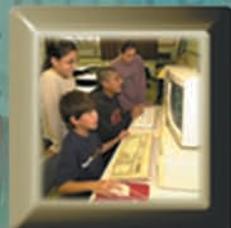
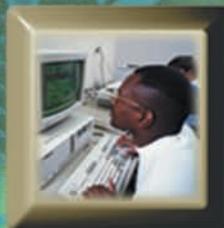




Department
of Education

CANADA



Journey On

Working Toward Communication and
Information Technology Literacy

Grade 1

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 1 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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Vision

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

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

Introduction

Purpose of Document

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

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

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

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

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

Journey On:

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

Terminology

Technology

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

Technological Competence

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

Technological Literacy

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

Philosophy

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

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

Technology Integration

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

Advantages of Technology Integration

Integration of technology into the curriculum

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

ABCs of curriculum

An Outcome-based Curriculum

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

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

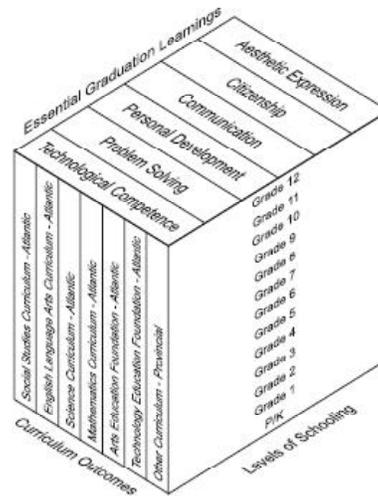
Essential Graduation Learnings (EGLs)

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

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

General and Specific Curriculum Outcomes

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



Other Features of the Curricula

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

Cooperative Learning and Group Work

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

Creative Thinking

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

Critical Thinking

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

Diversity/Equity Education

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

Resource-based learning

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

Learning Styles

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

Essential Grad
Aesthetic Expression Citizenship
Personal Development

Language Arts

Speaking and Listening

Students will be expected to

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

Reading and Viewing

Students will be expected to

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

Writing and Other Ways of Representing

Students will be expected to

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

General Curri

Mathematics

Number Concepts/Number and Relationship Operations

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

Patterns and Relationships

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

Shape and Space

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

Data Management and Probability

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

Ot

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

Curriculum Learnings

Technological Competence

Communication

Problem Solving

Curriculum Outcomes

Science

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

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

Skills

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

Knowledge

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

Attitudes

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

Social Studies

Citizenship, Power, and Governance

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

Culture and Diversity

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

Individuals, Societies, and Economic Decisions

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

Interdependence

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

People, Place, and Environment

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

Time, Continuity, and Change

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

Other

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

Effective Use of Technology with

Language Arts

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

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

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

Mathematics

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

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

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

in the Core Curriculum Areas

Science

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

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

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

Social Studies

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

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

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

Technology Curriculum Outcomes

GENERAL TECHNOLOGY OUTCOMES

(as per APEF Technology Foundation Document)

GTO A- Technology Problem Solving

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

GTO B- Technology Systems

Students will be expected to operate and manage technological systems.

GTO C- History and Evolution of Technology

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

GTO D- Technology and Careers

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

GTO E- Technological Responsibility

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

Areas

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Independent - the student uses the technology without assistance.

Computer Systems



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

Social, Ethical, and Health



Awareness



Guided Instruction



Independent

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

Internet

 Awareness
  Guided Instruction
  Independent

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

Concept Maps



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

Graphics



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

Spreadsheets



Awareness



Guided Instruction



Independent

	1	2	3	4	5	6	7	8	9	1	1
Students will be expected to:											
A6.1				Checkered	Checkered						
A6.2				Checkered	Checkered						
A6.3										Checkered	
A6.4				Checkered	Checkered						
B6.1				Checkered	Checkered						
B6.2						Checkered					
B6.3				Checkered							
B6.4				Checkered	Checkered						
B6.5						Checkered					
B6.6				Checkered	Checkered						
B6.7										Checkered	

Word Processing



Awareness



Guided Instruction



Independent

	1	2	3	4	5	6	7	8	9	1	1	1
Students will be expected to:												
A7.1 create and edit data files and form documents to perform a merge											0	1
A7.2 identify examples of desktop publishing (i.e. newspaper, catalogue, ads, brochure)												
B7.1 use a grade level appropriate wordprocessor to create and edit written work												
B7.2 locate characters on a keyboard and identify functions of word processing (ie. cursor, insertion point, enter key, space bar, upper case, backspace, shortcut key)												
B7.3 use editing tools to revise work (i.e. spell check, thesaurus, find and replace)												
B7.4 change font, size, colour, style (ie. bold, italics, underline, insert special characters, drop capitals)												
B7.5 format text (ie. justification, line spacing, outlines and bullets, text wrap)												
B7.6 format documents (ie. using margins, tab rulers, indents, page center, border, watermark)												
B7.7 insert a graphic and manipulate, (ie. resize, add borders and fill, create text art)												
B7.8 insert and format tables and text boxes (ie. lines, fill, columns, rows, borders, alignment)												
B7.9 format multi-page documents with headers, footers, page numbers, page breaks and keep text together function, change page orientation/size (ie. text presentation features)												
B7.10 insert automated features (ie. date and file stamp)												

Multimedia



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

Database



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

Telecommunications



Awareness



Guided Instruction



Independent

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

Web Authoring



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

How to Use this Document

Paper Document

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

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

On-line Document

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

Two Page-Layout

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

Technology Curriculum Outcome Area

Grade Level

Grade 7

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

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Grade 7

Computer Systems		District Specific Curriculum Support				
Technology Lesson Plan	Grade Level	Language Arts	Math	Science	Social Studies	Other
<p>AS 1 address applications which protect data in order to prevent loss.</p> <p>BS 4 have an understanding of data and understand the difference between data and information.</p> <p>BS 4 understand the difference between software and hardware.</p> <p>BS 8 identify system functions and be able to identify their uses for hardware, hardware and software (peripherals, operating systems, applications) and software (operating systems, applications, word processing, spreadsheets, etc.).</p>	75		1127, 2003	723C		

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

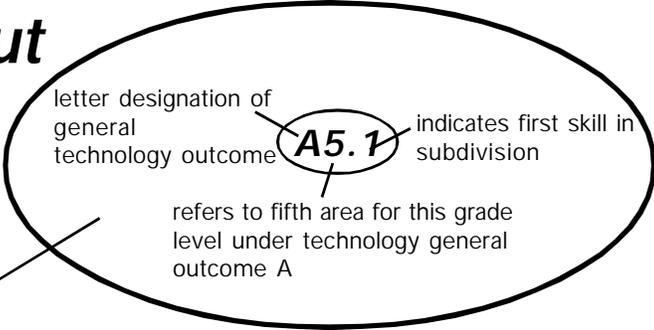
Specific CIT Outcomes

Instructional Considerations

Teaching Suggestions, Activities and Assessment

Links to Curriculum Outcomes

Two Page-Layout in Detail



Specific Outcomes

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

Grade 7

Computer Systems

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

Instructional Considerations

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

Teaching Suggestions, Activities and Assessment

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

Links to Curriculum Outcomes

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

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

Computer Systems

Students will be expected to:	Instructional Considerations
<p>B1.1 login, open and close a program, open, save and close a file with mouse (Awareness)</p> <p>B1.13 identify computer viruses, how they are transmitted and how anti-virus software is used to protect or clean a computer (Awareness)</p> <p>B1.14 identify spam, popup ads, spyware and other invasive software coding (Awareness)</p>	<p>B1.1 Students must be able to recognize capital letters and numbers in order to be able to login. There is a login and network password for grade 1 students. Students need to recognize left and right to operate a mouse and must have opportunity to practice these fine motor skills.</p> <p>The peer helping system encourages collaboration and cooperative learning. This exposes the younger students to the concept of communicating with technology and gives the older students an opportunity to reinforce their skills.</p> <p>B1.13 Programs designed to damage the data on a computer or disrupt its use fall into one of the following categories:</p> <p>Virus: a program that spreads from computer to computer by attaching itself to an executable file. When this file is activated the virus supplies instructions to the computer. These instructions can range from a mere nuisance (eg. a message on your monitor) to the very destructive (eg. erasing the hard drive).</p> <p>Worm: a program that is written in segments and spawns copies of itself in the computer's memory until eventually it causes a crash.</p> <p>Trojan horse: a program disguised as a game or useful application but when executed destroys information on the computer, or gives access or control of the computer to another.</p> <p>Care must be exercised when installing files or opening e-mail. The best methods for prevention are: (a) to only accept programs from reliable sources and (b) to install a reputable virus checker on the system which scans all imported data files, diskettes and CDs for possible viruses.</p> <p>B1.14 Spyware is coding that transmits information to external parties about a users' browsing habits. Spyware and popup screens may also take control of the users browser and automatically redirect the user to an unwanted website.</p>

