Prince Edward Island
CANADA

Education and Early Childhood Development







Journey On

Working Toward Communication and Information Technology Literacy

Kindergarten

January 2011 Draft

P.E.I. Department of Education and Early Childhood Development, 2011

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 (2010), provides grade specific curriculum outcomes that have been assigned to core curriculum subjects. This kindergarten document contains specific technology outcomes, instructional considerations, teaching suggestions - activities and assessment strategies, lesson plans, and links to other curriculum areas.

This document 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

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The communication and information technology committees were instrumental in providing input for the curriculum outcomes grades K-12 framework on which Journey On (2010) is based. Past and present members of the committees are listed below:

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Contents

Vision

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

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Introduction

Purpose of Document

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

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

It is recognized that many disciplines have their own specialized technologies and technological processes. Students will have the opportunity to develop skills required to use these specialized technologies within the context of courses such as Computer Science, Science, Career Exploration, Visual Communication, Industrial Arts, and Home Economics. CIT differs from other technologies because of its vast and far reaching applications in all disciplines.

The purpose of *Journey On* is to focus on how CIT can be used from K-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 knowledge and 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.*

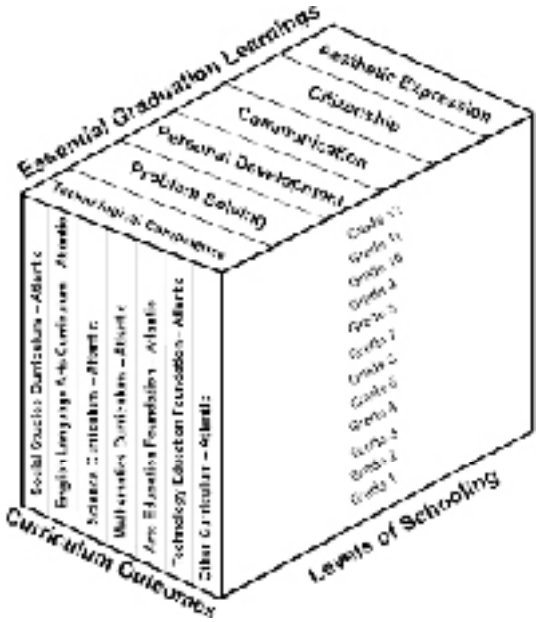
Essential Graduation Learnings (EGLs)

"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 that identify what students should know and be able to do at a particular grade level. These 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 K-12 curricula of Prince Edward Island, and which influence methods of delivery and instruction.

Cooperative Learning and Group Work

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

Creative Thinking

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

Critical Thinking

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

Diversity/Equity Education

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

Resource-based learning

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

Learning Styles

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

Technology Curriculum Outcomes

GENERAL TECHNOLOGY OUTCOMES
(as per APEF Technology Foundation Document)

GTO A- Technology Problem Solving
Students will be expected to design, develop, evaluate, and articulate technological solutions.

GTO B- Technology Systems
Students will be expected to operate and manage technological systems.

GTO C- History and Evolution of Technology
Students will be expected to demonstrate an understanding of the history and evolution of technology and of its social and cultural implications.

GTO D- Technology and Careers
Students will be expected to demonstrate and understanding of current and evolving careers and of the influence of technology on the nature of work.

GTO E- Technological Responsibility
Students will be expected to demonstrate an understanding of the consequences of their technological choices.

Areas

1. **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.

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

3. **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.

4. **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.

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

6. **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.

7. **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.

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

9. **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.

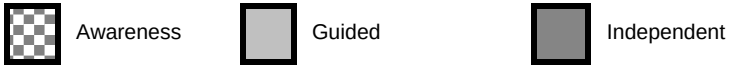
10. **Telecommunications** - Refers to all types of data transmission, from voice to video using a variety of media such as copper cable, fibre optics, satellites, wireless technology, etc.

11. **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:

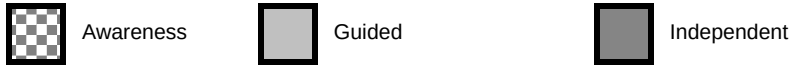
Awareness - the student is exposed to the technology as it is being used by others.
Guided - the student begins to use the technology with the help of others.
***Summative Assessment**- beyond this grade level, students will be expected to meet the outcome independently.
Independent - the student uses the technology without assistance.

Computer Systems



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

Social, Ethical, and Health



	Students will be expected to:	K	1	2	3	4	5	6	7	8	9	10	11	12
A2.1	identify aspects of an ergonomic workstation (lighting, monitor angle, work placement, keyboard height, seat height, posture, etc.)													
B2.1	demonstrate proper touch keyboarding techniques (ie: home row, quick key strokes, proper reaches)													
C2.1	examine current Canadian law governing the use of technology													
D2.1	determine the technological requirements for specific career goals													
E2.1	respect equipment and other student's work													
E2.2	work co-operatively at work station													
E2.3	adhere to acceptable use agreement for work station/network/Internet													
E2.4	use electronic communication etiquette													
E2.5	adhere to rules of freeware, shareware and commercial ware													
E2.6	adhere to copyright and privacy laws, give credit to sources of information (MLA, APA)													
E2.7	identify ethical issues involved with Internet content, awareness of inappropriate use of technology													
E2.8	demonstrate caution before sending personal information over the internet													
E2.9	follow publishing etiquette (suitable language, no discrimination, etc.). Adhere to the guidelines for school web pages as outlined by PEI Department of Education.													

Internet

 Awareness  Guided  Independent

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

Concept Maps

 Awareness  Guided  Independent

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

Graphics

 **Awareness**  **Guided**  **Independent**

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

Spreadsheets

 Awareness  Guided  Independent

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

Word Processing

 Awareness  Guided  Independent

	Students will be expected to:	K	1	2	3	4	5	6	7	8	9	10	11	12
A7.1	create and edit data files and form documents to perform a merge													
A7.2	identify examples of desktop publishing (i.e. newspaper, catalogue, ads, brochure)													
B7.1	use a grade level appropriate wordprocessor to create and edit written work													
B7.2	locate characters on a keyboard and identify functions of word processing (ie. cursor, insertion point, enter key, space bar, upper case, backspace, shortcut key)													
B7.3	use editing tools to revise work (i.e. spell check, thesaurus, find and replace)													
B7.4	change font, size, colour, style (ie. bold, italics, underline, insert special characters, drop capitals)													
B7.5	format text (ie. justification, line spacing, outlines and bullets, text wrap)													
B7.6	format documents (ie. using margins, tab rulers, indents, page center, border, watermark)													
B7.7	insert a graphic and manipulate, (ie. resize, add borders and fill, create text art)													
B7.8	insert and format tables and text boxes (ie. lines, fill, columns, rows, borders, alignment)													
B7.9	format multi-page documents with headers, footers, page numbers, page breaks and keep text together function, change page orientation/size (ie. text presentation features)													
B7.10	insert automated features (ie. date and file stamp)													

