PRINCE EDWARD ISLAND

SENIOR HIGH CURRICULUM

Prince Edward Island

C A N A D A

Information Technology Communication 401A

Curriculum Guide

Acknowledgements

The Prince Edward Island Department of Education gratefully acknowledges the contribution of the following individuals in the development or subsequent revision of the Information Technology Communication Curriculum.

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Introduction

Background

The Information Technology Communication curriculum has been developed with the intent of responding to continually evolving education needs of students and society while preparing students for the challenges they will face throughout their lives.

On going changes in society - for example, rapidly expanding use of technologies - require a corresponding shift in learning opportunities for students to develop relevant knowledge, skills, strategies, processes, and attitudes that will enable them to function well as individuals, citizens, workers, and learners. To function productively and participate fully in our increasingly sophisticated technological, information-based society, citizens will need broad digital-age literacy abilities.

Rationale

The primary goal of Information Technology Communication is to promote technological literacy. Information Technology Communication prepares individuals to meet personal needs, provides an awareness of the variety of careers, and lays the foundation for lifelong learning. It can serve as a vocational preparation for a career in Information Technology Communication, mastery of basic skills for related business occupations, or a foundation for a post-secondary education.

Program Design and Components

Program Organization

The curriculum is designed to support the foundation documents created and approved in partnership with the other Atlantic Provinces. The APEF Essential Graduation Learnings (EGL) statements describe the knowledge, skills, and attitudes expected of all students who graduate from high school. Achievement of the Essential Graduation Learnings will prepare students to continue to learn throughout their lives. These cross-curriculum learnings confirm the need for students to make connections to meet the ever changing workplace in the future. The Essential Graduation Learnings serve as a framework for the curriculum developed in this guide.

Curriculum

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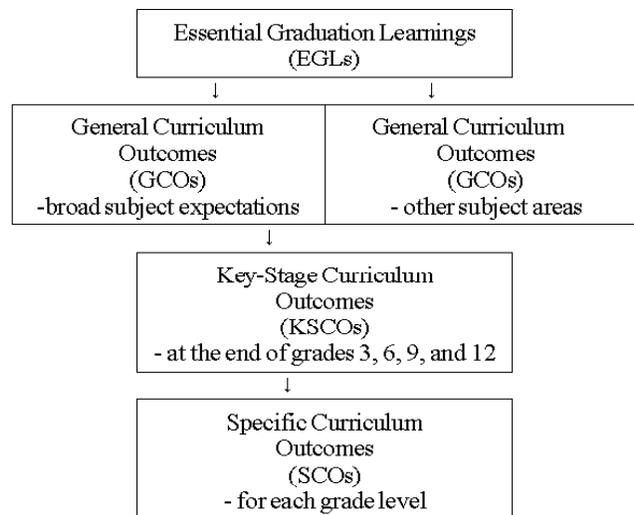
Essential Graduation Learnings

Essential Graduation Learnings are statements describing the knowledge, skills, and attitudes expected of all students who graduate from high school. Achievement of the Essential Graduation Learnings will prepare students to continue to learn throughout their lives. These learnings describe expectations not in terms of individual school subjects but in terms of knowledge, skills, and attitudes developed throughout the curriculum. They confirm that students need to make connections and develop abilities across subject boundaries if they are to be ready to meet the shifting and ongoing demands of life, work, and study today and in the future. Essential Graduation Learnings are cross-curricular, and curriculum in all subject areas is focused to enable students to achieve these learnings. Essential Graduation Learnings serve as a framework for the curriculum development process.

Specific Essential Graduation Learnings

Aesthetic Expression

Graduates will be able to respond with critical awareness to various forms of arts and be able to express themselves through the arts.

Citizenship

Graduates will be able to assess social, cultural, economic, and environmental interdependence in a local and global context.

Communication

Graduates will be able to use the listening, viewing, speaking, reading and writing modes of language(s) and mathematical and scientific concepts and symbols, to think, learn, and communicate effectively.

Personal Development

Graduates will be able to continue to learn and to pursue an active, healthy lifestyle.

Problem Solving

Graduates will be able to use the strategies and processes needed to solve a wide variety of problems, including those requiring language, mathematical, and scientific concepts.

Technology Competency

Graduates will be able to use a variety of technologies, demonstrate an understanding of technological applications, and apply appropriate technologies for solving problems.

Curriculum Outcomes

Curriculum outcomes are statements articulating what students are expected to know and be able to do in particular subject areas. These outcomes statements also describe the knowledge, skills, and attitudes students are expected to demonstrate at the end of certain key stages in their education. These are based upon their cumulative learning experiences at each grade level in the entry-graduation continuum. Through the achievement of curriculum outcomes, students demonstrate the Essential Graduation Learnings.

General Curriculum Outcomes

are statements that identify what students are expected to know and be able to do upon completion of study in a curriculum area.

Key-Stage Curriculum Outcomes

are statements that identify what students are expected to know and be able to do by the end of grades 3, 6, 9, and 12, as a result of their cumulative learning experience in a curriculum area.

Specific Curriculum Outcomes

are statements identifying what students are expected to know and be able to do at a particular grade level. The specific curriculum outcomes serve as a framework for students to achieve key stage and general curriculum outcomes.

Cross-Curriculum Specific Items

Meeting the Needs of all Students

This curriculum is inclusive and is designed to help all learners reach their potential through a wide variety of learning experiences. The curriculum seeks to provide equal entitlements to learning opportunities for all learners.

The development of students' literacy is shaped by many factors including gender, social and cultural background, and the extent to which individual needs are met. In designing learning experiences for students, teachers should consider the learning needs, experiences, interests, and values of all students.

In recognizing and valuing the diversity of students, teachers should consider ways to:

- provide a climate and design learning experiences to affirm the dignity and worth of all learners in the classroom community
- redress educational disadvantage - for example, as it relates to students living in poverty
- model the use of inclusive language, attitudes, and actions supportive of all learners
- adapt classroom organization, teaching strategies, assessment strategies, time, and learning resources to address learners' needs and build on their strengths by:
    - providing opportunities for learners to work in a variety of learning contexts, including mixed-ability groupings
    - identifying and responding appropriately to diversity in students' learning styles
    - building upon students' individual levels of knowledge, skills, and attitudes
    - designing learning and assessment tasks that correspond to diverse learning styles
    - using students' strengths and abilities to motivate and support learning
    - offering multiple and varied avenues to learning
- celebrate the accomplishments of learning tasks by students

Gender-Inclusive Curriculum

In a supportive learning environment, male and female students receive equitable access to teachers' assistance, resources, technology, and a range of roles in group activities. It is important that the curriculum, classroom practice, and learning resources reflect and value the experiences, interests, achievements, and perspectives of both males and females.