Computer Systems

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plans:</p> <p><i>Tinkering with Technology</i></p> <p><i>Patterning with Shapes</i></p> <p>B1.1 With assistance students will be able to enter their login and password to access the school network. Schools are making extensive use of peer helping. A student from a higher grade becomes a mentor for a student in a lower grade. Early on the mentor could assist the grade 1 student with logging in, opening files, saving files and closing programs.</p> <p>B1.13 Ensure that files transferred from home are virus checked. School email attachments are automatically scanned for viruses. Precautions must be taken at home when using private email services such as Yahoo or Hotmail which may not scan attached files. Private email services must not be accessed in school.</p> <p>B1.14 Preview web sites that will be visited and avoid those that enable popup windows and advertisements.</p> <p>Discuss the topic of respect with regards to Internet material. Students must be made aware of situations when they should ask adults for help. (i.e.: a student is automatically redirected when browsing or a popup window appears)</p>	<p>(Emergent) 1.1, 1.2, 1.3, 2.1, 2.3, 8.2, 9.1 (Early) 9.2</p>	<p>F1, F3</p> <p>C4, E3</p>	<p>100-12, 100-13, 102-2, 101-6, 103-4, 202-2, 202-4, 202-7</p>		<p>Visual Arts 1.1.2, 1.6.2, 1.7.2</p>

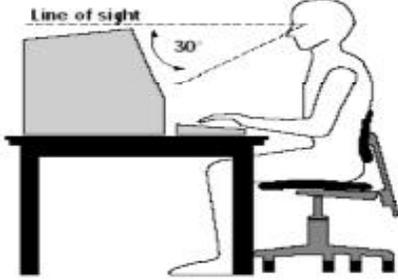
Computer Systems

Students will be expected to:	Instructional Considerations
<p>C1.1 identify technologies that are found in everyday life (Awareness)</p>	<p>C1.1 Technology is human innovation in action that involves the generation of knowledge and process to develop systems that solve problems and extend human capabilities - technology is how humans modify the world around them to meet their needs and wants or to solve practical problems (ITEA, 2000)</p> <p>Technology is constantly evolving and will continue to impact upon the lives of our students as they continue through life. The speed at which change occurs, dictates the necessity for helping individuals to begin to develop strategies for managing and utilizing technology appropriately and to suit their own purpose. During grade 1, teachers can begin to develop an awareness in students of how technology impacts upon our lives and how it can be used as a tool to solve many problems.</p>

Computer Systems

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Language Arts	Math	Science	Social Studies	Other
<p>C1.1 Students in the primary grades will begin to develop an awareness of technologies that are used in their home, school, and community. When using a specific technology, the purpose, appropriate use and etiquette surrounding technology must be reviewed by the teacher. Safety issues relating to electric shock, use of power bars, tripping on wires, etc. must be discussed. Students should be given the opportunity to discuss and express their opinions regarding these issues.</p> <p>Technology issues can be discussed within the context of several curricular themes.</p>					

Social, Ethical and Health

Students will be expected to:	Instructional Considerations
<p>A2.1 identify aspects of an ergonomic workstation (Awareness)</p> <p>B2.1 demonstrate proper touch keyboarding techniques (Awareness)</p> <p>E2.1 respect equipment and other student's work (Awareness)</p>	<p>A2.1 Ergonomics or the relationship between people and their work is a science with a growing body of evidence. Applying ergonomics by adjusting your chair, work surface, monitor, keyboard, mouse, lighting and modifying your work habits with lifting techniques all have reduced the risk of injury at our workplaces. Furthermore, it increases productivity. (Occupational Health and Safety Manual, Draft 2004)</p> <p>Teaching young children to position themselves properly at the computer and using good posture is essential to prevent the future development of serious injury.</p>  <p>To prevent eye strain, encourage students to look away from the screen every few minutes to rest their eyes. Stretching and shaking their hands at regular intervals are also good habits.</p> <p>B2.1 Emergent writers will become familiar with the keyboard through use of the keyboard and familiarity can be taught ... keyboarding skills for independent writers should be sufficient for them to keep up with their line of thought. (pg. 240 English Language Arts Curriculum, Grades Entry -3)</p> <p>E2.1 Work together to maintain a safe learning environment. Attention to computer work station arrangement will decrease the likelihood of electrical or physical mishap.</p>

Social, Ethical and Health

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plan: <i>E-mail Buddies</i></p> <p><i>In My Own Words</i></p> <p>A2.1 Introduce aspects of an ergonomic workstation (see appendix) Model proper posture and position at the keyboard. Many online resources exist for ergonomics. An example would be the following from Cornell University Department of Ergonomics (http://ergo.human.cornell.edu/CUEHinfo.html).</p> <p>Assess posture and technique.</p> <p>B2.1 Use Ultimate Writing and Creativity Center as an entry level word processor. See Instructions in the “In My Own Words” lesson plan.</p> <p>E2.1 Ensure that wires are properly connected and secured. Encourage students to report any workstation abnormalities. Discuss classroom rules for behavior.</p>	<p>(Emergent) 2.1, 2.3, 5.1, 8.1, 8.2, (Early) 10.4</p> <p>(Emergent) 7.1, 9.1, 10.1, 10.4 (Early) 4.2, 10.1, 10.4</p>				<p>Health</p> <p>Refer to personal safety/abuse prevention supplement to the Family Life Education curriculum guide, grade 1 and 2</p>

Social, Ethical and Health

Students will be expected to:	Instructional Considerations
<p>E2.2 work co-operatively at work station (Awareness)</p> <p>E2.3 adhere to acceptable use agreement for work station/ network/ Internet (Awareness)</p> <p>E2.8 demonstrate caution before sending personal information over the Internet (Awareness)</p>	<p>E2.2 Working cooperatively includes: listening to others, sharing ideas, taking turns keyboarding, asking questions, and participating in discussion.</p> <p>E2.3 Ensure that parents have signed the Acceptable Use Agreement. Additional permission must be obtained from parents to publish any student work, pictures or names on the Internet. See PEI Department of Education website guidelines (http://www.edu.pe.ca/journeyon/tech_support_pages/GuidelinesforSchoolWebPages.html)</p> <p>E2.8 Never give out personal information (personal details, phone number, address, picture, etc.) Personal information may include details about yourself, family and friends. If a student happens to open an objectionable site, s/he should immediately click on the “back button” to take him/her out of the site. S/he must immediately contact the adult in charge.</p>

Social, Ethical and Health

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Language Arts	Math	Science	Social Studies	Other
<p>E2.2 Suggestions for engaging students in the classroom can be found in the section “The One Computer Classroom” on the Journey On site (http://www.edu.pe.ca/journeyon/pro_d_pages/OneComputerClassroom.htm)</p> <p>E2.3 Discuss the contents of the Acceptable Use Policy.</p> <p>E2.8 Discuss the topic of personal privacy. Students must be made aware of situations when they should ask adults for help. Refer to Journey On web site “Recommended Guidelines for School Webpages” (http://www.edu.pe.ca/journeyon/tech_support_pages/GuidelinesforSchoolWebPages.html)</p>					