Multimedia

 Awareness  Guided  Independent

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

Database

 **Awareness**  **Guided**  **Independent**

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

Telecommunications

 Awareness  Guided  Independent

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

Web Authoring

 **Awareness**  **Guided**  **Independent**

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

How to Use this Document

Paper Document

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

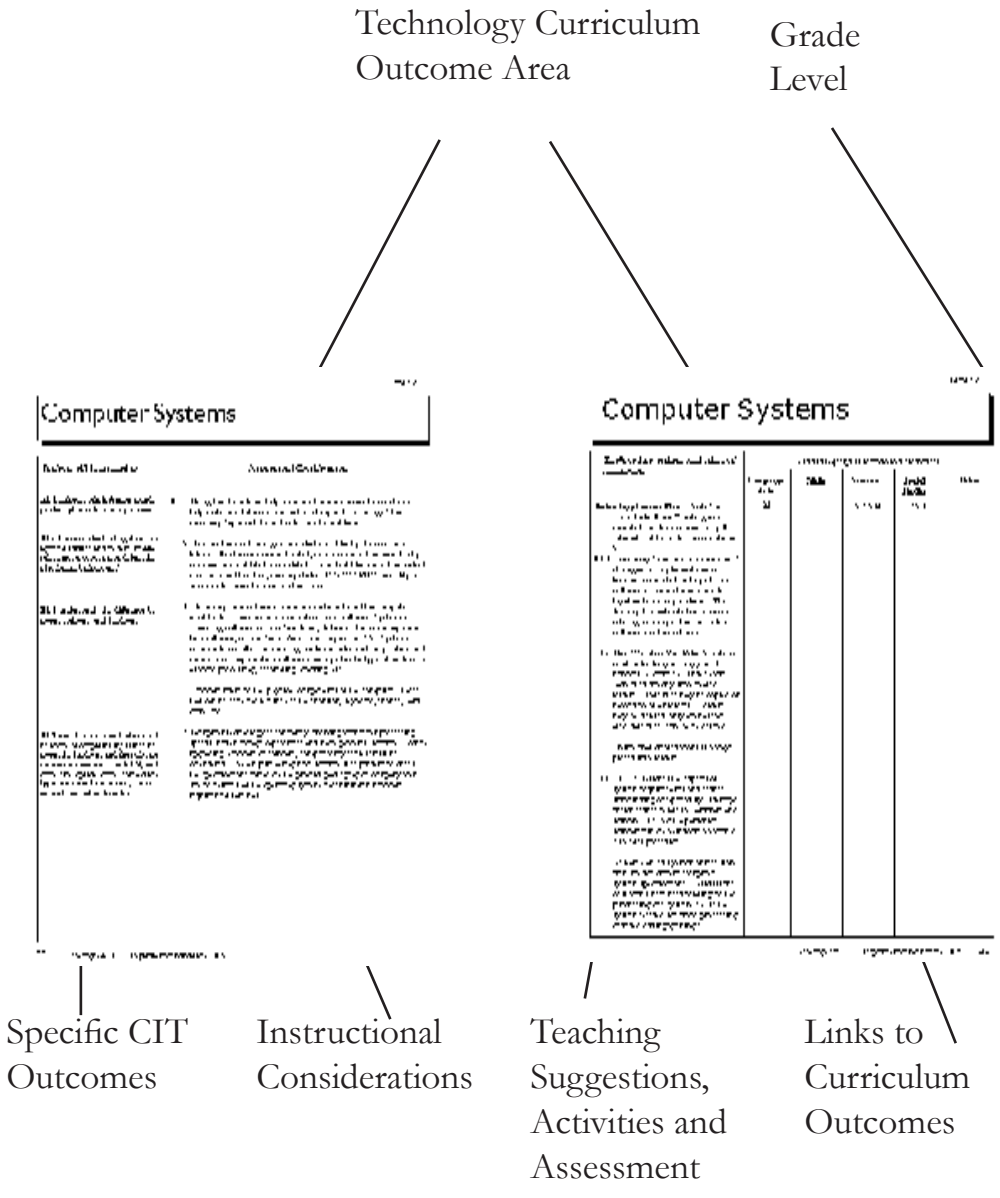
The remainder of the document addresses the level and defines specific knowledge and CIT skills expected of students as they work toward technology competency. Practical considerations are given for incorporating CIT into the curriculum and accompanying lesson plans. The information is presented in a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

On-line Document

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

Two Page-Layout

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



Two Page-Layout in Detail

letter designation of general technology outcome

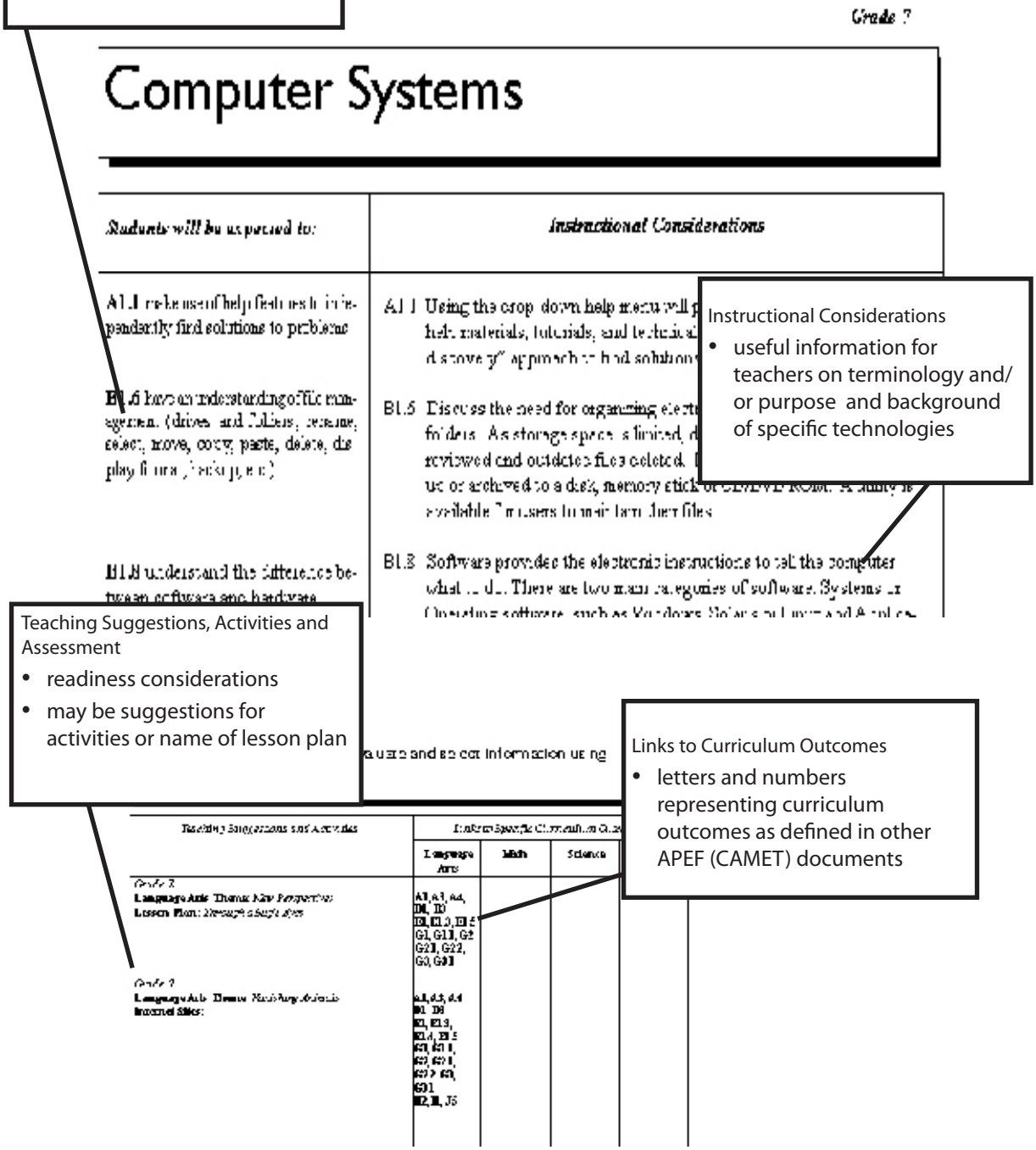
A5.1

indicates first skill in subdivision

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

Specific Outcomes

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



Grade 7

Computer Systems

Students will be expected to:	*Instructional Considerations*
A1.1 make use of help features such as to independently find solutions to problems	A1.1 Using the drop down help menu will p... help materials, tutorials, and technical... discovery approach to find solution...
B1.6 have an understanding of file management. (drives and folders; rename, select, move, copy, paste, delete, display file properties)	B1.5 Discuss the need for organizing electr... folders. As storage space is limited, d... reviewed and outdated files deleted. ... use or archived to a disk, memory stick or CD/DVD ROM. ... available for users to maintain their files
B1.8 understand the difference between software and hardware	B1.8 Software provides the electronic instructions to tell the computer what to do. There are two main categories of software. Systems or Operating software, such as Windows, Mac OS, Linux and Apple...

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

...a users and access information using...

Links to Curriculum Outcomes

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

Teaching Suggestions and Activities	*Indicate Specific Curriculum Co...*			
	Language Arts	Math	Science	
Grade 7 **Language Arts Theme:** *New Perspectives* **Lesson Plan:** *Through a Bug's Eyes*	A1, A3, A4, B1, B3 B1, B1.3, B1.5 G1, G1.1, G2 G2.1, G2.2, G3, G3.1			
Grade 7 **Language Arts Theme:** *Multiple Intelligences* **Internet Sites:**	A1, A3, A4 B1, B3 B1, B1.3, B1.4, B1.5 G1, G1.1, G2, G2.1, G2.2, G3, G3.1			

Computer Systems

Students will be expected to:	Instructional Considerations
B1.1 login, open and close a program, open, save and close a file with mouse (Awareness)	B1.1 As students enter the public school system they will be provided with a username and password to login to the computer system.Passwords will change but login names should remain the same from kindergarten through grade 12. Teachers need to model for students on how to login, open, save, close a program with a mouse. As kindergarten students may not yet recognize all their letters and numbers, they will need support when they login to the system. Teachers may write logins and passwords on cards that students can use. Make sure that this information is stored in a safe location when not being used. It is also important to print the logins and passwords in upper case letters as this is what students will see on the keyboard. * Note that although letters appear on keyboard in upper case, keyed letters will appear on screen in lower case unless shift key or caps lock function on keyboard is used. Most logins and passwords are case senstive. When kindergarten students are using the computer, they may be able to use the peer helping system. A student who has some experience with computers may be paired with a student who has little or no experience with a computer. Also, teachers may be able to use older students in the school to assist them.

