function has, however, disappeared and the all that remains in the cells are the actual numbers. These numbers can now be sorted).

To Sort the Numbers:

- The necessary cells are still selected. (If they are not select them now). Click on Calculate/Sort...
- You can experiment with the different options which appear in the Sort window but for now these options should be correct so simply click on OK.
- The numbers will now be sorted in order so it is easy to count the number of ones, twos, threes, etc.
- This information can now be compared to the theoretical results.

The above instructions will give experimental results for 25 tosses of the die. Students can continue the exercise using columns C, D, E, etc., and increase the number of tosses by 25 for each column. Simply follow the above instructions for each column. Once completed, students should explain why, for each increase in the number of tosses, the general results were closer to the theoretical results.

Lesson Plan: Travel Agency

Outcomes

Technology A2.1, B2.1, C2.1, D2.1, E2.5, E2.6

Social Studies 7.2.3

Science 112-8, 112-9, 113-11

Language Arts 3.2, 3.3, 7.1

Math: F7

Activity

This internet/desktop publishing assignment allows students to prepare a travel brochure/pamphlet for one specific area of Prince Edward Island. Once students have gathered information about various aspects of the area for which they want to create a brochure, they design and prepare the brochure using AppleWorks. Depending on the detail of photos and graphics that students wish to include, there may be a need to manually copy and paste some materials onto the brochure as well. This brochure has, as its goal, to entice the specified family to visit this area and also to provide information for the family to make their stay as enjoyable as possible.

Resources

- Internet
- Appleworks

Instructions

Tourism Project Guidelines

1. Choose one scenario in which to prepare a travel package. You can work with a partner or individually for this project. ***Remember that once you choose a scenario, you must work within that section of PEI only.***

2. Once you have chosen your scenario, you must familiarize yourself with its location. Use a recent map of Prince Edward Island to help you become acquainted with your selected area.

3. Your package must be in brochure format (3 folds) and must contain the following:

   a) a decorative front cover
   b) an inside back cover
   c) a map of Prince Edward Island on the very back cover

   ** inside the brochure you have the choice of presenting your informationon 3 columns, in triangular shapes, or in the form of a jigsaw with pictures.

4. Decorate your brochure as you wish - colour, graphics, clipart, various fonts, etc.

5. **Proofread for spelling and grammar errors.** Remember that you are acting as a representative of PEI.

6. Your work must be glued properly (to the edges). **Absolutely no tape!**

Lesson Plan: Travel Agency

Instructions *(continued)*

7. Once in the computer lab, you will be cutting and pasting text and graphics, printing, researching, and word processing. Remember that you are working within limited space, so when working in AppleWorks you must make sure that the text will fit within your brochure.

8. You will be marked on the following:

   a) creativity
   b) use of colour
   c) content
   d) following instructions
   e) meeting deadline

Your job is to act as a spokesperson for Prince Edward Island. You have been asked to prepare a travel package for some specific visitors to PEI. You will be given a scenario which will assist you in developing the appropriate package for your visitors. You must develop a brochure which will entice your guests to visit PEI. It is necessary that you provide your guests with a choice of accommodations (3), restaurants, daily activities, and sightseeing / points of interest. Also, you must provide write-ups of each.

1. You are planning a vacation for a family of 4 - 2 adults and 2 children (one boy and one girl). The children are ages 8 and 12. The family have never visited Prince Edward Island before, and they wish to stay in the Cavendish area. The family wish to spend their entire vacation in Anne's Land.

2. You are planning a vacation for a family of 3 and they wish to stay in the Charlottetown area during the week of July 16th-18th. The couple's only child is a fifteen year old girl. This is the family's second trip to Prince Edward Island.

3. You are planning the vacation of an elderly couple who are travelling with their 10 year old grandson. These people have visited PEI several times, and they wish to explore the Western end of the province.

4. You are planning the vacation for a family of 5. The parents are both in their early thirties and the children are 4, 7 and 8. They are a very active family who are seeking some adventure in Eastern PEI.