Internet

Students will be expected to:	Instructional Considerations
<p>A3.1 demonstrate awareness of the Internet as a source of information (Awareness)</p> <p>A3.2 use various tools (search engines and directories) and strategies necessary to carry out research (Awareness)</p> <p>E3.1 discuss issues concerning copyright material on the Internet (Awareness)</p>	<p>A3.1 During the entry-12 grades, students within the school system must not use the Internet without teacher supervision. Most of the work by students at the grade 1 level will involve working with preselected websites. Teachers should take the opportunity when using the Internet in class to begin to discuss appropriateness with their students.</p> <p>There is a wealth of Web sites on the Internet that provide the opportunity to learn about the values, customs and beliefs of their own and other cultures.</p> <p>A3.2 Students should be able to understand that the browser enables the user to send and receive information to and from the Internet. Students at Grade 1 level should practice using the following buttons in the browser: back/forward, home, refresh, and stop.</p> <p>Use a search engine designed for children such as Yahoooligans (www.yahoooligans.com).</p> <p>E3.1 Copyright laws now apply to software as well as print. When you purchase a software program, you are purchasing a single licence. This entitles you to load that particular piece of software on one computer. Installing it on more than one computer is considered computer piracy. It is possible to buy site licences which allow multiple computers to run the same program at one time.</p>

Internet

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plan:</p> <p><i>Comparing Living Things</i></p> <p>A3.1 Demonstrate various multimedia resources from the Internet regarding animals i.e. animal sounds, pictures, at the zoo, in their natural habitat, endangered species, etc.</p> <p>A3.2 Use a search engine. Key searchable terms such as “north american bears”. Narrow the search by adding other terms such as “brown”, “black”, or “grizzly”.</p> <p>E3.1 Discuss the idea that graphics posted on the Internet might belong to someone. Laws exist to protect owners of this material called “copyright”. Before acquiring a picture from the internet, check for permission to use it. (In many instances, terms of use are stated on the web site)</p>	(Emergent) 1.1, 1.2, 10.3		100-8, 201-1, 203-4		

Concept Maps

Students will be expected to:	Instructional Considerations
<p>A4.3 categorized ideas graphically (Awareness)</p> <p>A4.4 create links between ideas, relink or delete links between ideas (Awareness)</p> <p>A4.5 elaborate on ideas (Awareness)</p>	<p>A4.3 Concept mapping encourages students and teachers to be creative. They are able to work together to create concept maps, story boards, cause and effect diagrams, and outlines.</p> <p>A4.4 Graphical software allows easy manipulation of linked ideas. Simply click on a link and drag it to a new location.</p> <p>A4.5 Further explanation on an idea may be provided by adding notes. These may be clues, activities or questions relating to clarification of ideas.</p>

Concept Maps

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plan:</p> <p><i>Living Things</i></p> <p>A4.3 Inspiration 7.5 is available for use on every school machine. The licensing agreement also allows teachers to install this software on their home computer. Copies of this program have been provided to school librarians.</p> <p>A4.4 Record ideas generated during brainstorming sessions without organizing. Later, ideas can be easily categorized or deleted as required.</p> <p>A4.5 Following the brainstorming session further information can be added to the ideas by using the note feature.</p>	(Emergent) 1.1, 1.2, 10.3		100-8, 200-1, 203-4		Visual Arts 1.4.3, 1.2.1

Graphics

Students will be expected to:	Instructional Considerations
<p>A5.1 create illustrations or graphics by using the various drawing tools (Awareness)</p> <p>B5.1 demonstrate various object editing features (Awareness)</p>	<p>A5.1 Graphics programs provide the user with onscreen tools and palettes that can be used to design and create illustrations or graphics. Graphics programs can be used as an alternative learning strategy to explore and experiment with geometric shapes and relationships. The computer provides a highly interactive environment for the learner in which precise geometric shapes can be created.</p> <p>B5.1 Geometric shapes can be altered with respect to their size, orientation, colour, and position. Graphics programs are useful for helping students develop eye-hand coordination and aspects of spatial sense such as visual discrimination, perceptual constancy, and recognition of reflective symmetry (slides and flips).</p> <p>Object editing features may include 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.</p>

Graphics

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plan:</p> <p><i>Puzzles 1</i></p> <p><i>Patterning With Shapes</i></p> <p><i>Illustrating Stories</i></p> <p><i>Shapes Make Pictures</i></p> <p>A5.1 Teachers may wish to create a collection of activity files that may be opened and used at a learning station by individual or small groups of students. Example files are available with the “Puzzles” and “Patterning With Shapes” online lesson plans (http://www.edu.pe.ca/journeyon/).</p> <p>B5.1 Shapes can be sorted and classified according to various attributes. Patterns with 2D and 3D shapes may be created with varying attributes (size, colour, line thickness, etc.). Shape recognition can be reinforced by selecting or creating shapes.</p>	(Emergent) 9.1, 10.4	E1, E3, E5, E7, E10 C4, E3 E3, E5, E10			Visual Arts 1.1.2, 1.2.1, 1.2.3, 1.3.2, 1.6.2, 1.7.2 (relates to lesson plans provided)

Word Processing

Students will be expected to:	Instructional Considerations
<p>A7.2 identify examples of desktop publishing (Awareness)</p> <p>B7.1 use a grade level appropriate word processor to create and edit written work (Awareness)</p> <p>B7.2 locate characters on a keyboard and identify functions of word processing (Awareness)</p>	<p>A7.2 Use concrete examples of computer generated media such as magazines, brochures, catalogues, newspapers to demonstrate how technology is used to create written and illustrated text.</p> <p>B7.1 Students can be introduced to using word processing to develop effective writing. As students develop new skills in writing, they can be introduced to new keys and functions. Once students become familiar with the various components of the writing process, cut and paste functions can be introduced.</p> <p>B7.2 Emergent writers will become familiar with the keyboard through use. It is simply necessary that writers be able to key their ideas at a pace similar to composing with pencil and paper. Keyboarding skills for independent writers should be sufficient for them to keep up with their line of thought. (APEF English Language Arts Curriculum Document for Grades Entry-3, page 240).</p> <p>Encourage students to use proper posturing and healthy ergonomic habits (see Social, Ethical and Health section of this guide)</p>

Word Processing

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plan:</p> <p><i>In My Own Words</i></p> <p>A7.2 Provide or create an exemplar. Publish written work by printing a hard copy.</p> <p>B7.1 Begin to use a simple word processor such as Appleworks or Ultimate Writing Creativity Centre.</p> <p>B7.2 Use the characters of the keyboard and the simple function keys such as the space bar and enter key. Change the style of the characters, words, lines, paragraphs, and pages of the written work. These changes are termed formatting and enhance the presentation of student writing.</p>	<p>(Emergent) 9.1, 10.1, 10.4</p>				

Multimedia

Students will be expected to:	Instructional Considerations
<p>B8.1 navigate multimedia resources such as slide shows, online resources or CD-ROM interactive educational activities (Awareness)</p>	<p>B8.1 Multimedia components such as CD-ROM/DVD, slideshows, and online resources often motivate the young learner to explore and discover new information, and therefore encourages self-directed learning. These components also address the issue of multiple intelligences by providing information as visual (static and moving images) and auditory. In terms of technology skills these programs are useful in encouraging the development of motor skills such as those required when using the mouse. More importantly, these components can be used to enhance the development of many information processing skills required for retrieving computerized information.</p>

Multimedia

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plan:</p> <p><i>Comparing Living Things</i></p> <p>B8.1 Electronic CD-ROM encyclopedias may be available resources in schools. Web-based slide shows and educational websites are also available for use.</p>	(Emergent) 1.1, 1.2, 10.3		100-8, 200-1, 203-4		