Computer Systems

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Early Literacy	Early Numeracy	Science	Social Studies	Other
Technology Lesson Plans: Tinkering with Technology pg.54	1.5, 3.4, 3.5, 4.1, 4.2, 4.3		1.1		Health and Physical Development-1.2 Creative Development-1.2
B1.1 Demonstrate for students how to login, open, and close a program. This can be done with a large group if an LCD projector is available.					

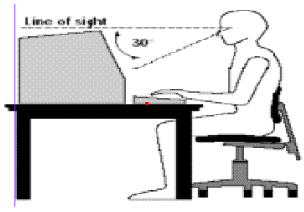
Computer Systems

Students will be expected to:	Instructional Considerations
C1.1 identify technologies that are found in everyday life (Awareness)	C1.1 Technology is constantly evolving and will continue to impact upon the lives of our students as they continue through life. During kindergarten, 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. Students will be encouraged to think about technologies found in their home, communities, and school.

Computer Systems

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Early Literacy	Early Numeracy	Science	Social Studies	Other
C1.1 Brainstorm using Concept Mapping software such as Inspiration 7.5 technologies found in everyday life. If available, an LCD projector can be used to display this. Students might use online services to find magazines that contain images of technology use. Online catalogues are also available through the internet. Using invented spelling, students will write about an image that they have picked. This activity can be done individually or with a partner. Using software such as Ultimate Writing Creativity Center, students could create artwork showing how technology helps them. Have each student explain their work to the class. For more information on Ultimate Writing Creativity Center, visit the following site: http://edu.pe.ca/journeyon/pro_d_pages/uwcc.htm					

Social, Ethical and Health

Students will be expected to:	Instructional Considerations
A2.1 identify aspects of an ergonomic workstation (Awareness)	A2.1 Ergonomics or the relationship between people and their work is a science with a growing body of evidence. Applying ergonomics by adjusting your chair, work surface, monitor, keyboard, mouse, lighting and modifying your work habits with lifting techniques all have reduced the risk of injury at our workplaces. Furthermore, it increases productivity. (Occupational Health and Safety Manual, Draft 2004) Teaching young children to position themselves properly at the computer and using good posture is essential to prevent the future development of serious injury.  Young children have to be taught to position themselves properly at the computer. Good posture is essential to prevent future development of serious injury. The following need to be considered: 1. Children's eyes should be level with the screen. 2. There should be child sized chairs and desks set up for computer use. 3. Safety: i.e. cords out of children's reach, etc.
B2.1 demonstrate proper touch keyboading techniques (Awareness)	B2.1 "We need to give careful attention to helping students use their technological skills in the interest of learning and demonstrating what they know. We want them to be comfortable with electronic conversations and learning groups, to use rapid and efficient keyboarding for word processing...." (pg. 179 Fountas and Pinnell, The Continuum of Literacy Learning grades K-8 ,2007) The keyboard is a good tool for letter recognition.
E2.1 respect equipment and other student's work (Awareness)	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.

Social, Ethical and Health

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Early Literacy	Early Numeracy	Science	Social Studies	Other
Technology Lesson Plan: E-mail Buddies pg.55 A2.1 Introduce aspects of an ergonomic workstation (see appendix) Model proper posture and position at the keyboard. Have students help you set up the computer station explaining the reason for why it is set up the way it is. A few simple rules to follow: Don't sit too close to the screen. Take frequent breaks to stand up, stretch and wiggle. Don't use the mouse for long periods of time. An example of using ergonomics would be the following from Cornell University Department of Ergonomics (http://ergo.human.cornell.edu/CUEHinfo.html). B2.1 Early emergent readers can use the keyboard for letter recognition. Depending on skills and level of student knowledge, Ultimate Writing and Creativity Center can be used as an entry level word processor. The software "Typing Pal Jr." is also available in schools. This would be a good introduction to letters and finger placement for kindergarten students. E2.1 Ensure that wires are properly connected and secured. Encourage students to report any workstation abnormalities. Discuss classroom rules for behavior.	3.1, 3.2, 4.1, 4.2, 4.3				Health and Physical Development-Health and Well Being 2.4, 2.5

Social, Ethical and Health

Students will be expected to:	Instructional Considerations
E2.2 work co-operatively at work station (Awareness)	E2.2 Working at a computer offers students opportunities to work together. Working cooperatively includes: listening to others, sharing ideas, taking turns keyboarding and using the mouse, asking questions, and participating in discussion and storytelling.
E2.3 adhere to acceptable use agreement for work station/network/ Internet (Awareness)	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)
E2.8 demonstrate caution before sending personal information over the Internet (Awareness)	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. "...it is important that even younger students begin to understand that using the Internet requires caution as well as ethical and responsible behaviour." (pg. 179 The Continuum of Literacy Learning Grades K-8 Fountas and Pinnell, 2007) A number of resources on Internet Safety are available to teachers. One of these resources can be found at the following site: http://www.edu.pe.ca/journeyon/pro_d_pages/internet.htm Personnel from the Technology in Education section of the Department of Education and Early Childhood Development are also available for assistance.

Social, Ethical and Health

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Early Literacy	Early Numeracy	Science	Social Studies	Other
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/OneComputer Classroom.htm) E2.3 Discuss the contents of the Acceptable Use Policy found on the following url: http://www.gov.pe.ca/eecd/index.php3?number=1027957&lang=E 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)					

Internet

Students will be expected to:	Instructional Considerations
A3.1 demonstrate awareness of the Internet as a source of information (Awareness)	A3.1 During the K-12 grades, students within the school system must not use the Internet without teacher supervision. Most of the time, independent work by students in kindergarten will involve working with preselected websites. There are also opportunities for teachers to model Internet searching with small and large groups of students. Teachers should take the opportunity when using the Internet in class to begin to discuss appropriateness and quality of information they find with their students. There is a wealth of Web sites on the Internet that provide the opportunity to learn about communities around the world.

Internet

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Early Literacy	Early Numeracy	Science	Social Studies	Other
Technology Lesson Plan: Promoting Internet Safety pg.67 A3.1 Through whole class and small group discussions, provide opportunities for investigation using the internet and brainstorm open ended questions that they want answered(eg. during a discussion about worms, a child may ask, "Do worms lay eggs?"). The teacher can model how to search for information on the Internet. Use this information to record answers, chart information, sort/classify. A scavenger hunt/walk through a park using a digital camera would support this inquiry. Students may think of additional questions they want to look up on the Internet. Demonstrate the use of various multimedia sources such as Google Earth to discuss information about the animals that live in our province. Explore and discuss animals from other parts of the world. Discuss climate, endangered species, culture, community. Have students brainstorm and write/illustrate stories that interest them. As of 2009, a service called Nettrekker (http://schoolca.nettrekker.ca) has been purchased for elementary schools on a year to year basis. This password protected service filters websites by appropriate content, grade level, readability and curriculum area.	3.11, 3.12				Health and Physical Development-Health and Well-Being 2.4, 2.5

Concept Maps

Students will be expected to:	Instructional Considerations
A4.3 categorize ideas graphically (Awareness)	A4.3 Concept mapping encourages students and teachers to be creative. They are able to work together to create concept maps when brainstorming ideas for a web, story boards when planning to create a class book, cause and effect diagrams of the results of an experiment, and outlines or plans for specific projects.
A4.4 create links between ideas, relink or delete links between ideas (Awareness)	A4.4 Concept mapping software available in schools allows easy manipulation of linked ideas. Simply click on a link and drag it to a new location. When working on a web, some ideas/topics can be grouped together. Afterwards, it may be decided that certain words need to be moved to another group. Electronic concept mapping enables teachers and students to save ideas and projects for further use.
A4.5 elaborate on ideas (Awareness)	A4.5 Further explaination on an idea may be provided by adding notes. These may be clues, activities or questions relating to clarification of ideas. Examples could be KWL charts, listing characteristics of people, animals, objects in stories, clues for a treasure hunt, etc.