- Teachers promote gender equity in their classrooms when they:
- articulate equally high expectations for male and female students
- provide equal opportunity for input and response from male and female students
- model gender-fair language and respectful listening in all their interactions with students
- promote critical thinking and challenge discrimination

Valuing Social/Cultural Diversity

In order to engage in and maximize learning, all students need to see their social/cultural identities reflected and affirmed in curriculum and classroom practices. It is important to recognize that students in Prince Edward Island come from an increasingly wider range of diverse ethnic, racial, cultural, and social backgrounds than in the past. In addition, they communicate with the wider multicultural world through technology, media, travel, and family and business connections in order to understand their own and others' customs, histories, traditions, values, beliefs, and ways of seeing and making sense of the world. Through experiential learning or through reading, viewing, and discussing authentic texts that reflect diverse social and cultural voices, students from different social and cultural backgrounds can come to understand each other's perspectives; to realize that their own ways of seeing and knowing are not the only ones possible; and to probe the complexities of the ideas and issues they are examining.

Curriculum, classroom practices, and learning resources should reflect the diverse and multicultural nature of our society, examine issues of power and privilege, and challenge stereotypes and discrimination.

Engaging All Students

One of the greatest challenges to teachers is engaging students who feel alienated from learning - students who lack confidence in themselves as learners, who have a potential that has not yet been realized. Among them are students who seem unable to concentrate, who lack everyday motivation for academic tasks, who rarely do homework, who fail to pass in assignments, who choose to remain on the periphery of small-group work, who cover up their writing attempts fearing the judgements of peers, who are mortified if asked to read aloud, and who keep their opinions to themselves. These students are significantly delayed when it comes to learning. Some, though not all, exhibit behaviors in classrooms that further distance them from learning. Others are frequently absent from class. Cumulatively, these are disengaged students.

These students need essentially the same experiences as their peers - experiences that:

- engage students in authentic and worthwhile communication situations
- allow them to construct meaning, connect, collaborate, and communicate with each other

- form essential links between the world of text and their own world

- give them a sense of ownership of learning and assessment tasks

They need additional experiences as well - experiences designed to engage them personally and meaningfully to make their learning pursuits relevant. They need substantial support in reading and writing. They need positive and motivational feedback. They need all of these experiences within purposeful and interactive learning contexts. Ultimately, the curriculum for students should prepare them for adult life.

Preparing students means engaging them with resources and with people from whom they can learn more about themselves and their world. Many students feel insecure about their own general knowledge and are reluctant to take part in class discussions, deferring to their peers who seem more competent. Through the curriculum, the students must find their own voice. The learning environment must be structured in such a way that all students, alongside their peers, develop confidence and gain access to information and to community.

The greatest challenge in engaging learners is finding an appropriate balance between supporting their needs by structuring opportunities for them to experience learning success and challenging them to grow as learners. Teachers need to have high expectations for all students and to articulate clearly these expectations.

Links to Community

A complete curriculum allows for the flexibility of inclusion of the community through various means. Activities such as guest speakers, field trips, and historical presentations allow the students to become more aware of the influence of the community on their lives. Students gain insight into the current workings of their local society, as well as observe role models and establish contacts with the community.

This curriculum guide provides suggestion, wherever possible, for community involvement to become an integrated part of the course.

Role of Parents/Guardians

Parents and guardians play a vital role in the educational focus of the students. Although parents and guardians may or may not necessarily feel comfortable to help in specific subject learning with their children, their role is a vital link to the development of the students. It is most important that the parents and guardians understand and support the

school policies. Parents and guardians are a vital component in the facilitation of the learning of student responsibility in such areas as attendance, safe school policies, goal setting and career investigations. Schools need parents and guardians to share in their children's successes.

Teachers should invite opportunities for parents and guardians to discuss these matters. Frequent parent-teacher conferences are encouraged via telecommunications and/or school-based meetings.

Involvement in school councils, home and school associations, and/or other school-based organizations enable parents and guardians to play an active role in the educational development of their child. Parents and guardians may become actively involved as guest speakers in the classroom for students to understand the community in which they live or as a spokesperson on a particular career.

Homework

Homework is an essential component of a program as it extends the opportunity to think and reflect on ideas investigated during class time. Meaningful homework experiences can allow the students to learn self-discipline and team responsibility while acquiring a sense of self-worth.

Homework provides an effective means to model classroom practice. This might involve seeking community input, constructing a model, group discussion to prepare a presentation, or answering questions for assessment purposes.

Teachers use their professional judgement to assign homework as a means of reinforcement, assessment, and/or further investigation.

Homework is another channel for parents and guardians to be involved. It is a tool for parents and guardians to understand the focus of their child's education in a specific subject area. In some cases, it opens the opportunity for parents and guardians to become actively involved in the homework process.

The Senior High School Learning Environment

Learning environment for grades 10-12 is:

• participatory, interactive, and collaborative

• inclusive

• caring, safe, challenging

• inquiry based, issues oriented

- a place where resource-based learning includes and encourages the multiple uses of technology, the media, and other visual texts aspathways to learning and as avenues for representing knowledge

The teacher structures the learning situation and organizes necessary resources. In assessing the nature of the task, the teacher may find that the situation calls for teacher-directed activities with the whole class, small groups of students, or individual students. Such activities include direct instruction in concepts and strategies and brief mini-lessons to create and maintain a focus.

As students develop a focus for their learning, the teacher moves to the perimeter to monitor learning experiences and to encourage flexibility and risk taking in the ways students approach learning tasks. The teacher intervenes, when appropriate, to provide support. In such environments, students will feel central in the learning process.

As the students accept more and more responsibility for learning, the teacher's role changes. The teacher notes what the students are learning and what they need to learn, and helps them to accomplish their tasks. The teacher can be a coach, a facilitator, an editor, a resource person, and a fellow learner. The teacher is a model whom students can emulate, a guide who assists, encourages, and instructs the student as needed during the learning process. Through the whole process, the teacher is also an evaluator, assessing students' growth while helping them to recognize their achievements and their future needs.