5. You are planning the vacation of a young family of three. The parents are in their late twenties and their son is 16 months old. They wish to spend their entire vacation on the south shore of PEI.

6. You are planning the vacation of a family of six who are visiting Prince Edward Island for the second time. The parents are in their early 40's and the children range in ages from 6 to 16. The family adored the western section of the Island and they plan to spend their time there.

Lesson Plan: Travel Agency

Instructions *(continued)*

As students complete the information gathering stage, they should keep in mind the type of brochure that they wish to create. The teacher should go over features of a brochure and what types of materials can be included and what should be avoided. Creation of the brochure can be done using software such as AppleWorks or the Corel Office suite.

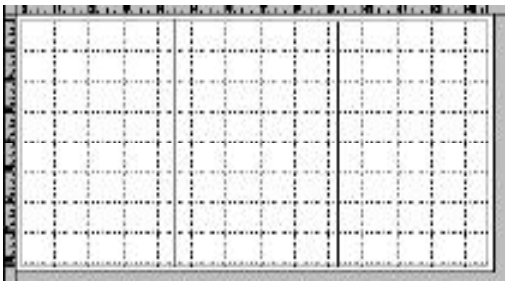
Using AppleWorks to Create a Brochure

- Open AppleWorks, click on **File/New** and in the **New Document** window, click on **Drawing**.
- Click on **Window/Page View**.
- Click on **File/Print Setup**. Depending on your printer, the following options will be located in different places. Set the paper size to **Legal (81/2 x 14) and Landscape.**
- Your brochure will have a front and back so click on **Format/Document** and in the **Document** window under **Size** put **2 pages across**. The first page will be the one side of the brochure and the second page can be the back side of the brochure.

Once the basic pages have been created it is a question of formatting the pages into columns which will form the fold lines for the brochure.

Creating Columns in AppleWorks.

- Click on **Options / Turn AutoGrid Off**.
- Click on **Window / Show Rulers**.
- Click on the **Line Tool** in the toolbox and draw two vertical lines, one at approximately 4.5 inches and one at approximately 9.25 inches. This will split the page into three even sections. These lines can be the fold lines. Your page will look something like the illustration below.



Lesson Plan: Travel Agency

Instructions *(continued)*

Keep in mind how the brochure will fold and which panels will appear top, middle and bottom. Once you know how this will go then place your text and pictures accordingly.

Putting Text into the Brochure

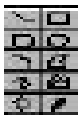
- Click on the **Text tool** and then click and drag anywhere on the page to create an area where you will type text. When you have created an area you will have a blinking cursor. Typing text in this area works the same as in a Word processor. Text can be typed and attributes such as size, font and other attributes can be changed just as in the word processor.

- Click outside the text to return to graphics mode.

- **Edit the text as an object**: single click the text. This will give you handles (black boxes) around the object.
  - **Move text**: Click anywhere inside the black boxes and then drag the mouse to the desired location.
  - **Change the width of the text block**: Click on one of the handles (black boxes) and drag the mouse. The size of the text block will change.
- **To work with the text as in a word processor**: Double click on the text. All word processing options are now available.

As well as text you will need to include graphics in the brochure as well. You can use the graphics tools to create these graphics and you can also cut and paste from the Internet. Remember, however, that colour pictures require large amounts of memory and they also do not print well.

Adding Graphics to the Brochure



- Click one of the graphics tools in the tool box.
- Click and drag an object onto the brochure.

Hint: double click the tool if you want to use the tool more than once.