Concept Maps

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Early Literacy	Early Numeracy	Science	Social Studies	Other
Technology Lesson Plan: ``What do I want. What do I need`` pg. 52 ``Make a picture, say a word``pg. 62	1.1, 1.2, 1.4, 1.5, 2.1, 2.2, 3.7			1.2	
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. This resource can be used when exploring needs and wants with students.					
A4.4 Record ideas generated during brainstorming sessions without organizing. Later, ideas can be easily categorized or deleted as required. For example, brainstorm words associated with winter. Afterwards, group the words into categories such as `sports`, ``clothing`, etc.					
A4.5 Following the brainstorming session further information can be added to the ideas by using the note feature. The teacher can model editing strategies by talking through whether to add or take away information for class stories or lists.					

Graphics

Students will be expected to:	Instructional Considerations
A5.1 create illustrations or graphics by using the various drawing tools (Awareness)	A5.1 Graphics programs provide the user with on screen 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. The computer provides a highly interactive environment for the learner. Programs available in schools such as Tux Paint, Ultimate Writing Creativity Center, Inspiration 7.5 and others have collections of graphics that can be used by the students. These products also have tools that can be used to create graphics.
B5.1 demonstrate various object editing features (Awareness)	B5.1 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 transformation (translation, rotation, reflection). 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.

Graphics

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Early Literacy	Early Numeracy	Science	Social Studies	Other
Technology Lesson Plan: Patterning with Shapes pg.61 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. Using a graphics program, have the students create a picture to tell a story or illustrate a stem sentence provided by the teacher. As students progress, have them write words and illustrate using graphics. Students should be encouraged to use their imagination and draw their own rather than using the program provided graphics (stamps). 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. Just as students use manipulatives (two triangles make a four sided shape), model how to manipulate or edit shapes using the computer programs. Teachers can demonstrate how to write , edit, and illustrate a story based on instructions. For example: How do you make the bear in your drawing a different color?		2.1			

Word Processing

Students will be expected to:	Instructional Considerations
A7.2 identify examples of desktop publishing (Awareness)	A7.2 Show students concrete examples of computer generated media such as magazines, brochures, catalogues, newspapers, blogs and wikis to demonstrate how technology is used to create written and illustrated text.
B7.1 use a grade level appropriate word processor to create and edit written work (Awareness)	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.
B7.2 locate characters on a keyboard and identify functions of word processing (Awareness)	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. (APEF English Language Arts Curriculum Document for Grades Entry-3, page 240). Examples of ways word processing can be used in Kindergarten-3 classrooms: • creating alphabet books • writing journals, literature responses, or learning logs • composing stories, poems, letters, signs • revising, editing and publishing work • creating a class newsletter • creating reports • creating group compositions (APEF English Language Arts Curriculum Document for Grades Entry-3, page 240)

Word Processing

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Early Literacy	Early Numeracy	Science	Social Studies	Other
Technology Lesson Plan: I Like To... pg.50 A7.2 Provide or create an examplar. Publish students' written work by printing a hard copy or publishing online. Include these published representations in students portfolios for documentation purposes. B7.1 Begin to use a simple word processor such as Ultimate Writing Creativity Centre. Invite students to use this tool as a writing centre to publish their work. This can be done as a group. 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.	1.7, 3.4			1.1	

Multimedia

Students will be expected to:	Instructional Considerations
B8.1 navigate multimedia resources such as slide shows, online resources or CD-ROM interactive educational activities (Awareness)	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. When children use technology, they are learning and developing the following: • Hand-eye coordination • Fine motor skills • Cooperative learning, turn taking • Technical and multimedia skills Literacy skills: reading, writing, listening, speaking, viewing and representing, beyond the traditional formats of pen and paper. Creative thinking skills

Multimedia

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Early Literacy	Early Numeracy	Science	Social Studies	Other
Technology Lesson Plan: Let's Count Things pg.56 More with Understanding Numeration Plus pg.58 B8.1 A variety of online and digital resources are available in schools. Resources are accessed through the school server or via the Internet.		1.1, 1.2, 1.3, 1.7			

Database

Students will be expected to:	Instructional Considerations
A9.1 use an existing database to find information (Awareness)	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.
B9.1 enter data into a pre-existing database, edit data, use automated text (Awareness)	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.

Database

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Early Literacy	Early Numeracy	Science	Social Studies	Other
Technology Lesson Plan: "Which is Taller, Heavier, Longer?" pg.65		4.1			
A9.1 Submit queries in a pre-existing database such as a search engine like "Google" or library book database such as "Abbycat". Encourage students to collect information that is important to them. This could be part of a current inquiry or project. The class can then work together to organize the information in a variety of ways. Activities such as "show and tell" or "all about me" help teach students about gathering information. B9.1 As a class, collect and enter new information into a pre-existing database. This information may result from their own research activity.					

Telecommunications

Students will be expected to:	Instructional Considerations
B10.1 send messages (Awareness)	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. The language skills of kindergarten students may not be sufficiently developed to independently send an e-mail message, however, with assistance a simple message may be sent.
B10.2 open messages (Awareness)	B10.2 An older student can help a younger student login to their account, access e-mail software and then read the message that was sent.

Telecommunications

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Early Literacy	Early Numeracy	Science	Social Studies	Other
Technology Lesson Plan: Email Buddies pg.55	3.1, 3.2, 4.1, 4.2, 4.3				
B10.1 Kindergarten students can be sent an email message by an older student. The older student assists the kindergarten student to access, read, reply or compose a message. As the students become more proficient with email, messages from student to parent can also be sent. Email can also be used as a shared reading/writing experience in whole group using an LCD projector.					
B10.2 Alternatively, send each student a greeting prior to class. Demonstrate how to open, reply, or compose a message. Ensure that all students send and receive a message.					

Web Authoring

Students will be expected to:	Instructional Considerations
A11.1 identify web page creation possibilities (Awareness)	A11.1 Many opportunities exist within the kindergarten 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. Most schools have places on their web page where students' work can be showcased.

Web Authoring

Teaching Suggestions, Activities and Assessment	Links to Specific Curriculum Outcomes				
	Language Arts	Math	Science	Social Studies	Other
Technology Lesson Plan: Tinkering with Technology pg.54 A11.1 Use a web page editor to create a template to display student creations. Content may include text, scanned drawings or graphics.	1.5, 3.4, 3.5, 4.1, 4.2, 4.3				

Lesson Plan Index

Lesson Plan: I Like To...

Outcomes

Technology: B1.1, A5.1, A7.2, B7.1, B7.2

Kindergarten Social Studies: 1.1
Early Literacy: Reading and Viewing: 3.4
Speaking and Listening: 1.7

Activity

Students can use computer graphics to create a picture. The students will then give an oral presentation on their illustration. Students in the early literacy stage of writing may wish to use the keyboard to add words to their graphic. Any graphics program can be used for this exercise; Color Magic or Windows Paint Brush. Ultimate Writing Creativity Center is also a very useful program which allows the students to create pictures. 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

- Color Magic, Tux Paint software
- Ultimate Writing Creativity Center software

Instructions

1. Directions will have to be given on the basic functions of the software. Let the students explore some of these functions before assigning the task.
   If using a program such as Color Magic or Tux Paint, 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) show 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.
   If using Ultimate Writing Creativity Center, have the students key in the words "I like to..." in whatever color they prefer.
   Then have the students browse through the binders to find suitable graphics to help them describe what they like.
   If the students are using Color Magic, various graphics can be found by using the stamp. Also, using some of the paint tools, students can draw their illustrations.
2. 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.
3. If an LCD projector is available, have the students illustration shown on the wall while the student is telling his/her story. If an LCD projector is not available, have the student hold up the printed copy for all to see while telling the story.

For more information on Ultimate Writing Creativity Center, see the following
site: http://www.edu.pe.ca/journeyon/pro_d_pages/UWCC_basics/index.htm

Lesson Plan: I Like To...

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

example using Ultimate Writing Creativity Center

Lesson Plan: What do I want? What do I need?

Outcomes

Technology: A4.3, E2.2

Oral Language-Speaking and Listening: 1.1, 1.2, 1.5

Social Studies (I Am Unique): 1.2

Activity

Within the Kindergarten curriculum guide, one of the Social Studies themes is "I am Unique".
This activity asks stucents to find the difference between a want and a need.