Learning environments are places where teachers:

- integrate new ways of teaching and learning with established, effective practices
- have an extensive repertoire of strategies from which to select the one most appropriate for the specific learning task
- value the place of dialogue in the learning process
- recognize students as being intelligent in a number of different ways and encourage them to explore other ways of knowing by examining their strengths and working on their weaknesses
- value the inclusive classroom and engage all learners in meaningful activities
- acknowledge the ways in which gender, race, ethnicity and culture shape particular ways of viewing and knowing the world
- structure repeated opportunities for reflection so that reflection becomes an integral part of the learning process

The physical learning environment should not be restricted to one classroom. There should be ample physical space for students to use cooperative learning techniques as well as other learning styles. There should be access to other learning centers in the school building such as labs and gymnasiums. Learning should be extended to community facilities, allowing field trips and guest speakers to expand the learning environment.

Safety

Students and teachers need to feel safe, both physically and emotionally, in the school setting. In a learning environment where cooperative, active, and collaborative teaching strategies are utilized, students must become knowledgeable of their role in enabling a safe environment to exist.

Empowering students to take ownership for their own safety and those of their peers is an essential component of the classroom learning. Teachers can provide students with the knowledge necessary to prevent unnecessary risks in their learning environment. By educating students about the risk factors involved in the classroom setting, they can become active participants in the ownership of their own safety. In all learning situations, the teacher needs to encourage a positive, responsible student attitude toward safety.

Risk is involved in everything a person does. To minimize the chance of harm, the student must become a conscious participant in ensuring a healthy, safe learning environment. Complacent attitudes regarding safety reflect a behaviour which invites a less protected setting.

While physical safety is of utmost importance in the classroom setting, emotional safety is equally important. Students need to know the unacceptable behaviour and the consequences that ensue. Students should be encouraged to be active learners without being intimidated by others. In every learning environment, teachers foster cooperative, respectful verbal dialogue, and physical presence. Student consequences to the contrary are essential components to the learning process.

Motivation

Motivation plays a very important role in student understanding and successful completion of curriculum. Motivation for the student is heightened when the emphasis within the classroom is placed on the "whole person". This environment provides a focus which recognizes achievements accomplished and initiates the growth of a safe place to belong.

Many factors are cited as instruments that foster student motivation. Clear expectations and flexibility of structure enhance the desire to learn. When students have a structure which enables them to accomplish goals, the motivation increases.

Support must exist for both the teacher and the student. Daily support for teachers via such modes as "pairing and sharing" techniques, education web sites, and professional development should be available.

Student support should include career awareness. Promoting student goal-setting strategies enables her/him to develop higher self-esteem which is a natural motivator to success.

Varied instructional strategies within the class time also excites motivation. Students need variety, choices, and opportunities to take ownership of their learning.

There should be a limited amount of "traditional homework" and the home assignments given should relate to the students interests in real life.

Teaching Strategies

Learning theory research clearly indicates that teachers need to employ a wide variety of instructional strategies to address the learning styles of all learners. Moreover, the nature of certain content or processes can only be taught effectively if specific instructional strategies are employed. In order to achieve this objective, students must have an opportunity to co-operatively brainstorm, discuss, evaluate information, and make informed decisions. Students often point to experiential activities as the best part of a program as they have the chance to work cooperatively and be actively involved in the learning process.

Teachers are ultimately responsible for determining the best teaching methods for their student, the best way of grouping them, and the best way to present material to make it relevant and interesting. Exemplary teachers use a variety of instructional strategies and have the flexibility to call upon several different strategies both within one period and during a unit of study. Adolescent learners need a balance between practical work, listening, discussing, and problem-solving.

Direct Instruction is highly teacher-directed consisting of lectures, explicit teaching and demonstrations. It is effective for providing information and developing step-by-step skills.

Interactive Instruction relies heavily on discussion and sharing among participants. For the teacher it involves management and organizational skills to set up the activities which may involve small groups to class situations. The teacher must observe the students in action and have good record keeping methods. The students will learn from peers and teacher through interactions with both.

Teaching Strategies

Indirect Instruction involves inquiry, induction, problem-solving, decision-making and discovery. It is mainly student-centered and is used to generate alternatives and solve problems. The teacher acts as facilitator, supporter and resource person, while the student is highly involved observing, investigating, inferring information from data or forming hypothesis.

Interactive Instruction relies heavily on discussion and sharing among participants. For the teacher it involves management and organizational skills to set up the activities which may involve small groups to class situations. The teacher must observe the students in action and have good record keeping methods. The students will learn from peers and teacher through interactions with both

Assessment and Evaluation

The terms "assessment" and "evaluation" are often used interchangeably. However, they are not exactly the same. "Assessment" refers to the process of collecting and gathering information about student performance as it relates to the achievement of curriculum outcomes. "Evaluation" refers to the systematic process of analyzing and interpreting information gathered through the process of assessment. Its purpose is to make judgements and decisions about student learning. Assessment provides the data. Evaluation brings meaning to the data. Assessment must reflect the intended outcomes, be ongoing, and take place in authentic contexts.

Meaningful learning involves reflection, construction, and self-regulation. Students are seen as creators of their own unique knowledge structures, not as mere recorders of factual information. Knowing is not just receiving information but interpreting and relating the information to previously acquired knowledge. In addition, students need to recognize the importance of knowing how to perform, when to perform and how to adapt that performance to new situations. Thus, the presence or absence of discrete bits of information - which has been the traditional focus of testing - is no longer the focus of assessment of meaningful learning. Rather, what is important is how and whether students organize, structure, and use that information in context to solve problems.

Evaluation may take different forms depending on its purpose. *Diagnostic* evaluation will identify individual problems and suggest appropriate corrective action. Evaluation may be *formative* in that it is used during the instructional process to monitor progress and to make necessary adjustments in instructional strategies. *Summative* evaluation is intended to report the degree to which the intended curriculum outcomes have been achieved. It is completed at the end of a particular instructional unit.