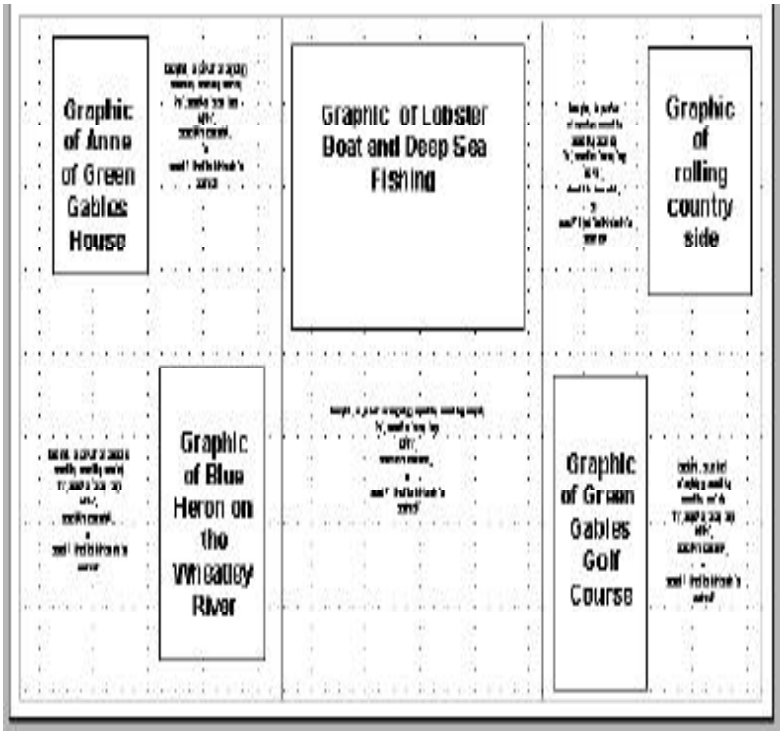
- To **select an object**: click on the object. It is selected when you have the black handles around the object.
- To **move the object**: select it and then click and drag anywhere inside the handles.
- To **size an object**: select it and then click and drag directly on one of the handles.
- **To add a graphic from a file**: click on **File / Insert** and choose the file that you want to insert.

Lesson Plan: Travel Agency

Other Activities

- Prepare pamphlets for other areas such as provinces or countries.
- Present your brochure as a slide show.
- Use in Art Program:
  - Group of Seven
  - An Artist
  - An Art Style (ancient, abstract, realism, modernism, contemporary)
  - An Art Period
    - Renaissance
    - Gothic
    - Greek
    - Roman
    - Impressionist
    - Modern
    - Pop
- Use in Language Arts for a "Golf on P.E.I." brochure.
- Use in Science to examine a concept, plant, animal, climate, photosynthesis

Instructions *(continued)*



Lesson Plan: Sherlock Holmes

Outcomes

Technology A10.1, B10.3, B10.4, B10.5, B10.6, B10.7, B10.8

Language Arts 1.1, 1.2 (guide pg. 26), 9.5 (guide pg. 34), 10.3 (guide pg. 35)

Science 113-7, 210-16, 211-2, 211-4, 211-5

Social Studies 7.2.2, 7.3.4, 7.4.3

Activity

In this activity students will work in groups of five. Each group will be expected to solve a puzzle containing 5 clues. Each person in the group will receive one of the five clues. They are not allowed to speak to one another but, rather, they must use E-mail to send messages back and forth to other members in their group until they are able to solve the puzzle.

Resources

- E-Mail
- Class list of e-mail addresses

Instructions

Students will primarily use the **Send** and **Receive** functions of email to complete this exercise. These are skills to which they have already been exposed in earlier years and this lesson can serve to reinforce for these skills. In some cases, students may want to create a distribution list so the messages they send are automatically sent to all members of their group. This is a skill to which the students may not yet have been exposed. The teacher may want to spend some time explaining this skill so the students can make use of this feature to complete the assignment. Please see below for more information about distribution lists.

Sample puzzles for teachers. Give each person in the group one of the following clues. **Teachers please note:** For the correct answers to these puzzles please see the paper version of this lesson plan.

Five Clues

To solve this puzzle Sherlock Holmes must discover the name of the city in which a murder took place. Using e-mail, each member of the group must share each of the clues with the others in his/her group to be able to solve the puzzle.