Resources

- Inspiration 7.5 software

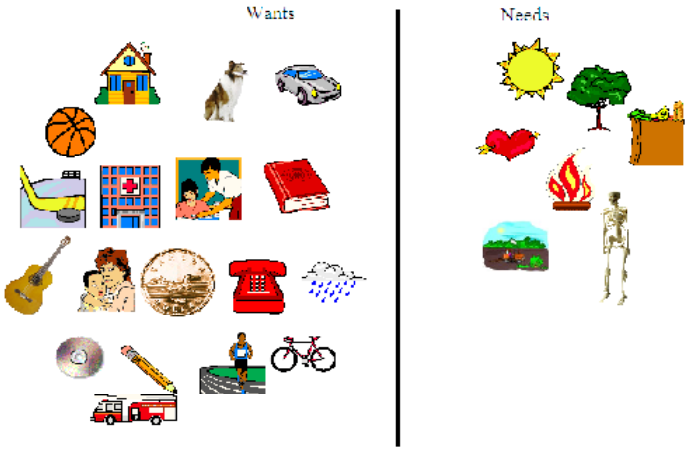
Instructions

After discussing the concepts of wants and needs with students, open the software program Inspiration 7.5.
Prior to this lesson, a file should be created using the text and graphics in the software.
Use the text tool and create 2 headings: Wants Needs. Select a number of graphics from the Symbol Palette.
Have the students discuss each of the graphics and decide where each graphic fits. Move the graphic under the appropriate heading.
See the following example.

Lesson Plan: What do I want? What do I need?

Instructions (continued)

Using the straight line drawing tool, draw a line down the center of the page to help separate the graphics between Wants and Needs. See example below for suggested differences.



For more information on Inspiration 7.5, visit the following site: http://www.edu.pe.ca/journeyon/pro_d_pages/Using_Inspiration/inspiration7.htm

Lesson Plan: Tinkering With Technology

Outcomes

Technology: B1.1, B1.8, C1.1, A11.1

Early Literacy:
Speaking and Listening: 1.5,
Writing and Representing: 4.1, 4.2, 4.3
Reading and Viewing: 3.4, 3.5

Suggestions

- 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.
- Practice using email and send a message to other classmates.

Activity

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.

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, printers and possibly microwaves and photocopy machines as well as many of the technologies covered in the reading material.

Have the students identify or describe the parts of a computer. For example, how to turn it on, what is a mouse used for, how to run software, etc.

Resources

Any technology viewed in classroom or at home.
Graphic software such as Tux Paint or Ultimate Writing Creativity Center

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. This artwork can be displayed on the school web page.

Lesson Plan: E-mail Buddies

Outcomes

Technology: A2.1, B2.1, B10.1, B10.2, E2.1, E2.2, E2.3, E2.8

Early Literacy:
Writing and Representing: 4.1, 4.2, 4.3
Reading and Viewing: 3.1, 3.2

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 to a student in kindergarten. 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.
"...children are encouraged to participate as much as possible, both by contributing to the content and by physically attempting some parts of the writing..." pg.54 Kindergarten Integrated Curriculum Document 2008

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 help read the message that was sent to younger student.
"In guided reading sessions, educators support small groups of children in reading texts they are unable to read independently." pg.52 Kindergarten Integrated Curriculum Document 2008

3. The younger student, with the help of the buddy, could formulate and send a reply.

For more information on student email accounts, see the following site:
http://www.edu.pe.ca/journeyon/pro_d_pages/netmail/index.html

Lesson Plan: Let's Count Things

Outcomes

Technology: B8.1

Early Numeracy: 1.1, 1.2

Activity

The purpose of this activity is to give teachers and students an introduction to some of the basic functions of the program Understanding Numeration Plus.

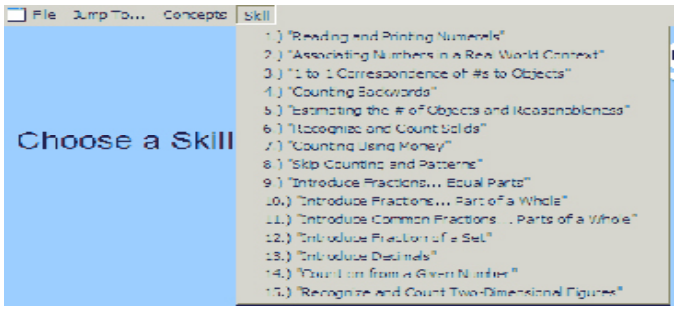
Resources

Internet
Understanding Numeration Plus software

Instructions

All schools with students from Kindergarten to 6 have access to this software.
When you open the program, the first thing that you will see is "Introduction for Teachers" page. You may wish to go through this the first time you open the program. After that, skip this page by clicking on the "Jump to" button at the top left of your screen. By clicking on the "Main Menu" option , the following page opens.

You may enter any of the 5 components of the program by clicking on them. By clicking on "Counting", for example, a new window will open and you will be given a window that has a button that says"skill". If you click on it, the following menu will appear.

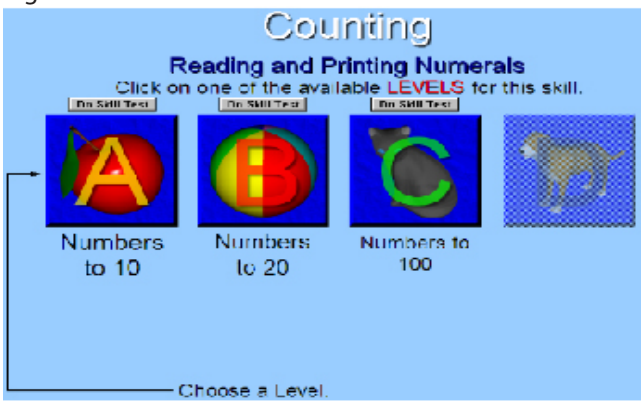


Teachers can then click on the appropriate skill that they are working on. In this case, click on "Reading and Printing Numerals".

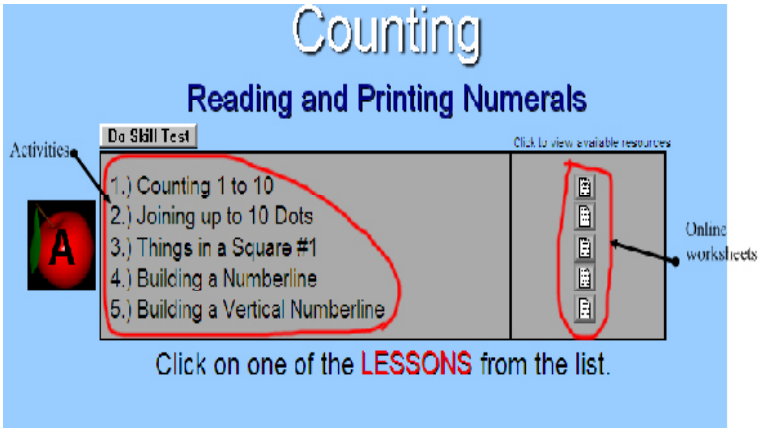
Lesson Plan: Let's Count Things cont'd

For more information on this software, please visit the following url: www.neufeldmath.com

You will notice from the graphic below that in this instance, you are given 2 choices. Letters "A", "B" and "C" will allow students to go to the appropriate activity. In this case, you will choose Level "A". Notice that Level "D" is grayed out. This means that there is no appropriate activity at that Level.You will also notice that students have the option of completing a skill test on each of the skills.



If you clickon "A" and click "Go" ,the following window will appear.



Click on Activity 1. This activity gets students to count various objects and gets them familiar with the idea that a symbol can be used to represent a number.

Lesson Plan: More with Understanding Numeration Plus

Outcomes

Technology: B1.1, B1.8

Early Numeracy: 1.3, 1.7

Activity

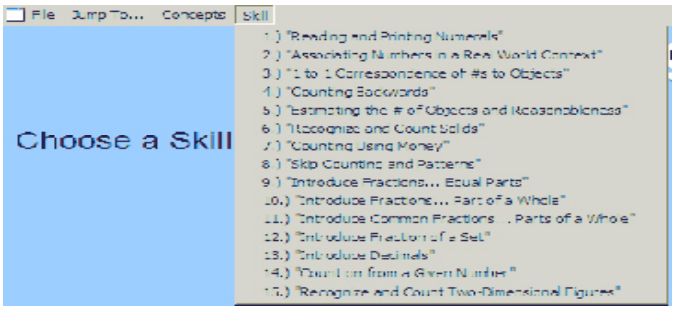
As students get more familiar with the navigation of Understanding Numeration Plus, there are a number of activities that can be used to support other early numeracy outcomes.