Database

Students will be expected to:	Instructional Considerations
<p>A9.1 use an existing database to find information (Awareness)</p> <p>B9.1 enter data into a pre-existing database, edit data, use automated text (Awareness)</p>	<p>A9.1 Databases can help students to develop organizational and problem solving skills by engaging them in tasks that involve organizing and sorting information from research to test hypotheses, retrieving information, discovering relationships and commonalities, and predicting trends.</p> <p>B9.1 Compare non-computer databases to electronic databases. Convey to students that computers are advantageous because of the speed and ease with which information can be organized, stored, searched and retrieved.</p>

Database

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plan:</p> <p><i>Stuffed Toys</i></p> <p>A9.1 Submit queries in a pre-existing database such as a search engine or library book database.</p> <p>B9.1 Enter new information into a pre-existing database. This information may result from their own research activity.</p>		D3, F1, F4	100-9, 100-10, 100-13, 202-4		

Telecommunications

Students will be expected to:	Instructional Considerations
<p>B10.1 open a message (Awareness)</p>	<p>B10.1 Each student on Prince Edward Island is provided with an e-mail account. As with regular mail, e-mail requires an address. The address begins with a username followed by an @ symbol and the domain name. It is important to write the full e-mail address without any spaces.</p> <p>An older student can help a younger student login to their account, access e-mail software and then read the message that was sent.</p>
<p>B10.2 send a message (Awareness)</p>	<p>B10.2 The language skills of grade one students may not be sufficiently developed to independently send an e-mail message, however, with assistance a simple message may be sent.</p>

Telecommunications

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plan:</p> <p><i>E-mail Buddies</i></p> <p>B10.1 Grade one students are sent and email message by an older student. The older student assists the grade one student to access, read, reply or compose a message.</p> <p>B10.2 Alternatively, send each student a greeting prior to class. Demonstrate how to open, reply, or compose a message.</p> <p>Ensure that all students send and receive a message.</p>	<p>(Emergent) 2.1, 2.3, 5.1, 8.1, 8.2 (Early) 10.4</p>				<p>Health</p> <p>Refer to personal safety/abuse prevention supplement to the Family Life Education curriculum guide, grade 1 and 2</p>

Web Authoring

Students will be expected to:	Instructional Considerations
<p>A11.1 identify web page creation possibilities (Awareness)</p>	<p>A11.1 Many opportunities exist within the grade one 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.</p>

Web Authoring

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Language Arts	Math	Science	Social Studies	Other
<p>Technology Lesson Plan:</p> <p><i>Illustrating Stories</i></p> <p>A11.1 Use a web page editor to create a template to display student creations. Content may include text, scanned drawings or graphics.</p>	<p>(Emergent) 9.1, 10.4</p>				<p>Visual Arts 1.1.1, 1.1.2, 1.1.3, 1.2.2, 1.2.3</p>

Lesson Plan: Illustrating Stories

Outcomes

Technology: A5.1, B5.1

Language Arts: (Emergent) 9.4, 10.4

Visual Arts 1.1.1, 1.1.2, 1.1.3, 1.2.2, 1.2.3

Activity

Students can use computer graphics to illustrate stories, poems, journal entries and reports. Any graphics program can be used for this exercise; Color Magic, AppleWorks, or Windows Paint Brush. Ultimate Writing Creativity Center is also a very useful program which allows the students to add graphics to their stories. Graphic programs are a great way to assist students in developing hand-eye co-ordination and enhance mouse skills. Young children quickly learn by exploration to use the different graphic tools and adapt very readily to expressing themselves using this medium.

Resources

- art materials
- graphics software
- Ultimate Writing Creativity Center

Instructions

1. There are several ways to approach this activity. Students can have the story prepared first and then illustrate it, or they can create a drawing and then write a story based on the drawing (see sample at end of exercise). You may wish to fit the written work and illustration into a theme that you are currently exploring in your class.
2. Let students explore the medium. If using a program such as *Color Magic*, limit the amount of clip art (stamps) used and encourage as much freehand drawing as possible. Students may need to be reminded that pictures are created with shapes and briefly (2- 5 minutes) shown how to create different shapes, erase an object or page, and add color to an object. Having a volunteer in your classroom, pairing novices with more experienced users, or having student computer mentors may help you with this aspect, especially if you have a one-computer classroom.
3. Students can save their work if they haven't completed it by the end of their allotted time, and come back to it at a later date. When they have completed their work, have each student print out a hard copy.
4. Once printed, students can write the final version of their stories below the drawing if there is sufficient room or on an attached page.
5. Students may wish to add color to their illustration using crayons and markers.
6. Post the students combined electronic/paper efforts for all to see!
7. Teachers may also wish to publish the students work on their school web page. Using a WYSIWYG editing program, or by scanning the work, students are able to publish to the Web.

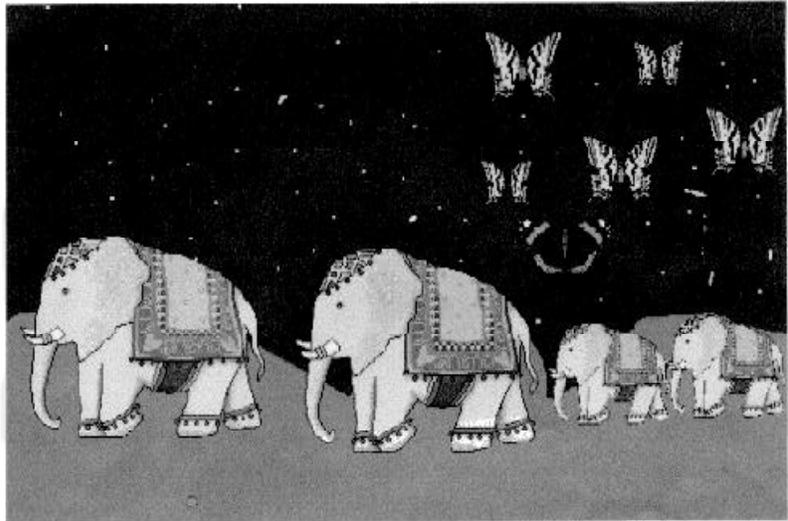
Lesson Plan: Illustrating Stories

Suggestions:

- if students are already familiar with basic graphic computer skills, encourage them to try flipping, rotating and rearranging objects to give the best final effect
- you may wish to have each student print their work upon completion. However, this can be time consuming with graphics, especially if you run into printer difficulties. It may be easier to have a printing session at a later date when everyone has completed their illustrations, or simply print out the files yourself.

Instructions

Sample of a grade 1 student's work:



They are Elephants they
are traveling on a
Journey. They are
traveling in groups
to Francisco and
it's at night.

Lesson Plan: Tinkering With Technology

Outcomes

Technology: B1.1

Science: 100-12, 100-13, 101-6,
102-2, 103-4, 202-4, 202-7

Language Arts: (Emergent)
1.1, 1.2, 1.3, 2.1, 2.3, 8.2, 9.1
(Early) 9.2

Math: F1, F3

Activity

Within the Language Arts Reflexions' theme, Tinkering with Technology, students learn about how things work and are made; past and present inventions; and inventors. After reading the expository texts that accompany this theme, students brainstorm about the nature of technology, inventions and inventors. Students consider technologies that we use at home and in the school and use their imagination to create a technology that would help them to accomplish a task of their choosing. The new inventions can be shared with others in the form of artwork created with a graphics program or by traditional means.

Resources

- Samuel Todd's Book of Great Inventions
- Who Uses this?
- How a House is Built?
- How is a Crayon Made?
- Mighty Dump Trucks
- art materials
- graphics software such as AppleWorks

Background

Technology is constantly evolving and will continue to impact upon the lives of our students as they continue through life. The speed at which change occurs dictates the necessity for helping individuals to begin to develop strategies for managing and utilizing technology appropriately and to suit their own purpose. During grade 1, teachers can begin to develop an awareness in students of how technology impacts upon our lives and how it can be used as a tool to solve many problems.