Since the specific curriculum expectations indicate behaviours involving knowledge, skills, and attitudes, assessment must reflect student performance in each of these areas. The learning outcomes specific to the cognitive domain emphasize the acquisition of cognitive skills at three taxonomic levels: knowledge, understanding, and higher-order thinking. This will help to ensure that the focus on instruction goes beyond the lower levels of learning - recalling facts, memorizing definitions, solving problems and so on. Likewise, the focus of evaluation should also go beyond testing at the knowledge level.

Assessment/Evaluation Techniques

The evaluation plan should include a wide variety of assessment methods. Any single item of information about a student's learning is only a minuscule sample of that individual's accomplishments. All types of learning outcomes cannot adequately be evaluated with a single type of instrument. Notions about students having different learning styles also apply to their performance on items designed for purposes of evaluation.

Evaluation strategies must closely resemble the nature of the instructional program, curriculum, and modern learning theory. There is significant movement toward authentic assessment or performance assessments. These could include such strategies as open-ended questions, exhibits, demonstrations, hands on execution of experiments, computer simulations, writing, and portfolios of students' work over time.

A multifaceted plan is needed to respond to the differences in the intended learning outcomes, the learning styles of students, and to reflect the APEF Essential Graduation Learning.

Individual learning outcomes, the criteria for success and the form that assessment and evaluation will take, should be clearly understood by teachers, students, and parents. This involves clearly describing unit and lesson objectives and how the achievement of these objectives will be assessed. If students are to see themselves as responsible for their own learning, the requirements for attaining success in a unit of work must be clearly understood. The assessment and evaluation of the unit should contain no surprises.

Using Varied Assessment Strategies

Teachers must realize they are preparing students for a world where knowledge is expanding at a rate we can no longer track. This requires that we shift emphasis from content knowledge to information processing skills. Our students need to be able to select, process, and evaluate knowledge.

This knowledge does not always need to be tested directly on evaluations that rely strictly on recall of facts during tests, rather it can be encompassed in higher level objectives such as comprehension, synthesis, or application. These could be better measured through a problem-solving approach.

It is therefore important to emphasize a variety of strategies in evaluation plans. These must reflect the teaching strategies employed in the delivery of the specific topic.

Anecdotal Records are positively written reflections of a student's actions and work while activities are occurring. As an informal assessment process, it is typically based on notes or a check list with space for writing comments. It is completed when appropriate.

Teacher Student Conferences are valuable evaluation techniques to gather information about students not obtained in other ways. More information is shared through conversation than through writing. It allows teachers to assess progress through questioning content and feelings on selected topics. A written record of the conference is advised.

Checklists:

Student **self-evaluation of:**

- interest
- attitudes
- social
- group skills
- understanding

Teacher **evaluation of:**

- laboratory skills
- groups skills
- interests
- attitudes

Group **Self-evaluation of:**

- group skills
- achievement

Testing assesses the student's knowledge and understanding of the subject matter. The most common methods include: essay, column matching, true/false, and multiple choice questions. Also included are problem solving, interpretation and production of graphs, data tables, and illustrations.

Student Work Samples are means for students to communicate what they are learning through a variety of experiences including:

portfolios - a collection of student's work

laboratory reports - documentation of experiential activities

major reports and written reports - further research on topics

homework - opportunity for parent/guardian involvement

learning journals - individual perceptions of progress

oral presentations - individual or group form of communicating ideas.

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Keyboarding

Software: MicroType Multimedia
Recommended Time Allocation: 30% (24 periods)

understand consequences of technological choices

Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
KB1: be familiar with repetitive stress injury	Repetitive Stress Injury (RSI) is a result of repeated movement of a particular part of the body. Carpal Tunnel Syndrome is an inflammatory disease that develops gradually and affects the wrists, hands, and forearms.
	Work Area Arrangement: Demonstrate and model correct work station arrangement.
	• alphabetic keyboard directly in front of chair; front edge of keyboard even with edge of table or desk
	• monitor placed for easy viewing
	• book behind or at right of keyboard; top raised for easy reading (refer to appendix A)
	Insist upon good work habits, posture, and keystroking in order that computer related health problems may be avoided later in life.
KB2: demonstrate proper posture	Proper technique forms the foundation for successful touch keyboarding. The importance of demonstrating and continuously encouraging proper technique with students cannot be over emphasized. Technique should be observed and closely monitored whenever students are operating a keyboard, whether they are keying an e-mail or practicing keyboarding drills. It is extremely important to encourage and develop good keyboarding habits from the start.
	Body Posture:
	• spine straight against back of chair leaning slightly forward from the waist
	• centered in front of keyboard (directly in front of "J" key)
	• sitting a comfortable distance from keyboard (a handspan is suggested)
	• feet on the floor (if possible), slightly apart for body balance
	Correct arm and hand position:
	• arms relaxed
	• elbows close to body
	• forearms nearly parallel with slope of keyboard
	• fingers curved, tips of fingers resting lightly on keys
	• hands close enough together to "lock" thumbs
	• fingers upright–not leaning toward little fingers
	• hands and wrists "quiet", almost motionless
	• wrists low, but palms of hands not resting on the keyboard

understand consequences of technological choices

Tasks for Instruction and/or Assessment	Resources/Notes
KB1.1: Demonstrate proper workstation arrangement consistently.	Century 21 Keyboarding & Information Processing
KB1.2: Prepare a poster to remind computer users of the importance of proper workstation arrangement.	Century 21 Keyboarding & Information Processing Teacher's Manual
KB1.3: Research repetitive stress injury and carpal tunnel syndrome. Report findings.	MicroType Multimedia software
KB1.4: Interview a worker who has experienced repetitive stress injury. Provide details of cause(s), symptoms, remedies and advice for beginning keyboarding students from the personal account.	Workstation Ergonomics (Appendix A)
KB1.5: Practice stretching exercises for keyboarding. (page A14 of the Century 21 keyboarding text)	Century 21 Keyboarding & Information Processing text page A12
KB1.6: Search for a multimedia demonstration of stretching exercises for office workers. Demonstrate two exercises.	
KB2.1: Develop a checklist for correct keyboarding technique.	Criteria for Rating Keyboarding Technique (Appendix B)
KB2.2: Demonstrate correct keyboarding technique.	
KB2.3: Provide regular, ongoing, verbal encouragement and reinforcement of good technique.	Student's Technique Checklist (Appendix C)
KB2.4: Observe student performance and assess using a rating scale. Provide immediate feedback and reinforcement. (Appendix B)	
KB2.5: Perform a self-evaluation or assess each other using a student technique checklist (Appendix C)	