Resources

Understanding Numeration Plus software

Instructions

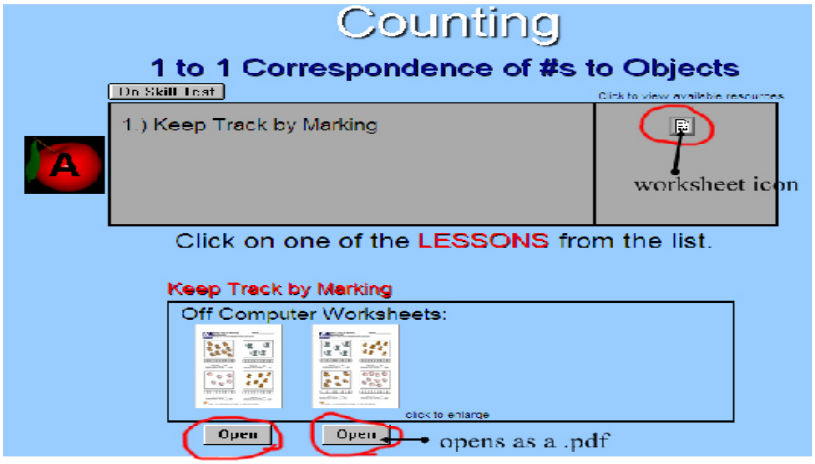
1. Click on Counting in the Main Menu.
Then click on "Skill- 1to 1 Correspondence of # to Objects"



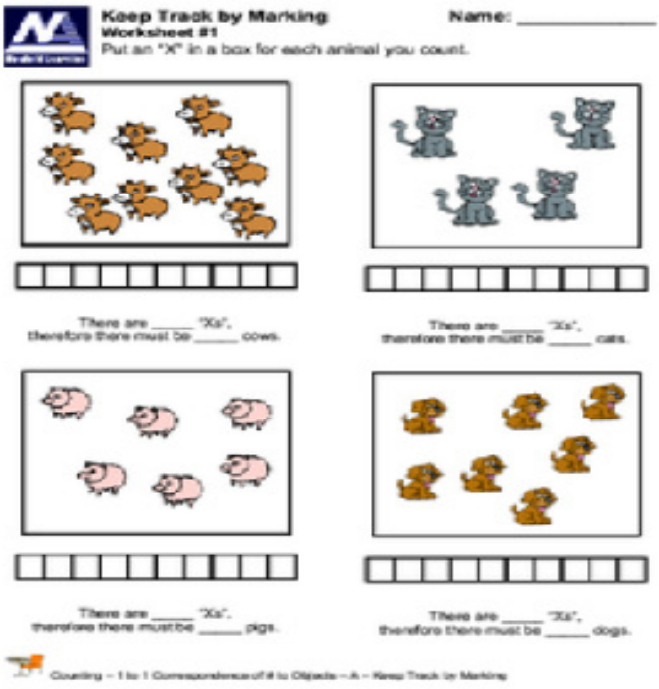
Level A- Keep Track by Marking

Lesson Plan: More with Understanding Numeration Plus cont'd

Worksheets: This is a resource that teachers may find useful with their students.



These worksheets can be printed off and used by the teacher and students.



Lesson Plan: More with Understanding Numeration Plus cont'd

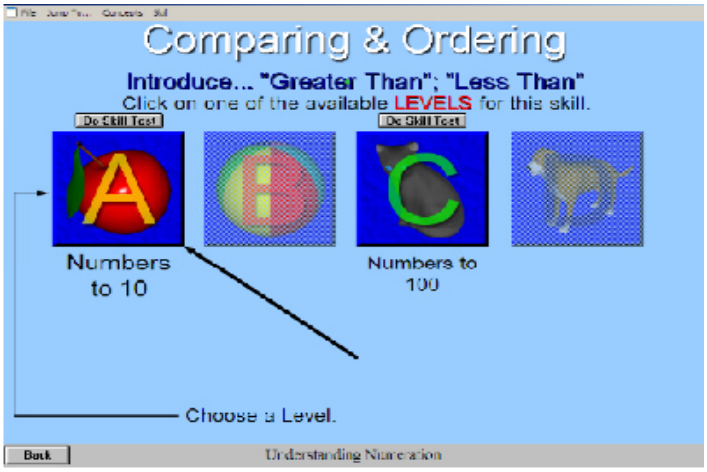
Outcomes

Technology: B1.1, B1.8

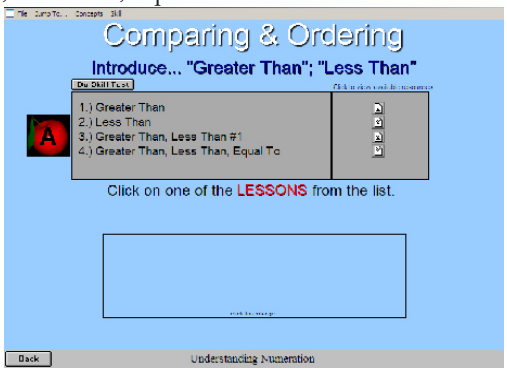
Early Numeracy: 1.6

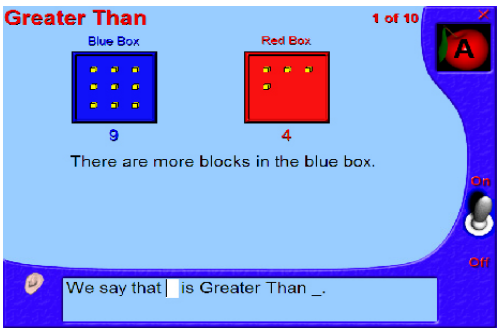
Activity

2. Click on **Comparing and Ordering** in the Main Menu.
Click on "Skill-Introduce Greater Than & Less Than"
Click on **Level A**



Click on the following lessons:
Greater Than
Less Than
Greater Than, Less Than #1
Greater Than, Less Than, Equal To





Lesson Plan: Patterning With Shapes

Outcomes

Technology: B1.1, A5.1, B5.1

Early Numeracy: 2.1

Activity

This activity helps to reinforce the concept of recognizing and creating patterns using existing software.
"Children develop their ability to recognize, extend, create, and use numerical and non-numerical patterns to better understand the world around them..." pg. 90 Kindergarten Integrated Curriculum Document 2008.

Resources

Software such as:
Tux Paint
Inspiration 7.5

Instructions

Below is a pattern created by using Tux Paint. Open the software, select the "Shapes" tool. Select the solid circle shape. Select a color. By clicking the mouse on the screen, the shape will be created. Change the color to change the pattern. Use the "Lines" tool to create blanks for the students to fill in.
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 can also be created using Inspiration 7.5 . Open the software, click on "View- Symbol Palette". Here you will find images to create patterns. Click and drag the symbol onto your main screen.

Lesson Plan: Make a Picture, Say a Word

Outcomes

Technology: A4.4, A4.5, B7.2

Early Literacy:
Speaking and Listening: 1.4
Phonological Awareness: 2.1, 2.2
Reading and Viewing: 3.7

Activity

Most software programs today have a graphics component.This allows the student to not only communicate with text but also with pictures Within the graphics environment, students can explore and experiment with relationships between picture and text. As students engage in using graphics, they are learning how to think creatively and to follow directions.

Resources

- Inspiration 7.5

Background

The Mouse - While the mouse can vary, the basic variety has a left and right button. The mouse is used for opening, closing, moving and resizing windows. 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

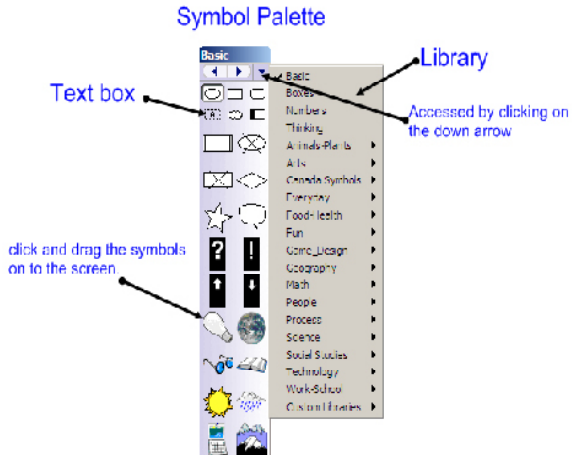
Open the program Inspiration 7.5. Using the Symbol Palette, find as many pictures starting with the letters A, B or C in 5 minutes.
When the student finds a picture, he/she drags it from the symbol library onto the main screen.