The Reflexions theme looks at technology in a broad way rather than focus on communication and information technologies. Technology can be defined as all of the tools and processes we develop to solve "problems arising from human adaptation to the environment (Common Framework of Science Learning Outcomes - Pan Canadian, 1997)". This broad definition allows for the inclusion of a wide range of tools such as thermometers, X-ray machines, microwaves, electric tools, trucks, and velcro. It also allows for the inclusion of communication and information technologies such as the computer and its peripheral devices (digital cameras, printers, scanners), FAXs, photocopy machines, telephones, answering machines, televisions, and VCRs. While working on this theme, teachers should look for opportunities to include these technologies.

Lesson Plan: Tinkering With Technology

Background (continued)

Throughout the grade I section of the APEF Science Curriculum document it is expected that students work towards developing “an understanding of the nature of science and technology, of the relationship between science and technology, and of the social and environmental contexts of science and technology”. The technologies considered within the grade 1 curriculum are associated with the three areas of study for this grade level, Materials, Objects and our Senses, Needs and Characteristics of Living Things and Daily and Seasonal Changes. The science outcomes provided with the lesson plan are taken from each of these three areas.

Instructions

1. After students have read the books that accompany Tinkering with Technology, brainstorm with the class to determine some of the technologies that are in our everyday lives. You may wish to have students bring in simple technology items from home or collect an assortment of items that can be found in the school. Have the students identify the purpose, and compare and contrast as many aspects of the suggested technologies as possible. For example, how many technologies help us communicate, keep clean, prepare our food, etc.? Which of the items have buttons, motors, digital screens, plugs, plastic parts, fasteners? With the items that you have in the classroom encourage students to use their senses to examine the different parts of the technological device/object.

Inspiration 7.5 can be used to assist the class in displaying the gathered information (see example below). Students can also create pictographs and charts to show common features of types of technologies (many items are made of plastic, have buttons, switches, digital displays, etc.).



Lesson Plan: Tinkering With Technology

Suggestions	Instructions (continued)
<ul style="list-style-type: none"> • Have a students write a description of their invention instead of creating artwork • Students can create a tool out of recycled materials taking into consideration the type of material and the purpose of the object being developed • Make a class visit to the photocopier or FAX machine. Arrange to send and receive a FAX from an outside individual. Make a class visit to the photocopier or FAX machine. Arrange to send and receive a FAX from an outside individual. • Practice using email and send a message to other classmates. 	<p>Engage the class in a discussion that will lead students to conclude that all technologies have a purpose: technology should make a task easier or more efficient. Students may suggest that these tools do somethings.</p> <ol style="list-style-type: none"> 2. In the next part of the discussion ask the students about some of the tasks that they are expected to do. Do they use any technologies themselves? Many students of this age would have had the opportunity to use telephones, VCRs, televisions, vacuum cleaners, computers, and possibly microwaves and photocopy machines as well as many of the technologies covered in the reading material. Ask the class to give the steps on how to use some of these items. Write these on a chart for all to see. For example, the directions for a vacuum cleaner might be: <ol style="list-style-type: none"> i. Plug cord into wall. (Discuss that electrical wires are in the wall and discuss safety around electrical outlets. Also refer to How a House is Built) ii. Turn switch on. iii. Move hose back and forth over floor/dirt. 3. Have the students create artwork showing an imaginative technology that they would invent to help them to do any task (including communicating). They should name their invention. Once the artwork is complete, have each student explain their invention and its purpose to the class or write a set of very simple directions on how it is to be used.

Lesson Plan: E-mail Buddies

Outcomes

Technology: A2.1, B2.1, E2.1, E2.2, E2.3, E2.8

Language Arts: (Emergent) 2.1, 2.3, 5.1, 8.1, 8.2 (Early) 10.4

Health: Refer to personal safety/abuse prevention supplement to the Family Life Education curriculum guide, grade 1 and 2

Activity

Schools are making extensive use of the buddy system where a student from a higher grade becomes a mentor for a student in a lower grade. In this activity, a student from one of the higher grades sends a message or story to a student in grade 1. Once the message has been sent by e-mail, the older buddy assists the younger student with retrieving the e-mail and reading the message. A good activity that encourages collaboration and co-operative learning, this exercise exposes the younger students to the concept of communicating with technology and gives the older students time to reinforce their skills.

Resources

- E-mail access

Instructions

1. The message sent by the older buddy could take many forms. It can be a message about a personal experience, a short story which the older student has written, or discussion about a book that they have read together.
2. The older student can help the younger student login to their account, access the e-mail software and then read the message that was sent to younger student.
3. If desired, the younger student, with the help of the buddy, could formulate and send a reply.

Lesson Plan: Puzzles 1

Outcomes

Technology: A5.1, B5.1

Math: E1, E3, E5, E7, E10

Activity

Students are challenged to construct a picture or shape using the set of on-screen geometric shapes that are contained in a graphics file. On screen puzzles such as these provide the learner with the opportunity to explore geometric shapes and relationships. They also encourage the development of problem solving skills and spatial reasoning.

Resources

- AppleWorks Drawing software
- Appleworks files: G1draw1.cwk
G1draw2.cwk
G1puzz1.cwk
G1puzz2.cwk
G1puzzle3.cwk

Instructions

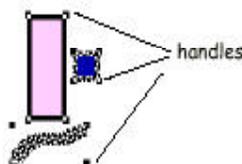
Graphics programs provide an ideal environment for exploring and experimenting with geometric shapes and relationships. They can be used to help students develop eye- hand coordination (mouse skills) and aspects of spatial sense. Graphics programs are particularly well suited for activities that involve:

- problem solving (puzzles) and the concept of multiple solutions
- reinforcement of shape recognition
- investigating and predicting the results of combining and subdividing shapes

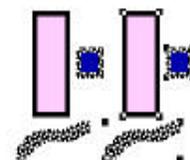
1. Open the activity of choice and use the **SAVE AS** command (under **FILE**) to save the file with a different name. This is to prevent over-writing the template file. (Teachers can have students download these files from the online site or teachers can download the files and then send all the files to students.)

2. Some of these files require that the student creates his/her own shapes. However, most of these files involve the student moving the geometric shape into place. In some activities the shape must first be duplicated. To do this, click on the shape to select it. You will see little handles on the corner of the shape when it is selected. Next hold down the **CTRL** key and, while holding it down, tap the **D** key once. This will make a duplicate of the shape. Tapping the **D** more than once will make extra copies. As an alternative to using the **CTRL/D** combination, select the shape, click on **EDIT** and then click on **Duplicate**.

OBJECTS
SELECTED



OBJECTS
DUPLICATED



Lesson Plan: Puzzles 1

Suggestions

- Have students create their own puzzles for another individual to solve.

3. Once the puzzle is completed the student can save it or print it to include it in his/ her math folder.

Helpful Hints

- The most important thing to remember is to make an extra copy of any activity file AND have students use the SAVE AS command as soon as they open the file.
- If a puzzle piece becomes distorted as a result of resizing, close the file and restart. If you have been saving every few minutes you will not have lost too much work, and the puzzle piece will be back to the correct size for you to continue.
- Have students work in pairs to encourage collaborative learning.

Lesson Plan: Living Things

Outcomes

Technology: A4.3, A4.4, A4.5

Science: 100-8, 200-1, 203-4

Language Arts: (Emergent) 1.1, 1.2, 10.3

Visual Arts: 1.2.1, 1.4.3

Suggestions

- Use picture cards of a variety of objects to have students create two piles - one for living and one for non-living. Make anecdotal notes of your observations.

Lesson plan created by: Michele Carragher, Heather Cudmore, Shelley Lamphier-Flood, Sarah Grace Schurman and Elizabeth Tumblin.