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operate and manage technological systems

Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
KB3: demonstrate proper keystroking	**Correct keystroking:** • beginning and ending all keystrokes at home row position • keying each key with the correct finger • keying the space bar with the thumb of the right hand • shifting with the appropriate "little" finger • using the "little" finger of the right hand for the enter or return key • keeping eyes on copy (text, screen, etc.) rather than the keyboard, once a key has been learned When students forget the location of a previously learned key, they should be encouraged to consult the text/wall chart/software keyboard illustration, rather than looking down at the actual keyboard.
KB4: key by touch, using the correct finger of the correct hand	The Touch Method of keyboarding involves striking the correct key with the correct finger without looking at the keyboard. Keyboarding is the development of the ability to input data by touch using the alphabetic and numeric keys on a computer. Mastery of the keyboard and skill in its operation are vital to its use in processing information. Mastery of the home keys, space bar, and return is essential to the development of proper reach-strokes to other keys and back to the home keys. Strong emphasis should be put on the mastery of these keys in the first two or three class periods. As students are introduced to touch keyboarding and learning the alphanumeric keyboard, students should be encouraged to focus on keeping eyes on copy and using the correct keystroke sequence. When learning touch keyboarding skills, teachers should clearly outline to students that errors will occur in learning any new skill. However, students should recognize and "feel" keystroking errors in the initial learning stages but should not be concerned with correcting any errors at this time. Keystroking errors diminish with confidence, concentration, and meaningful practice.
KB4l: explore and use the keyboard to produce text (literacy outcome)	Reading skills improve when children learn the complex process of touch-typing, even when improved reading was not the intended outcome. A good reason to bring children to the keyboard for early training in touch-typing is the literacy advantage it provides. Use interesting, course specific materials for keyboarding practice. e.g.: from the Computer Literacy or Internet sections.

operate and manage technological systems

Tasks for Instruction and/or Assessment	Resources/Notes
KB3.1: Develop a checklist for correct keyboarding technique.	Criteria for Rating Keyboarding Technique (Appendix B)
KB3.2: Demonstrate correct keyboarding technique.	Student's Technique Checklist (Appendix C)
KB3.3: Provide regular, ongoing, verbal encouragement and reinforcement of good technique.	Keyboarding Chart (Appendix C1)
KB3.4: Observe student performance and assess using a rating scale. Provide immediate feedback and reinforcement. (Appendix B)	Anecdotal Record (Appendix D)
KB3.5: Perform a self-evaluation or assess each other using a student technique checklist (Appendix C)	Warmup Record (Appendix E)

KB4.1: Demonstrate correct learning strategy for learning new keys and the correct reaches for new keys.

KB4.2: Use proper keyboarding techique while learning new keys and performing drills.

KB4.3: Use a colouring activity to help students with key location. Use the keyboarding chart showing both the left and right hand at the bottom of the keyboard. Have students colour the nail of each finger with an appropriate colour. Then ask the students to outline the home row keys the same colour as the finger that is used to strike the key. The space bar is struck with the thumb, the suggested colour is black. As more keys are added to the list of learned keys, they can be coloured the appropriate colour as well. The growing number of coloured keys will give the students a sense of accomplishment in addition to helping with key security.

KB4.4: Video tape keyboarding posture, keystroking and touch keyboarding technique. Perform a self assessment.

KB4.5: Display keyboarding copy using a digital or overhead projector.   This strategy may be used effectively to ensure that students are keeping their eyes on the copy while keyboarding.

KB4.6: Assess individual performance using observation checklists, anecdotal notes, or rating scales on students' keyboarding techniques, work habits, and attitudes.

operate and manage technological systems

Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
KB4: key by touch, using the correct finger of the correct hand (continued)	**Standard Plan for Learning New Keys:** • find the new key on the keyboard chart • look at the keyboard and find the new key on it • study the reach-technique illustrated in the software or textbook • identify the finger to be used to strike the new key • curve fingers; place them in home-key position (over ASDF JKL;) • watch the finger as it reaches to the new key and back to the home position a few times (keep it curved) • key the drill lines twice: once slowly, to learn the new reach; then faster, for a quick-snap stroke • call silently the letters, spaces, and punctuation marks as the keys are pressed • once the new key has been located, extensive drill work is required with "eyes on copy" to promote key security Sufficient practice time must be allowed for students to improve keyboarding techniques and skills. The teacher may choose to set aside a portion of time each keyboarding class to devote to the practice of previously-learned material.
KB5: demonstrate concentration techniques	Key for duplication, not comprehension, by looking only at the letters, not the words. • key on a letter-for-letter (letter recognition) basis • say each letter, or spell out each word, mentally as it is keyed unless speed makes it impossible to do so • do not look at the keys while keyboarding
KB6: demonstrate rhythmic keying techniques	Rhythmic Key Technique is keying at a smooth, steady, continuous pace. Keyboarding speed and accuracy are improved with the development of rhythmic skill. Help establish rhythm by calling out letters to a beat.
KB7: demonstrate conscientious practicing	**Conscientious Practicing**: • learns and applies the techniques that will help build keyboarding skill • is positive and enthusiastic: believes that practicing the materials will yield the desired results. • practices with confidence and with purpose

operate and manage technological systems

Tasks for Instruction and/or Assessment	Resources/Notes
KB4.7: Data collected on the number of warmup lines keyed during each session can be used to monitor the number of lines keyed during specified time periods. Use the information as formative evaluation to guide further instruction and practice.	A Rating Scale for Assessing Attitude and Effort in Keyboarding (Appendix F)
KB4.8: Introduce timed writings starting at ten seconds and progressing to one minute.	
KB5.1: Demonstrate concentration techniques with a positive effort and attitude.	
KB6.1: Demonstrate rhythmic key technique with a positive effort and attitude.	
KB7.1: Improve performance through practice, demonstrating a positive effort and attitude.	