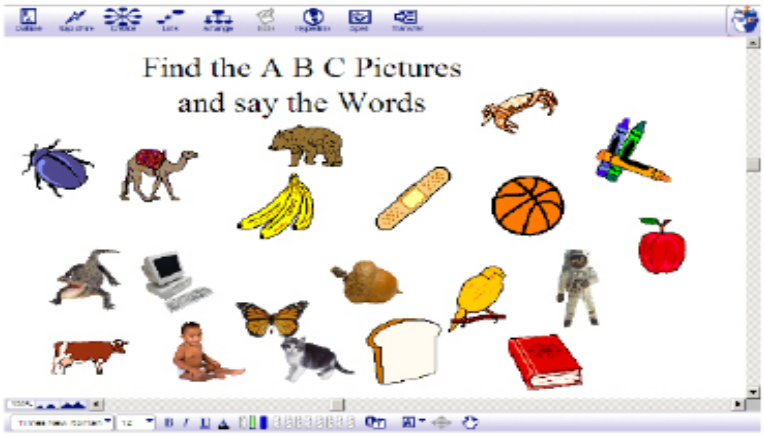
The Symbol Palette contains a library of symbols can be accessed by either using the "View-Symbol Palette" in the dropdown menu at the top of the screen or by using the shortcut key "F8". When students are using this program, the shortcut key might be the better option for them. They can find this at the top of the keyboard.

Lesson Plan: Make a Picture, Say a Word

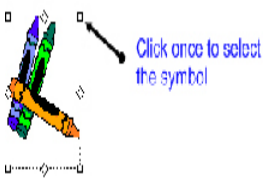
Instructions (continued)

The text box can be accessed within the symbol palette by clicking on the icon with the letter A.





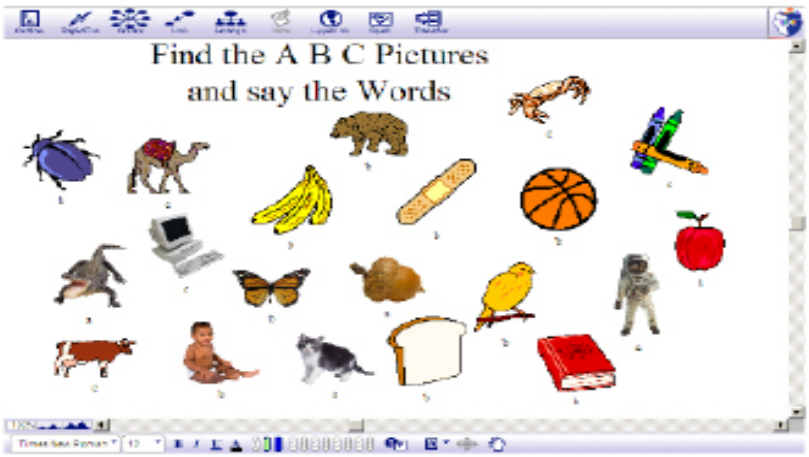
Click once on the picture with the mouse. This opens a text box underneath the graphic. Click once on the text box and the students can use invented spelling and spell the word.



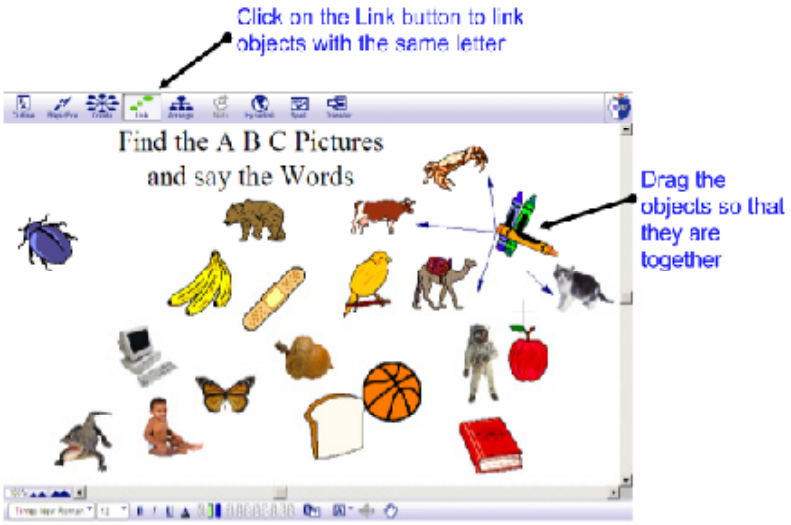
The students can also move the graphics around on the screen by clicking and dragging each graphic. They may group them by beginning letter or by living/not living.

Lesson Plan: Make a Picture, Say a Word

Outcomes



Pictures can also be linked together by using the "Link" button on the menu found at the top of the screen.
In this example, the crayons were first selected and all the other "C" words were linked to it. By dragging each linked object, all the "C" words were close to each other on the screen.



For more information on Inspiration 7.5, visit the following url:
http://www.edu.pe.ca/journeyon/pro_d_pages/Using_Inspiration/inspiration7.htm

Lesson Plan: Which is Taller, Heavier, Longer?

Technology: B9.1

Early Numeracy: 4.1

Science:

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 Kindergarten 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
- InspireData software
- Stuffed toys

Instructions

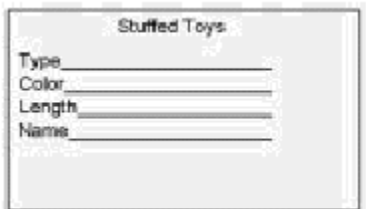
1. Collecting and recording information - Each student brings his/her favourite stuffed toy to class and is provided with an index card or photocopied sheet containing the field names e.g. Type of toy, Colour, Length and Name of Student.
   Adapt the type of information to be collected to match the students™ skills. Length could be characterized as "taller, shorter, wider,etc".
2. The students fill in the information on their cards as the teacher fills in a sample using software and an LCD projector.
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?" "Which one is the heaviest?" "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: Which is Taller, Heavier, Longer?

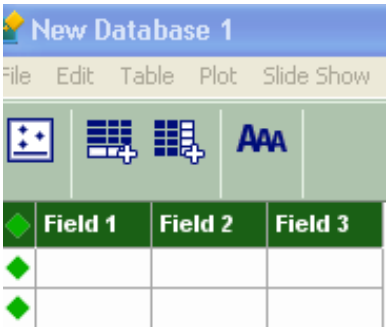
Suggestions

- 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 the hair colour, gender, birth month, pets, what they are wearing, etc.

Sample Index Card



Open the software InspireData and click on "File-New". You will see a table that has a number of fields.



Click on "Field 1". You will see a text box open at the top of the page. Type in "Name of Student" and press the enter key. Do the same for the other fields. To add more fields or rows and columns, click on the appropriate icon at the top of the screen. Underneath each of the fields, add the information from the index cards.

Name of student	Color	Length	Type of toy
John	green	long	dragon
Mary	brown	wide	bear
Bill	brown	short	bear

To change this data to a graphic, click on the icon at the top left of the screen. The page will then switch to "Plot View". There are then options at the bottom of the page to change to different graphics. (pie, venn, bar)

Lesson Plan: Promoting Internet Safety

Technology: E 2.3, A3.1

Early Literacy:
Reading and Viewing: 3.11, 3.12, 4.1

Health and Physical Development: Health and Well-Being: 2.4, 2.5

The Internet has become one of the major sources of information for the children of the 21st Century. There are benefits and there are risks when using the Internet. Children require guidence when first learning how to use this tool. Critical thinking skills need to be developed so that students can enjoy the benefits and minimize the risks.

Resources

Internet access

Instructions

It is important that teachers preview and select Internet sites so that they are appropriate for their students. As of September, 2009, the Department of Education and Early Childhood Development (Technology in Education) has purchased a yearly subscription to a service called Nettrekker.

This is a password protected site that uses educators to search, filter, categorize sites for the different curriculum areas. It also organizes sites according to reading level.