Activity

1. Brainstorm as a class responses to the question "What is a living thing?" (You may find using Inspiration software and an LCD helpful, or more traditional means such as chart paper, word cards, or pictures from picture files.)
2. Sort and categorize with the students their responses.
3. Create graphic representations of students understandings of what a living thing is, such as through the following activity options:
 - a) Living Things Quilt
Use Ultimate Writing and Creativity Center or AppleWorks to create graphics of living things in coloring book format (black and white). Print off the pages and have students colour their pictures. Display in a quilt format.
 - b) Class Book
Use Ultimate Writing and Creativity Center or AppleWorks to create text and graphics in response to the statement "If I could be an animal(plant), I would be _____ because ... ". Prepare a class book of the printed creations to share with parents/other classes.

Resources

Basic steps for Ultimate Writing and Creativity Center:

http://www.edu.pe.ca/joumeyon/pro_d_pages/UWCC_basics/index.htm

AppleWorks Information:

http://www.edu.pe.ca/joumeyon/pro_d_pages/appleworks.htm

Inspiration 7.5 Information:

http://www.edu.pe.ca/joumeyon/pro_d_pages/Using_Inspiration/inspiration7.htm

Lesson Plan: Comparing Living Things

Outcomes

Technology: B8.1

Science: 100-8, 200-1, 203-4

Language Arts: (Emergent) 1.1, 1.2, 10.3

Lesson plan created by: Michele Carragher, Heather Cudmore, Shelley Lamphier-Flood, Sarah Grace Schurman and Elizabeth Tumblin.

Activity

Comparison Chart

1. Discuss how living things are the same and how they are different.
2. Explore specific websites in small groups to find out information about specific plants/animals.
3. Record the information found in a comparison chart using words and pictures. [Columns could include how the chosen living thing is the same as, or different from the student, using categories to compare the looks, size, movement, and means of breathing.]
4. Have students share what they learned with the class.

Resources

- Sample learning log
- Island School Website Themes found at:
http://www.edu.pe.ca/joumeyon/resources_pages/websites/WebSitesbyTheme.htm
- Internet Search Engines

Reflection

Have students draw a picture of one thing they learned from their research, and one thing they learned from someone else's research. They may wish to use words as well.

Sample learning log:



Living Things

Learning Log Name : _____ Something I learned myself
... Something I learned from someone else ...

Lesson Plan: Patterning With Shapes

Outcomes

Technology: A5.1, B5.1

Math: C4, E3

Visual Arts: 1.1.2, 1.6.2, 1.7.2

Activity

Graphics programs provide an ideal environment for exploring and experimenting with geometric patterns and relationships. In Shapes 'n Patterns, students work alone or in pairs to create and extend pattern sequences with geometric shapes. Different activities which are based on the same concepts are suggested for grades 1-3. A number of math and art outcomes are addressed for these grade levels. This type of activity involves collaborative learning, problem solving, creative thinking and encourages the development of hand-eye coordination.

Resources

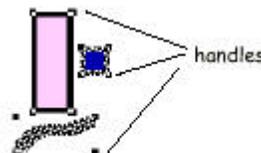
- AppleWorks Drawing
- **Appleworks Files:** G1patt1.cwk
G1patt2.cwk

Instructions

Preparation - Involve the class in a discussion about patterns. Have the students look about the class and point out patterns that they see on books, clothing, wallpaper, curtains, etc. Discuss with the class the fact that patterns can be created by repeated elements such as lines, colours, shapes, etc. Even numbers can be used to create patterns.

In the computer lab - Any graphics program can be used for this exercise. However, AppleWorks Drawing allows the beginning user the greatest ease when editing, moving and deleting objects that they have created. AppleWorks is required if you wish to use the files listed in the Materials section.

Duplicating objects - In most cases, students will be creating patterns using shapes that they have drawn. Once a shape is created it can be duplicated as follows: Select the shape by clicking on it. If the shape is composed of more than one object hold the SHIFT key down to select all the components. You will see little handles on the corners of the objects when they are selected. In the following example, 3 objects are selected to make one component of the repeat pattern used (see bottom of this page).



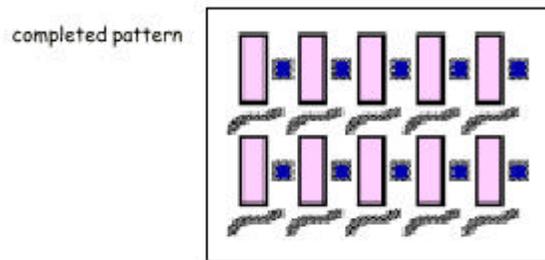
Lesson Plan: Patterning With Shapes

Suggestions

- SAVE frequently.
- If you were unhappy with the last step you made, immediately before doing ANYTHING else, click on EDIT and UNDO.
- You can use the ZOOM feature to enlarge your view on the screen if you are working with fine detail.

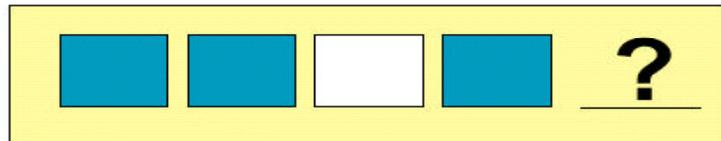
Instructions (continued)

Next hold down the CTRL key, and, while holding the key down, tap the D key once. This will make a duplicate of the shape in a similar fashion to using a rubber stamp. Tapping the D more than once will make extra copies. As an alternative to using the CTRL/ D combination, select the shape, click on EDIT and then click on Duplicate.



There are a number of ways to approach the next activity.

Students should first work with completing simple patterns such as those that are started in the files G1patt1.cwk and G1patt2.cwk. Students should use the SAVE AS command as soon as they open the file, and save the file under a different name. Use the DUPLICATE command to continue the pattern.

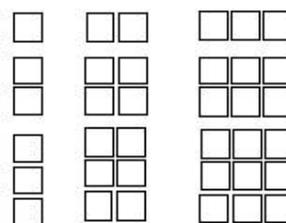


Students can also create their own patterns by focusing on any attributes: number of sides, orientation, shape, colour, size, etc. Encourage students to make patterns that are not always linear and some that fill the page.

Students can work in pairs with one partner completing a pattern that the other partner started. For this level, encourage students to look at the characteristics of the pattern. How are two patterns similar and how do they differ? Patterns may be classified as repeating patterns:



or growing patterns:



Lesson Plan: Shapes Make Pictures

Outcomes

Technology: A5.1, B5.1

Math: E3, E5, E10

Visual Arts: 1.1.4, 1.2.1, 1.2.2

Activity

A graphics program is both a tool and a medium for the developing artist. Within the graphics environment, students can explore and experiment with relationships and properties of geometric shapes. As students engage in using graphics programs they are learning how to think creatively and problem solve. In this introductory lesson, students use the on-screen tools to create artwork with basic geometric shapes.

Resources

- Graphics program such as AppleWorks Drawing
- Adventures in Art 1

Background

The Mouse - While the mouse can vary, the basic variety has a left and right button, and a little movable ball on the underside. The mouse is used for opening, closing, moving and resizing windows. In graphics programs it is also used to manipulate objects about the screen. In word processing applications it is used to select text and move the cursor about the document. The mouse has three operations:

- 1) Clicking - to move the cursor or select an object, the left mouse button is clicked once. The right button is only used in some programs for special functions. However, the settings for these two buttons can be switched to make clicking easier for the left-handed user.
- 2) Double-clicking - clicking the left mouse button quickly twice in succession without moving the mouse in between clicks.
- 3) Dragging - click the left mouse button and hold it down while moving the mouse pointer across the screen. This allows for text to be selected and selected objects to be moved.

Instructions

Preparation - Ask students to name some of the shapes that they know. Ask the students to look around the class and identify shapes in objects in their classroom. What shape is the most common? Have them look at artworks such as that by Takeo Yamaguchi on page 15 of Adventures in Art and identify the shapes that they see.