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
KB8: demonstrate increasingly rapid, accurate touch keystroking	Once students have learned key location and have developed security in touch keyboarding the alphanumeric keyboard, they should progress to developing rapid, accurate touch keystroking.
KB9: demonstrate text entry at the rate of 35 words per minute or better on a 3-minute timing (1 error per minute)	Straight-copy (timings) have been a major tool in determining the keyboarding progress of students. Because microcomputers allow for easy and immediate correction of errors during the input phase, and because this is the way students will apply their keyboarding skills, it is suggested that error correction during timed writings be allowed and encouraged. Since the skill of immediate error recognition is important, students should make corrections during a timed writing session, not after the designated time period is elapsed. When recording timed-writing keyboarding rates of the three-minute timed interval, students may be given the opportunity to attempt the same copy twice. The greater of the two attempts would be recorded as the student's keyboarding rate achievement.

Calculating Keyboarding Rates:

A standard word in keyboarding is 5 characters or any combination of 5 characters and spaces. The number of standard words keyed in one minute is called gross words a minute (GWAM). Timed copy in textbook is already counted off in standard words.

A keyboarding rate is determined by taking the total number of keyed words divided by the predetermined time interval (in minutes). If an error is not corrected at the conclusion of the timed writing, one error per minute will be accepted for assessment purposes. (Appendix H)

Timed-writing rates and other information may be recorded in a timed-writing log. The log can be used to chart a student's progress in keyboarding speed development. Timed-writing information can be recorded by both the teacher and student.

The information collected in the timed-writing log, along with other information collected on students progress in keyboarding achievement, can be used in making an evaluation of keyboarding skill improvement.

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Tasks for Instruction and/or Assessment	Resources/Notes

KB8.1: Select short timed-writing intervals to encourage the development of keyboarding skills. Administer timed intervals beginning with ten seconds and progressing to the maximum of three minutes.

KB9.1: Assess individual achievements in the skill of touch keyboarding. In order for touch keyboarding to be a useful skill, it is strongly recommended that students strive to exceed a minimum of 35 GWAM in a three-minute timing with no more than 3 errors (1 error per minute of keying). Touch keyboarding skills will be used throughout the remainder of the course. Information collected on keyboarding skill development should be collected.

KB9.2: Maintain a graph of acceptable timings over time to visually display improvement. Explain that plateaus in the graph are normal and will be followed by speed increases if there is conscientious practicing.

KB9.3: Print an exemplary timed writing as a personal learning portfolio artifact.

KB9.4: Provide a certificate to students that documents the level of keyboarding proficiency attained.

KB9.4: Encourage friendly competition between students of similar skill levels through the use of keyboarding skill games or timed writings.

Resources/Notes

Workstation Ergonomics (Appendix A)

Criteria for Rating Keyboarding Technique (Appendix B)

Student's Technique Checklist (Appendix C)

Keyboarding Chart (Appendix C1)

Anecdotal Record (Appendix D)

Warmup Record (Appendix E)

A Rating Scale for Assessing Attitude and Effort in Keyboarding (Appendix F)

Timed Writing Log (Appendix G)

Scales for Assigning Grades to Keyboarding Rates (Appendix H)

operate and manage technological systems

Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
KB10: proofread documents competently, identify all uncorrected errors, and revise accordingly	Proofreading refers to the process of reading handwritten, keyed, or printed material and marking the errors to indicate the corrections that are required. Proofreading is a skill that requires knowledge and concentration along with patience and attention to detail. Like any new skill, proofreading improves with practice.
	Errors in keying can be found by the spell checker contained within most word processing software packages. Encourage students to use this feature. However, students must be aware that the spell checker does not find all errors. Examples of errors that automated spell checkers do not find include errors in capitalization, spacing, and context.
	When students identify errors on paper, the errors should be marked with special symbols called proofreaders' marks. These symbols highlight the error made and indicate the correction that is to be made. Students should be aware of the different types of errors that can be made and should use the standard proofreaders' marks to indicate a correction. Students should be encouraged to compare the accuracy of the information that was input to the original information source.
	While preparing documents on a microcomputer or word processor, students should be encouraged to proofread their work both before and after it is output. Students may ask a peer to assist with the proofreading process. Using this strategy for proofreading, the work may be checked by the originator while a peer reads aloud from the original information source. Once the originator has corrected any identified errors, the peer may recheck the work for any further errors. A dictionary, thesaurus, and other relevant reference materials should be available for student use when proofreading copy.
	As proofreading is a developmental skill, in the early learning stages, students may be allowed some proofreading errors and encouraged to strive to produce accurate documents reflecting their skill achievement in accurate proofreading and information processing
KB10l: proofread for punctu- ation, capitalization, proper sentence structure, spelling, word usage, and use of abbreviations (literacy outcome)	Locate errors and revise text. Provides opportunity for peer review of work and dialogue regarding correct form and language usage.

operate and manage technological systems

Tasks for Instruction and/or Assessment	Resources/Notes
KB10.1: Explain the meaning of various proofreaders' symbols. KB10.2: Use proofreader symbols when peer reviewing a classmates' work. KB10.3: Evaluate students' production work for proofreading skill.	Proofreaders' Marks (Appendix I) Student Self-Assessment Checklist for Proofreading (Appendix J)

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to : KB11: use correct spacing after punctuation marks	Space twice after the following punctuation marks: • period at the end of a sentence • question mark at the end of a sentence • exclamation mark at the end of a sentence • colon when used in a sentence (These two students were late: Mary and John.) Space once after the following punctuation marks: • semicolon • comma • period used after an abbreviation (Mr. John Smith) Do not space before or after: • slash (/) • colon used to express time (3:25 p.m.) • an apostrophe • dash (–) • hyphen (-) Do not space after the following punctuation marks: • dollar sign ($) • number/pounds (#) Do not space before the following punctuation mark: • percent (%) • asterisk (*) Space once before and after the following punctuation mark: • ampersand (&) Others: • Quotation Marks: Do not space after opening quotation mark or before closing quotation mark. (Mary said, "I believe that I did well on the final exam.") • Parentheses: Do not space after opening parentheses or after closing parentheses (This is a good example).

operate and manage technological systems

Tasks for Instruction and/or Assessment	Resources/Notes
KB11.1: Apply spacing rules while learning the keyboard. KB11.2: Provide sentences with errors in spacing before and after punctuation marks. Ask to make corrections. KB11.3: Assess knowledge of spacing rules in all keyboarding.	