1. The murderer was married in this city many years ago so he was familiar with the surroundings and his escape route.

2. Most of the surrounding area is desert.

3. People love to go there to play Black Jack and to lose money in the One Armed Bandits.

4. On the night of the murder, the victim spent the night in Caesar's Palace.

5. This city is known for its spectacular night life.

Lesson Plan: Sherlock Holmes

Other Activities

- Teachers could develop any number of puzzles for which the students must find the responses. These puzzles could be related to the materials that are studied in class.

- Have students, in groups, prepare puzzles and exchange the puzzles for other groups to solve.

- Have competitions to see which group can solve the puzzle the fastest.

Instructions *(continued)*

The Hidden Cove

To solve this puzzle Sherlock Holmes must find the missing treasure in a hidden cove. To find the cove piece together the following clues.

1. The cove is found on an island.
2. There are white sandy beaches nearby.
3. Anne of Green Gables may have played near this cove.
4. This cove is situated in an area created to protect a small bird.
5. You have to pay to see the cove.

Lesson Plan: Empowerment Webpage

Outcomes

Technology A11.2, B11.2, B11.3, B11.6

Social Studies 7.1.1, 7.3.1, 7.4.1, 7.4.4, 7.7.1

Language Arts 9.3, 10.3

Activity

Brainstorm various aspects of society that might empower of disempower diverse people such as Aboriginals, Acadians, African-Canadians. Students will divide into groups and use the Internet to research the topics from the brainstorming session. Each group designs and presents a single web page on the chosen topic.

Each web page must include all of the following:

- written description
- graphic
- background
- link to school homepage
- title
- sources cited

Resources

- Internet
- Front Page/Front Page Express
- Inspiration 7.5

For Tutorials on Front Page, Front Page Express, and Inspiration 7.5, visit the **Journey On** web site at: **http://www.edu.pe.ca/journeyon/pd.htm**

Lesson Plan: Interactions Within Ecosystems

Outcomes

Technology A1.1, A4.1, B1.9, B1.16, B4.1, B4.2

Science 109-13, 111-6, 112-7, 210-2, 306-1

Activity

Students will use Inspiration 7.5 to create a visual and text description of ecosystem words and concepts.Students will work in pairs to create a multi-file Inspiration document.

Resources

- Inspiration 7.5

Instructions

1. Open a new Inspiration document.
2. Using the main heading " Interactions within Ecosystems". select an appropriate icon.
3. Using the " rapid fire" tool, create 3 sub-headings: "Energy Transfer in an Ecosystem", "Hierarchy of the Ecosystem", "Organisms in an Ecosystem" These sub-headings should be attached to the main idea and not to each other.
4. Under the sub-heading "Energy Transfer in an Ecosystem", create 2 new headings called "Food Web" and "Food Chain". Be sure to save this file.
5. Open a new page and create a Food Web using the available icons. Be sure that the arrows are pointing in the direction of the energy flow.
6. Link these 2 pages by using the "hyperlink" tool
7. Repeat the process for "Food Chain".
8. Create new page called "Hierarchy of the Ecosystem"
9. Insert the words "Niche", "Habitat", "Population", Community", "Ecosystem"
10. Use the "Note" tool to provide a description of each term.
11. "Hyperlink" this page to the "Interactions within Ecosystems" main page.
12. Following the same procedure, create a new page called "Organisms in an Ecosystem"

Create 3 headings for the 3 main types of biotic creaturesin an ecosystem. Link this to the main page. Make sure that each of the files is saved. For management purposes, it is recommended that a folder be created with a name such as "Science-Ecosystems". All files are placed within this folder.

For information on Inspiration 7.5, visit the **Journey On** website at: **http://www.edu.pe.ca/journeyon/pd.htm**

Suggestions For Assessment

- Create a checklist for all components
- Have students present their Inspiration Documents to the class

Lesson Plan: World War I - Looking For Answers

Outcomes

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

Social Studies 7.5.1, 7.6.1, 7.6.2, 7.6.3

Activity

In this activity students will visit specified sites on the Internet which relate to World War 1. They will follow instructions to search out factual answers based on Canada's involvement in this war.