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

Lesson Plan: Shapes Make Pictures

Suggestion

- First time users may have difficulty co-ordinating the pointer movement on the screen with moving the mouse. To assist them, have them keep their wrist straight and use the shoulder more when moving the mouse until they get the feel of it.

Instructions (continued)

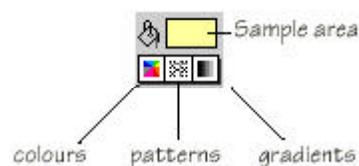
Introduce students to the tool bar. Clicking on the tools enables you to make shapes.



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

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

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



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

Have students create an artwork using the shapes they discussed earlier. Houses, rocket ships, trees, faces, cars, etc. are easiest for beginners.

Lesson Plan: Stuffed Toys

Outcomes

Technology: B9.1

Math: D3, F1, F4

Science: 100-9, 100-10, 100-13, 202-4

Activity

Activities which encourage collecting, organizing and sorting data, as well as the recognition of trends, help develop the fundamental skills that will be used with databases. For primary students, off-line activities (i.e. those which do not involve using a computer) are used to introduce database concepts. In this activity, students collect and record information about their stuffed animals. The class then works to organize the information in various ways to answer both student and teacher directed questions.

Resources

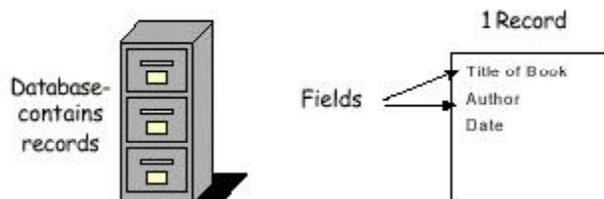
- Index cards containing fields names
- AppleWorks: Database
- Stuffed toys

Background

Databases can help students to develop organizational and problem solving skills by engaging them in tasks that involve:

- organizing and sorting information to test hypotheses and retrieve information
- discovering relationships and commonalities
- predicting trends

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



Lesson Plan: Stuffed Toys

Suggestions

- If the reading level of your students is below that required to read very much written information, have the students use pictures (or stickers) in place some of the written text in fields. They can also use markers to fill in information in the Colour field.
- Instead of sorting on the floor, the teacher can use a bulletin board and have different students play the role of helper when moving information about.
- Instead of sorting stuffed toys sort students according to the hair colour, sex, birth month, pets, what they are wearing, etc. Students can even wear two or three appropriate labels.

Instructions

- 1. Collecting and recording information** - Each student brings his/her favourite stuffed toy to class and is provided with an index card or photocopied sheet containing the field names (e.g. Type, Colour, Length and Name).

Stuffed Toys

Type _____

Color _____

Length _____

Name _____

Adapt the type of information to be collected to match the studentsTM skills (If the students are not familiar with how to measure length for example, choose other characteristics such as weight (heavy vs. light) and texture (soft, fuzzy, smooth). If you include the type of material that the toy is made out of, this activity will fit into the unit Objects are Made from Materials in the APEF Science curriculum.

2. The students fill in the information on their cards as the teacher fills in a sample on the overhead projector or on the blackboard.
3. Once completed, the teacher can collect the cards to make the database complete. At this point the teacher could use the collected cards to explain that the field name is a place to store one bit of data (colour, length, type etc.) and several different field names make a record. A collection of records with the same field names is a database file. A database file can be stored on paper or on a computer. Students, with teacher assistance, can add their information to a teacher-created database.
4. **Sorting data** - Students sort their cards on the floor in rows according to common characteristics. For example all the teddy bears go in one row, while all the rabbits go in another. Try sorting in a variety of different ways.
5. **Analysing data and looking for trends** - Have the students analyse the data by prompting the students with questions and having the students sort the cards appropriately to find out the answer. "How many are made with smooth material, fuzzy material?" "How many stuffed toys are brown?" "What is the longest stuffed toy?" "How many stuffed toy names start with the letter M?" More complex questions can also be asked. For example, "How many stuffed toys are pink and are rabbits?"

Ask the students what are some other patterns or trends that they notice. For example, what is the most common stuffed toy? What is the most popular colour of Teddy bear?

Lesson Plan: In My Own Words

Outcomes

Technology: B7.1, B7.2

Language Arts: (Emergent) 9.1, 10.1, 10.4

Activity

This exercise is designed for teachers to use at the beginning of the first school year. Emergent writers can create sentences using a word processor instead of a pencil and paper. In this exercise students write 1-2 sentences using the core words of the week. As with paper media, students use inventive or temporary spelling to complete the writing exercise. Initially a 20 minute session on the computer is usually ample time for this age group.

Resources

A word processor:

- Appleworks
- Word Perfect
- Ultimate Writing Creativity Center

English Language Arts, Entry - 3, Curriculum Guide

Instructions

As the first exposure to word processing, the amount of material that the students types in is unimportant. Depending on the writing level of the students, they can:

- create a part of an alphabet typing upper and lower case letters
- enter core words or groups of words focused on a topic such as colours
- type in phrases or attempt short sentences

1. Students may wish to make use of the **Ultimate Writing Creativity Center**.
2. Have students type in the first core word.
3. Use the ENTER key to move to the next line.
4. Type a sentence using the core word.

The BACKSPACE, SPACE BAR and ARROW keys should also be demonstrated to students. Remind them that only one space is placed between words.

Depending on the speed of the students, have them complete a second core word or insert a picture.

5. To save, Click on FILE and then SAVE AS. This should default to the students "G" Drive. Type in a file name.
6. Click on FILE and select EXIT THE PROGRAM when finished. Select YES at the prompt "Are you sure you wish to leave the program?".
7. If so desired, students can print work out and illustrate it.