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Computer Literacy

Recommended Time Allocation: 6% (4.5 periods)

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Outcomes Students will be expected to :	Elaboration- Strategies for Learning and Teaching
CL1: identify the parts and functions of a computer	Identify the input, output, processing, and storage components of a computer. Explain the function of each part of the computer. Discuss the difference between RAM and ROM. Computer technology and processing power may be found in a wide range of consumer products. e.g.: cell phone. Does this make the cell phone a computer? Computer components are continually becoming smaller and products that have traditionally been separate are being combined into one device. i.e.: cell phones may contain functionality of a digital camera, gps unit, text messaging, Internet surfing, calendar, alarm clock, address book, appointments, etc. Moores Law states that the processing power of computer technology will double every two years. This theory has proven to be true since 1965 and technology companies, such as Intel and IBM, have lab prototypes that will allow this rate of development to hold true for at least another 10 years. Relate developments in processor speed, memory capacity, size (laptops, personal digital assistants, cell phones), storage (hard drives, flash cards, DVD, Blue Ray, etc.) and network communications (routers, switches, unshielded twisted pair wiring, fibre optics, wireless, satellite). Emphasis that not only is the cost of technology decreasing but the cost per computing unit is exponentially decreasing!
CL2: demonstrate the proper set up of computer work station and explain the importance of an ergonomic work environment	Become familiar with logging into the school local area network, accessing programs, saving data, exiting programs, logging off the network and shutting off equipment. Demonstrate and model correct workstation arrangement. Refer to appendix A . Stress that ergonomic factors will often relate to the physical size of the user. Computer workstations are often customized for particular workers in the workplace since many hours each day are spent at the keyboard. Emphasize that workstation design is directly related to preventing repetitive stress injuries. (Outcome KB1)

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Tasks for Instruction and/or Assessment	Resources/Notes
CL1.1: Draw a schematic sketch of a computer and its parts. Describe the movement of data within the computer.	ITC401A Teachers' work space. http://www.edu.pe.ca/journeyon/ pro_d_pages/atutor1.htm
CL1.2: Examine components from an old dismantled computer.	
CL1.3: Identify computer peripherals and their use.	The Journey Inside: Intel Education. http://educate.intel. com/en/thejourneyinside/ (2008)
CL1.4: Research a computer component, peripheral or port/ connector cable, etc. Report findings to group or class.	Wikipedia. http://en.wikipedia.
CL1.5: Brainstorm a list of consumer products that contain computer technology and processing power.	
CL1.6: Research the specifications for a current computer system i.e.: PC, MAC, laptop, etc. Identify how the speed or capacity of various components is measured. What is the price of the system? Are there upgrade options? Why might you want to upgrade?	
CL2.1: Demonstrate how to turn on equipment, log on to the network, connect to a printer, open programs, save data, exit an application correctly, log off the network and properly shut down equipment.	Workstation Ergonomics (Appendix A)
CL2.2: Examine the work station in the classroom or at home and identify ergonomic deficiencies. Are these general problems or do they relate personally? i.e.: an unusually short or tall person, etc.	
CL2.3: Research ergonomic workstation design. Prepare a checklist or pamphlet that would ensure that workstations are properly configured.	

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
CL3: identify and describe the basic function of operating systems	Operating systems provide the interface for interaction among users, applications, and hardware. Some common operating systems include Windows XP, Windows Vista, UNIX, Linux (open source), OS X Leopard (MAC), and Solaris (SUN). All operating systems provide the following functions: • **control hardware access** - "plug and play" and device drivers supplied by manufacturers allow hardware components to be recognized and used by the operating system. • **manage files and folders** - the operating system creates a file structure on the hard drive. These structures are different between operating systems and files can not be directly shared. i.e.: MAC files can not be opened directly in Windows XP • **provide a user interface** - the operating system allows the user to interact with software and hardware. Most operating systems provide both a command line interface (CLI) where commands are typed at a prompt C:\\> and a graphical user interface (GUI) where the user interacts with menus and icons. • **manage applications** - the operating system locates applications, loads them into memory and ensures that each application has the resources required to function. Applications are software programs such as word processors, databases, spreadsheets and games.
CL4: identify the importance and functions of software applications	Differentiate between hardware and software. Describe the importance of software for the operation of a computer system. Introduce the major functions and purposes of system software (Windows, Linux, Novell), and application software (Word Processing, Accounting, Games). The difference between system and application software should be discussed. Recognize the difference between stand-alone, integrated, and suite software.

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Tasks for Instruction and/or Assessment

CL3.1: Statistics show that the Windows operating system is used by approximately 91% of users (June, 2008). Discuss the implications for someone who is considering using a MAC or Linux operating system on a home computer to complete projects for work or school.

CL3.2: Research the founding of the Linux operating system and the principles upon which it has been developed. What are some different names of current Linux operating systems? Report findings.

CL4.1: Brainstorm a list of 10 well known software products. Classify these as belonging to system software (operating system or network) or application software.

CL4.2: Research 2 application suites. Identify the applications by name and purpose that are found within the suite.

Resources/Notes

Maintain Your Files Software

http://www.edu.pe.ca/journeyon/tech_support_pages/stchelp/maintain_files/index.htm

understand consequences of technological choices

Outcomes

Students will be expected to :

CL5: explain basic methods
of care, maintenance
and disposal of
computer systems

Elaboration- Strategies for Learning and Teaching

Care should be used when setting up a work station that cords and cables are tucked away where they will not become frayed by chairs rolling over them or where they will present a tripping hazard. Equipment should not be placed under open windows where there is a potential of water damage or in an area that is unusually dirty. e.g.: wood working shop. Use a surge protector for power plugs and to protect Internet cables. Preventive maintenance is used to reduce the probability of hardware or software problems. Perform the following tasks on a regular basis:

- remove dust from fan intakes and clean outside of case (damp lint free cloth or compressed air can)
- cover or replace missing expansion slot covers
- clean the mouse and keyboard (damp lint free cloth)
- check and secure loose cables
- apply security, operating system and software updates
- update virus definition files
- scan for viruses and spyware
- remove unwanted programs (control panel, add/remove programs)
- scan hard drives for errors (chkdsk utility)
- defragment hard drives (defrag utility)

Computer systems contain heavy metal hazardous waste such as cadmium, lead and mercury. Check the Island Waste Management Corporation (IWMC) site to determine how to properly dispose of various computer components. Currently, obsolete PEI school computers are shipped by IT Shared Services to Quebec for recycling.