Resources

- Internet
- Questionnaire handout

Instructions

1. Questionnaire must be photocopied and distributed to individuals or pairs.

2. Point out website address for Department of Veterans Affairs.

   http://www.vac-acc.gc.ca/youth/ (This site was valid on July, 2005)
   Once at this site, click on History. (In the blue to the left, third option down)
   Now click on the First World War
   Now click on Canada and the First World War
   The first three bullets of this next page contain the answers to the questionnaire.

3. Follow instructions carefully to proceed from Paragraph #1 - 9 for section 1, t then go to next sections as instructed.

4. Assignment ends with drawing map of WW1 Europe. Students will need to source this either from an atlas or an on-line map to copy on to paper.

For a map of Europe in 1914 please see:

http://history.acusd.edu/cdr2/WW2Pics/81520.GIF (These two graphics were available through this site on July, 2005)

For a map of Europe in 1924 please see:
http://history.acusd.edu/cdr2/WW2Pics/81522.GIF

Lesson Plan: World War I - Looking For Answers

Instructions *(continued)*

Canada and the First World War - The Conflict Begins

Using the Department of Veteran's Affairs Website, follow the instructions carefully to scan the text and find the answers to the questions below. Paragraphs have been identified to make your search a little easier. As you complete one section, automatically continue to the next one.

Par.#1 The assassination which triggered the start of World War 1 was
When? _____ and where? _____

Par.#2 Europe's most powerful countries teamed up with or against other countries

The Triple Entente

1. _____ 1. _____
2. _____ 2. _____
3. _____ 3. _____

Europe has been on the verge of war at this time for several reasons including:
1. _____ (greedy desire for more land and colonies)
2. _____ (love of one's own country)
3. _____ (boasting and bragging of one's country)
4. _____ (politicians hoping to gain powerful positions)
5. _____ (general "mood" for war and excitement)

Par. #3 In which order did these countries enter the war? Number them from 1-6.
_____Russia _____Canada
_____France _____Britain
_____Austria _____Germany

Par. #4 Compare the before and after of how people viewed war.

Before Optimistic View	After Reality
1. Excitement	1. Explosives
2. _____	2. _____
3. _____	3. _____
	4. _____
	5. _____

Lesson Plan: World War I - Looking For Answers

Instructions *(continued)*

What is a dreadnought? (Look it up in a dictionary or another source)

Par.#5 The German von Schlieffen Plan was designed to:

_____ A. knock out Russia, then attack France

_____ B. knock out Britain, then attack France

_____ C. knock out France, then attack Britain

_____ D. none of the above

Explain the von Schlieffen Plan further.

The "Old Contemptibles" refer to the:
_____ A. Germans
_____ B. Russians
_____ C. British
_____ D. None of the above

Par. #6 Plan XV11 = Plan _____? (numeral)

Name two battle areas of this plan: _____
and_____

Part. #7
Eastern Front generally refers to _____(a country)
Military deadlock means_____

Part. #8
Armies on both sides raced to gain control of_____
Animal-like burrows, dug by soldiers were called_____

Lesson Plan: World War I - Looking For Answers

Instructions *(continued)*

These burrows were protected by 1._____,
2. _____, and 3. _____

The area between these opposing trenches was known as
_____

Trench systems stretched between these two Eastern European countries:

1._____ 2. _____

Par. #9 What is the name of the famous field where nearby, the 1915 Battle of Ypres took place?
_____.

The Conflict Widens

1. Which European country switched sides in 1915?
2. Which European country took their place?
3. By 1917, it was considered to be a full-blown world war because it involved:

Canada Enters the War

4. In 1914, the Regular Canadian Army had _____men.
5. After recruitment, this number rose to _____.
6. Name of Canada's first convoy sent overseas
_____.
7. Included was a colony which was not yet a part of Canada
_____.