Lesson Plan: In My Own Words

Exemplar

RED

See the red
valentin



BLUE

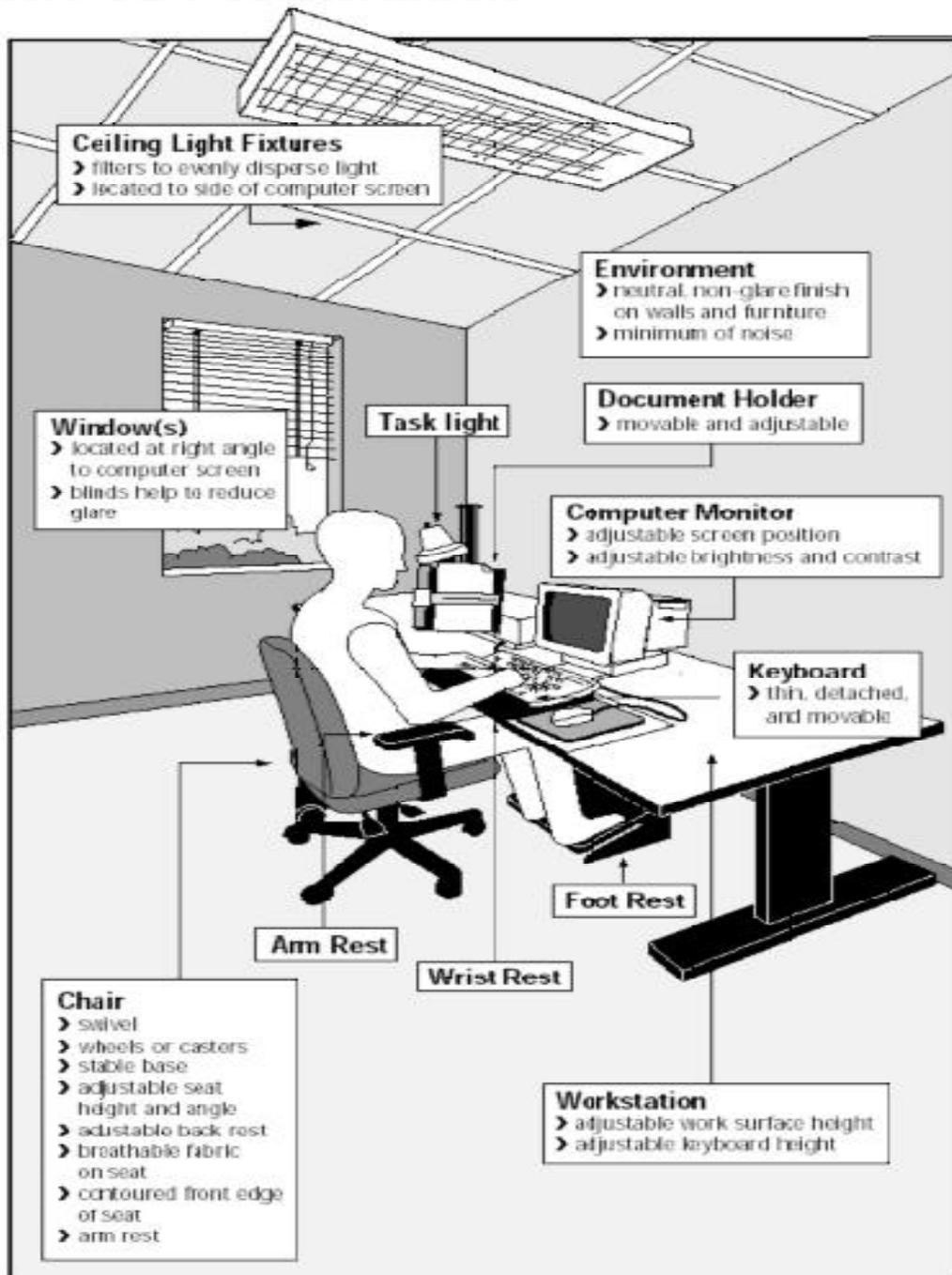
The grls i is
blue

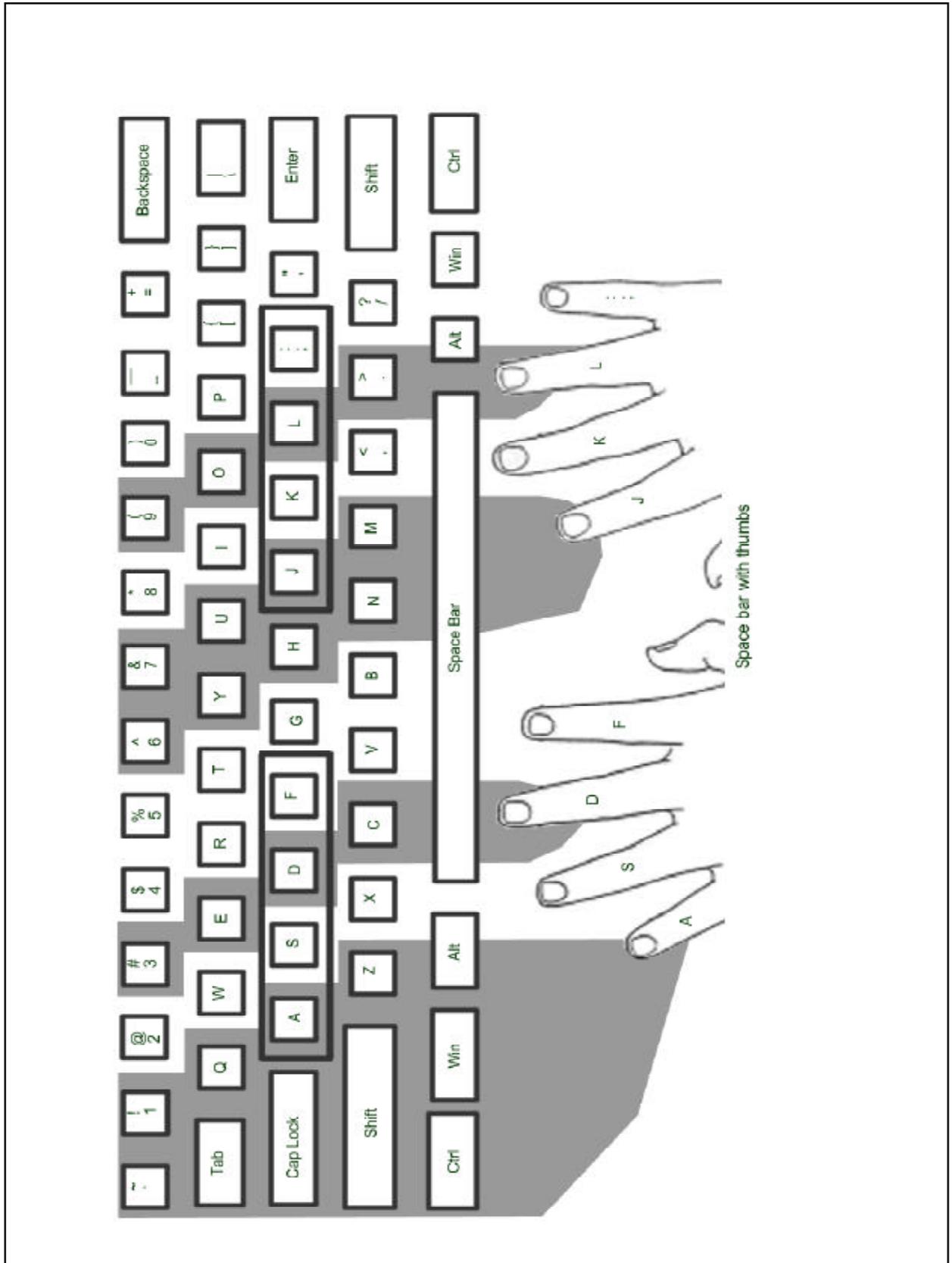
Helpful Hints

- Introduce the keys used in this exercise to the students before the students go to the computer. This may be accomplished by using an LCD projector. If this device is unavailable, display a diagram of the keyboard on paper, or on the blackboard to show the position of the keys.
- Have the students work in pairs. A good combination is a novice computer user with a student that has had some experience with computers. Assign one student the responsibility of “Key Master” the student who uses the mouse and keyboard. The Key Master’s partner can help find the keys and point to them but should not touch them until it is their turn.
- After a set amount of time (5-10 minutes), or after the typing of the sentence(s) is complete, have partners switch places at keyboard. You may wish to use a timer.
- Some teachers find that volunteers or student mentors are a great help when introducing younger children to the computer.
- Show students the ESC key soon after entering the program to save yourself from being repeatedly called to the computer. Dialogue boxes stating that The cursor can not move beyond the end of the text occur frequently if the arrow keys are held down too long.
- In a one-computer classroom, if you wish to prevent constant interruptions, use a visual symbol such as a red plastic cup that students can place on the top of the computer to signal that help is needed. When the teacher or a peer is free, they can help the student out.

Appendix

The VDT Workstation





Glossary

Abbycat: PEI Public library database system

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

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

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

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

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

Attachment: file that is attached to an email

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

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

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

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

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

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

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

Bullets: a symbol appearing before items in a list.

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

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

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

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

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

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

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

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

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

Commercial ware: commercial software which requires purchase and registration.

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

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

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

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

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

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

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

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

Decompression: process of decoding or reading encoded data.

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

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

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

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

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

Dynex: PEI (French) school library database system

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Import: to bring in external information

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

Interactive syllabus: an electronic course outline

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

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

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

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

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

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

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

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

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

Microcat: PEI (English) school library database system

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

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

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

Network: a communication system connecting two or more computers.

Notebook: another name for an individual spreadsheet.

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

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

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

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

Principles of design: five universally recognized principles are contrast, unity, pattern, movement, and rhythm. Used in combination these principles create 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, Yahoooligans)

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

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

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

Software: program or application that runs on a computer.

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

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

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

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

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

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

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

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

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

Un-grouping: separating objects that were previously grouped.

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

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

Virtual reality: an artificial environment created with computer technology

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

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

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

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

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

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

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

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