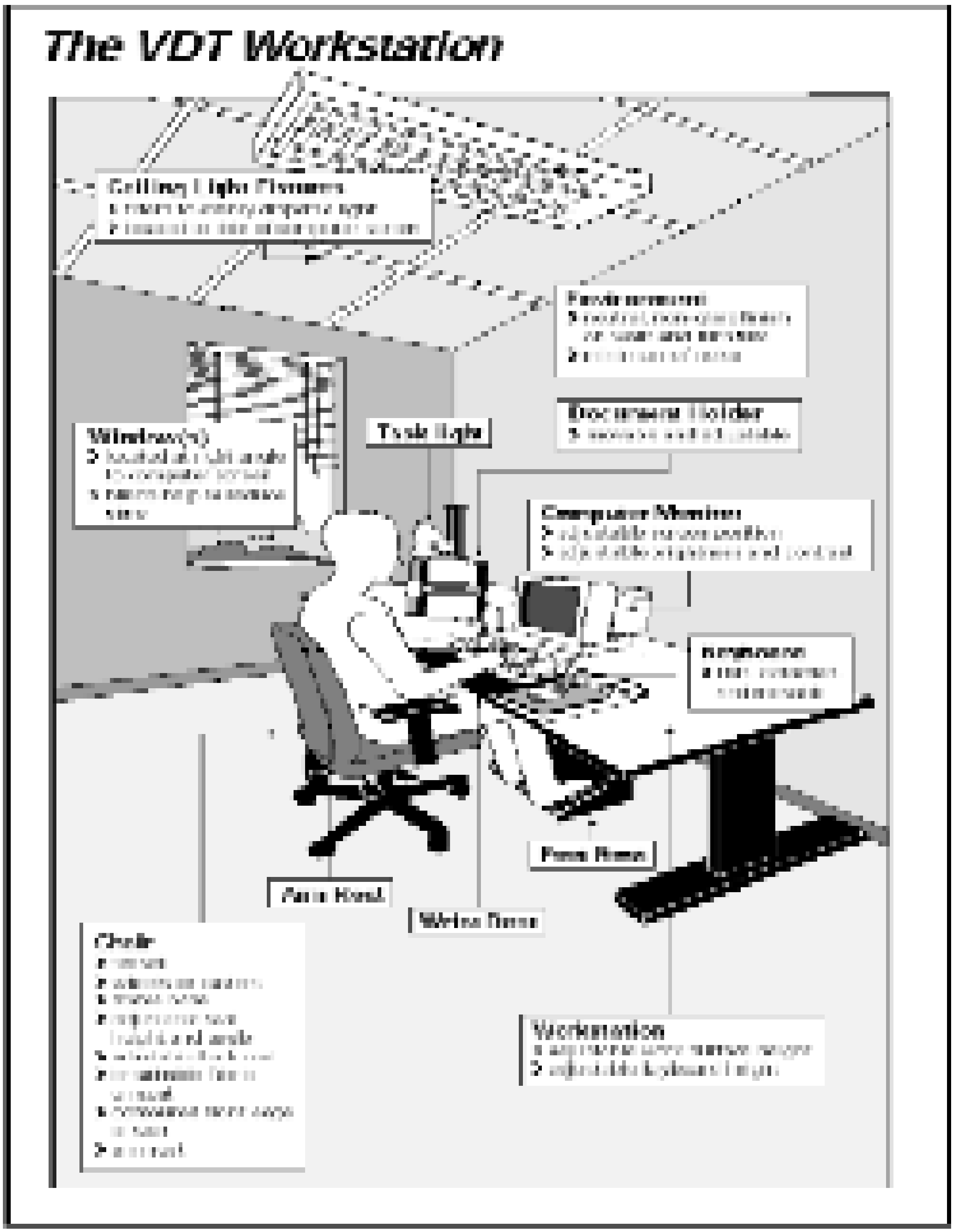
Each elementary school as of September, 2009 has their own login and password to this service. This information can be obtained from the Elementary Technology Specialist at the Department of Education and Early Childhood Development. Additional information about this service can be found at the following url: http://schoolca.nettrekker.ca

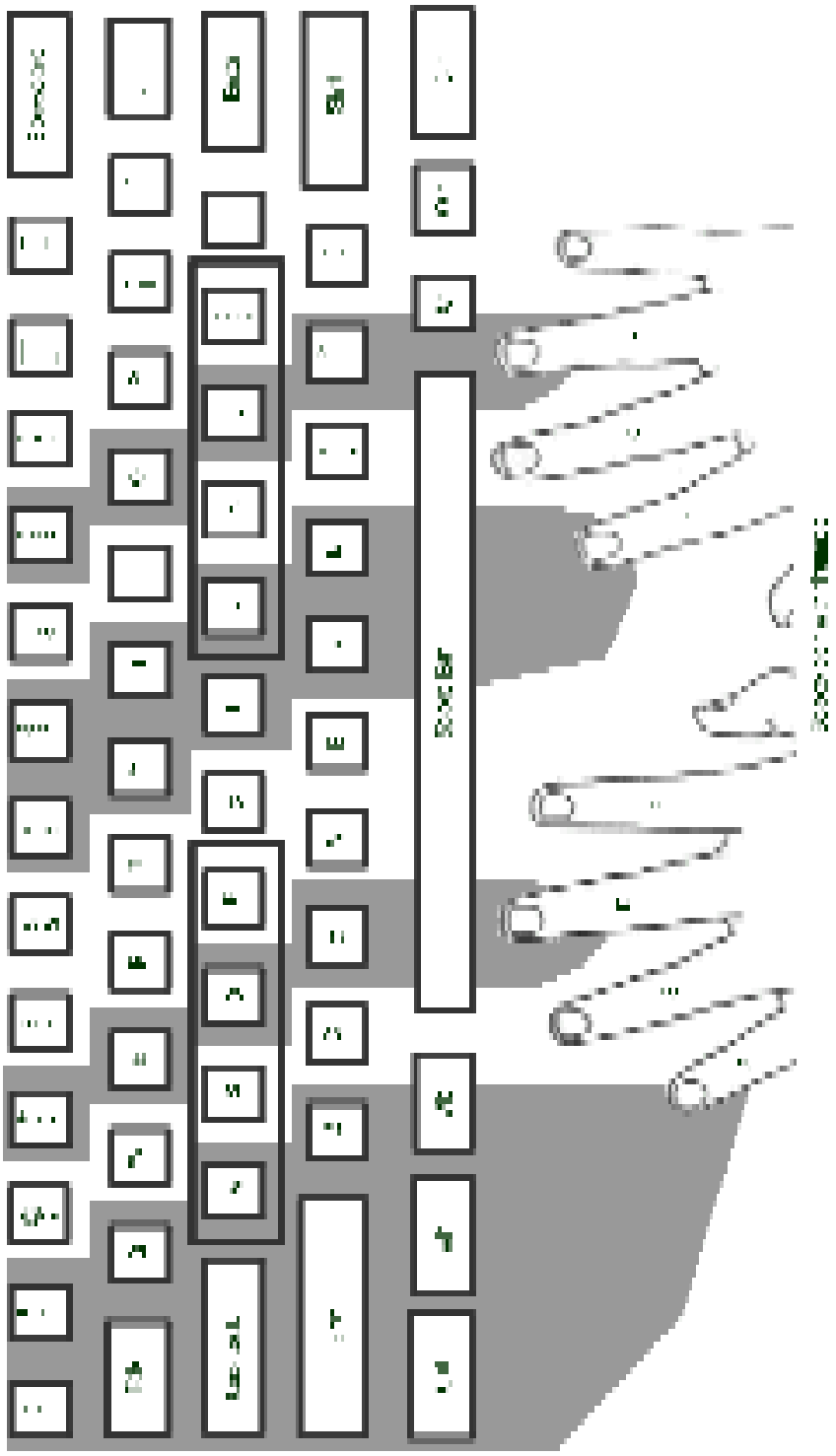
The usefulness of this service is re-evaluated each year.

If an LCD is available in the classroom, the teacher may go to this site and find many useful resources that can be comfortably shared with their students.

Teachers may also wish to use the resources on Internet Safety that are found at the following url:
http://www.edu.pe.ca/journeyon/pro_d_pages/internet.htm

Appendix


The VDT Workstation
Ceiling Light Fixtures
Environment
Document Holder
Window(s)
Task light
Computer Monitor
Foot Rest
Arm Rest
Wrist Rest
Chair
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/B6 is copied the numerator A6 will change to A7, A8, etc. while the denominator B6 will stay the same)

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

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

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

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

Attachment: file that is attached to an email

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

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

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

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

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

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

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

Bullets: a symbol appearing before items in a list.

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

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

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

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

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

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

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

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

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

Commercial ware: commercial software which requires purchase and registration.

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

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

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

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

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

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

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

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

Decompression: process of decoding or reading encoded data.

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

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

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

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

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

Dynex: PEI (French) school library database system

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Import: to bring in external information

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

Interactive syllabus: an electronic course outline

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

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

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

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

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

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

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

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

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

Microcat: PEI (English) school library database system

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

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

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

Network: a communication system connecting two or more computers.

Notebook: another name for an individual spreadsheet.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Software: program or application that runs on a computer.

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

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

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

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

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

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

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

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

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

Un-grouping: separating objects that were previously grouped.

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

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

Virtual reality: an artificial environment created with computer technology

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

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

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

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

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

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

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

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