Lesson Plan: Geological Timeline

Outcomes

Technology A4.2, A4.3, A4.4, A4.5

Science 109-13, 111-6, 209-4, 210-2, 311-5, 311-6

Language Arts 2.1, 5.3, 8.1, 8.3, 8.4

Social Studies 7.1.1, 7.2.3

Assessment

- teacher observation
- student reflection of how to improve product and/or process
- rubric for finished product

Other Activities

- convert Inspiration file into a slideshow presention
- oral presentation

Activity

Students will create a timeline of major geologial activities over the past 100 years (earthquakes, volcanoes, tsunamis).

Resources

- Internet
- Inspiration 7.5

Instructions

Research 3 major geological activites for each of the 3 preselected categories (earthquakes, volcanoes, tsunamis).

- Create a title for this activity in Inspiration 7.5
- Design a concept map to outline these geological activities in chronological order
- List the specific geological activities in order
- Identify the category and location of each activity
- Attach notes for each activity to detail the intensity and resulting human impact
- Link pictures of each event to the Inspiration document and attach explainatory text

For information on Inspiration 7.5 please visit Journey On website at: http://www.edu.pe.ca/journeyon/pd.htm

Lesson Plan: Using Translation, Rotation and Reflection

Outcomes

Technology A5.2, B5.2, B5.3

Math E9, E10

Activity

Students will create a slideshow that demonstrates translations, rotations and reflections both in graphic form and written description. The slideshow will be used as an assessment tool for students to demonstrate their knowledge of transformations and the characteristics of each.

Resources

- Appleworks/Word Perfect
- Corel Presentations

Instructions

- In the Appleworks Draw program, use the polygon tool to create a diagram of choice. Fill with the colour blue.
- Copy and paste the image next to the original and fill with the colour green.
- Using the rectangle tool, make a rectangle over both images and fill with red.
- Choose "Arrange" tool and "move to back"
- Hold the "shift" key and select all three images. Copy.
- Open Corel Presentations.
- Choose "slideshow"

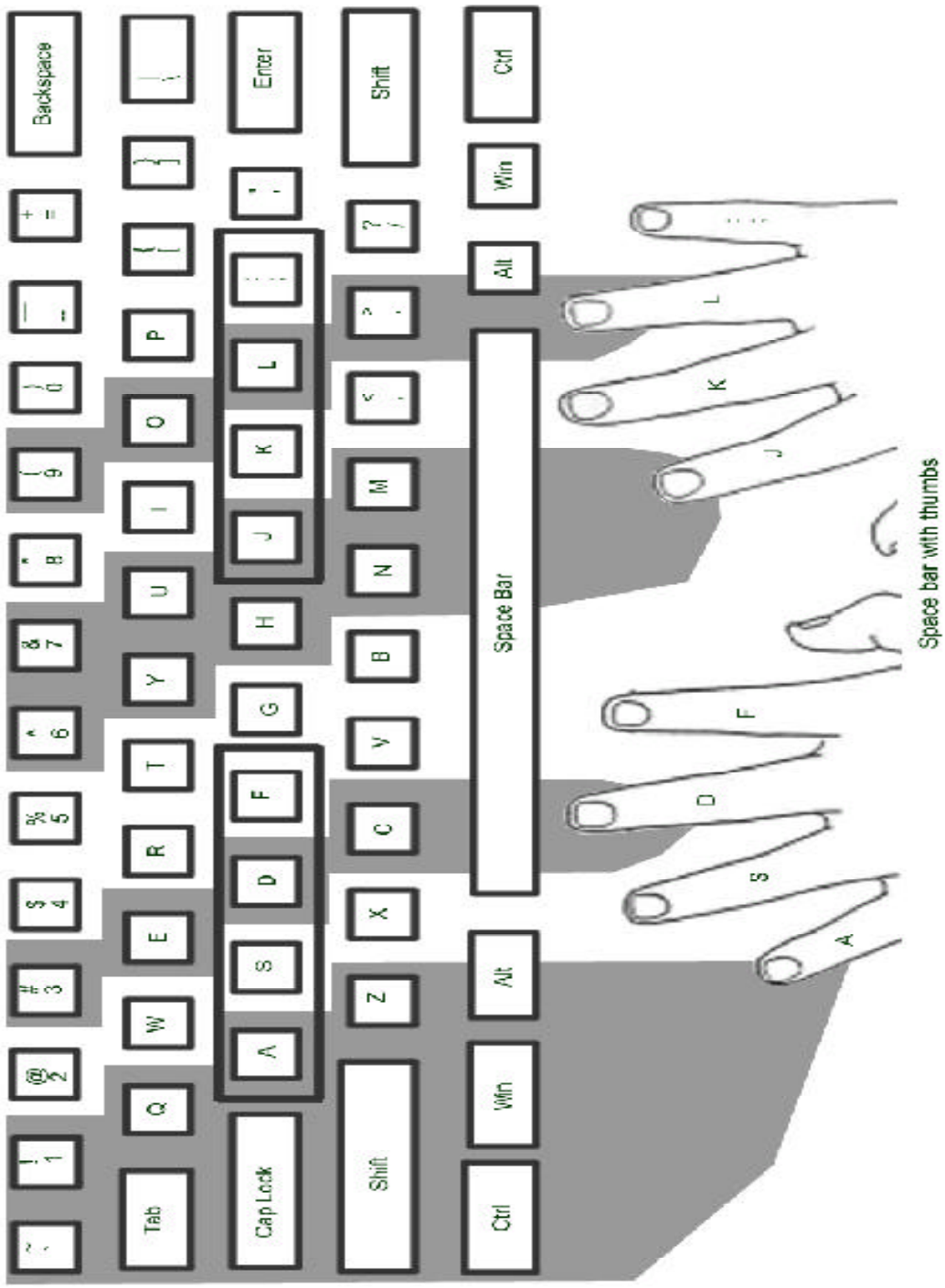
Slide 1: using the text tool enter a title for the slide show
Slide 2: paste image from Appleworks. Use text tool to write a description of the slide just created.

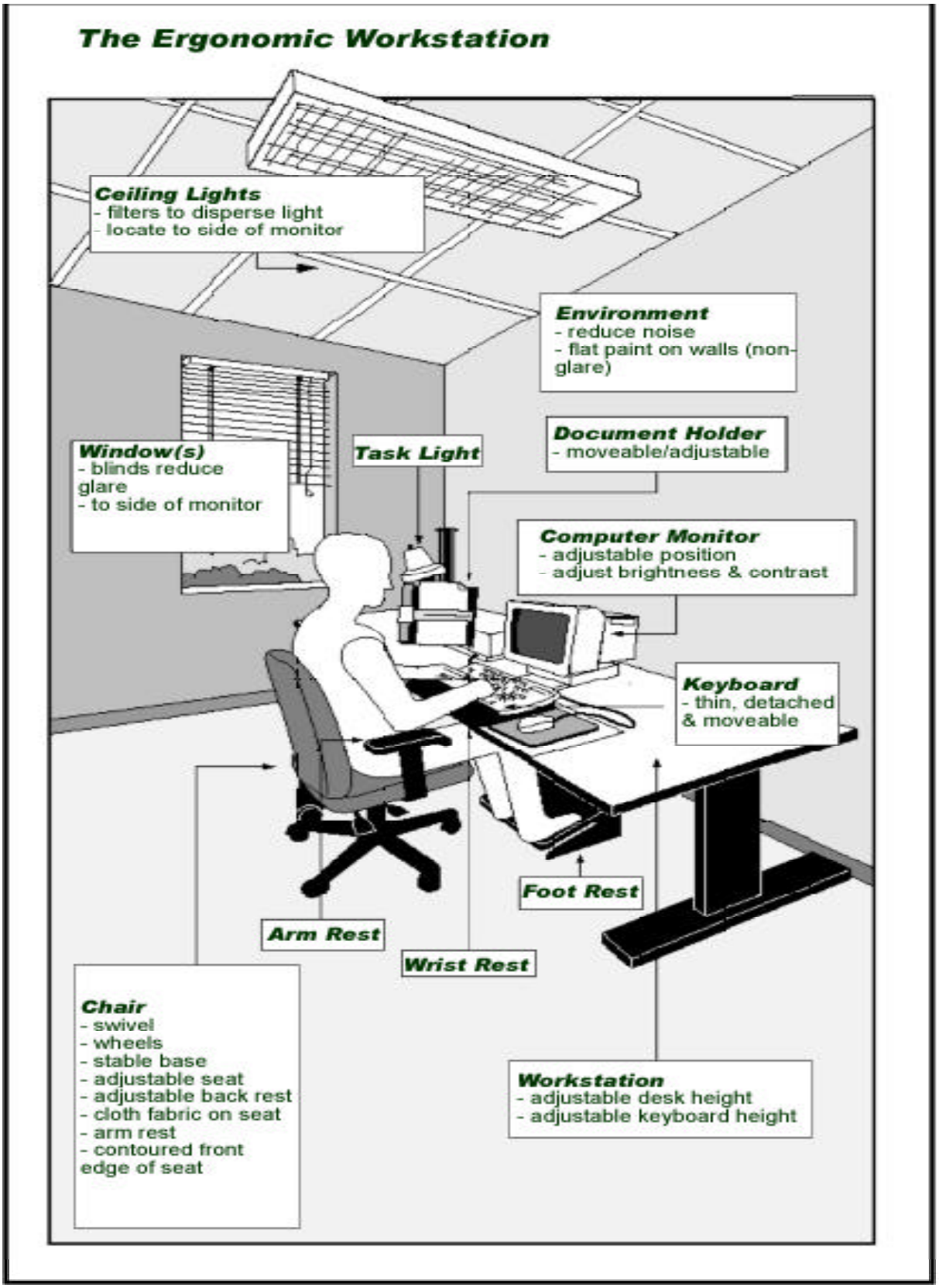
- Return to the Draw program and delete all but the original blue figure.
- Select the original image and copy and paste onto itself. Select "Arrange" tool then "Flip Vertically". Fill with black.
- Using the rectangle tool make a rectangle over both images and fill with red. Choose "Arrange" and "Move to back".

Slide 3: select all three images and copy onto slide 3

- Return to the Draw program and delete all but the original blue figure.
- Select the original image and copy and paste onto itself. Select "Arrange" tool then "Rotate". Choose a rotation of 270 degrees. Fill with yellow.
- Using the rectangle tool make a rectangle over both images and fill with red. Choose "Arrange" and "Move to back".

Slide 4: select all three images and copy onto slide 4
Slide 5: provide a written description that explains what was learned


Backspace
Enter
Shift
Ctrl
Win
Alt
Space Bar
Alt
Win
Ctrl
Shift
Cap Lock
Tab
Space bar with thumbs


The Ergonomic Workstation
Ceiling Lights
- filters to disperse light
- locate to side of monitor
Environment
- reduce noise
- flat paint on walls (non-glare)
Window(s)
- blinds reduce glare
- to side of monitor
Task Light
Document Holder
- moveable/adjustable
Computer Monitor
- adjustable position
- adjust brightness & contrast
Keyboard
- thin, detached & moveable
Foot Rest
Arm Rest
Wrist Rest
Chair
- swivel
- wheels
- stable base
- adjustable seat
- adjustable back rest
- cloth fabric on seat
- arm rest
- contoured front edge of seat
Workstation
- adjustable desk height
- adjustable keyboard height

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/B6 is copied the numerator A6 will change to A7, A8, etc. while the denominator B6 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 than 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 a 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, Yahooligans)

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