Untrained individuals should not open the computer case to avoid the possibility of electrical shock or damage to components from electrostatic charges. Should the case be opened, clean internal components with a can of compressed air. Never use a regular household vacuum cleaner to clean inside a computer as electrostatic charges will build up, potentially damaging components.

understand consequences of technological choices

Tasks for Instruction and/or Assessment	Resources/Notes
CL5.1: Demonstrate connection of surge protector, monitor, mouse, keyboard, printer and other peripherals.	
CL5.2: Demonstrate loading of paper, toner, and use of printer features.	
CL5.3: Demonstrate cleaning of monitor, keyboard, and mouse.	
CL5.4: Prepare a brochure for Island Waste Management Corporation explaining to customers how to properly dispose of various computer components. i.e.: monitor, batteries, hard drives, CD/DVDs, printers, toner cartridges, mother boards, power cords, etc. Be sure to include any costs that may be levied and if equipment must be dropped off to a disposal site.	

operate and manage technological systems

Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
CL6: identify methods to protect electronic data	Security policies and good data management practices will ensure that an organization's data remains safe. Data security is one of the fastest growing areas in the IT sector. Aspects of security include:

- insist that users maintain copies of data on the network drive where files are backed up daily
- use an interruptible power supply on the server. (this will provide power for the server until it can shut itself down properly)
- store backup tapes away from the server in a safe location.
- use grandfather, father, son backup method. i.e.: a separate backup tape is labeled for Monday, Tuesday, Wednesday and Thursday. There are 4 Friday tapes labeled Week 1 through Week 4 and are weekly backups of data. Tapes are reused on a rotational basis. Using this method there are always backups of data from the previous 4 days and the prior 3 weeks.
- use a virus checker, anti spyware program and firewall. Update software regularly and apply signature files daily.
- have users sign an acceptable use agreement that outlines the organization's policies regarding how resources are to be used.
- lock network equipment closets and secure equipment in "common" spaces with cables and locks.
- set workstation or network restrictions limiting user access to particular programs and data
- require robust passwords that are at least 8 characters in length with a combination of numbers and alphabetic characters. Set the password to expire periodically and set password history so that previously used passwords can not be reused. Educate users not to use passwords that contain the names of family members, pets and birth dates of close relatives. Passwords should not be written down and placed under the keyboard, mouse pad, monitor or anywhere else near the workstation. i.e.: behind the calendar on the wall.

| CL61: use efficient strategies for recording, organizing, and storing information that they read, hear, or view (literacy outcome) | Recognize that the storage and retrieval of electronic files and documents is an essential literacy skill. Students should easily relate to the advantages of proper storage, organization and retrieval of MP3 player songs and playlists. |

operate and manage technological systems

Tasks for Instruction and/or Assessment	Resources/Notes
CL6.1: Regularly virus check hard drives, CD/DVD's and individual files.	
CL6.2: Write a policy regarding password creation and use for family members to use on the home computer.	
CL6.3: Demonstrate naming conventions for files that are saved to multiple locations.	
CL6.4: Demonstrate cleaning of a DVD with a lint free cloth.	
CL6.5: Demonstrate creating an ISO image of a CD/DVD with burning software.	
CL6.6: Demonstrate encryption of files as they are saved to a jump drive. (Remind users that the file is not recoverable and can not be erased should the encryption password be forgotten)	

operate and manage technological systems

Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
CL6: identify methods to protect electronic data (continued)	

Wireless networks are very popular for home use. Unfortunately, many users are not familiar with setting security features on their wireless routers. This leaves the network open to use by others who may use the Internet connection for illegal purposes or make the network vulnerable to viruses. The following points may be "awareness" items for students who may be operating an unsecured wireless network:

- change the default administration passwords on the router
- set the router so that it can not be configured remotely. (user needs to attach patch cable directly to the router to configure)
- enable WAP encryption of data
- change the default network name and disable SIDD broadcast advertisements of the network after computers have been added
- use MAC address filter to ensure that no unknown devices can connect to the wireless network

External storage:

Jump drives (memory sticks, thumb drives, geek drives), CD/DVD, online web storage and email are commonly used to store and transport electronic files. Users must consider the following:

- virus scan files as they are transferred from one computer to another (especially if using a thumb drive or DVD belonging to someone else)
- develop a method to name files that clearly shows the file version. i.e.: place a date in the file name so you know if the most current file is the one on G: drive at school, on the thumb drive or on C: drive on the home computer.
- CD/DVD's are easily damaged. Clean with a lint free cloth wiping from the center of the disk outward (do not wipe in a circular motion).
- make copies of important data CD/DVD's. If there is burning software on the computer, make an ISO image and save it to the hard drive. Should a copy of the CD/DVD be required the ISO image can be burned from the hard drive back to a blank CD/DVD.
- jump drives are easily lost. Encrypt personal data that is stored on these devices and make sure copies of important files are stored elsewhere.

operate and manage technological systems

Tasks for Instruction and/or Assessment	Resources/Notes

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Outcomes

Students will be expected to :

CL7: explain computer ethics as it applies to copyright law, privacy issues, and social interaction

Elaboration- Strategies for Learning and Teaching

Define ethics and explain why a complete code of ethics in the computer industry has not been developed. Current Canadian law has been interpreted that it is not illegal to watch copyrighted movies free on the Internet but that it is illegal to download them to the users' computer. Is the watching of online movies ethical?

Explain that duplicating copyrighted material is illegal and may be prosecuted as a criminal act. This extends to music, text, images and graphics obtained from the Internet and incorporated into multimedia or web page projects. Should a student wish to use works of others found on the Internet permission must be obtained and credit provided.   Some Internet sources are educationally friendly or have material registered under creative commons licensing. Terms stipulate that materials may be used for personal, non-commercial purposes provided credit is given to the artist.

In most instances software may be installed on a single machine and one backup copy of this software may be made for archival purposes. Product license agreements must always be checked for specific product use stipulations.

Identify benefits of buying legitimate copies of software from reputable dealers. For example, it promotes the development of new software and at reasonable prices; provides the user with manuals, tutorials, and product support; and notices of product upgrades or other relevant information is sent to authorized users.

Describe the difference among copyright, copyleft, creative commons, educationally friendly, open source, public domain, freeware and shareware software, as well as the legal or moral responsibility in using each.

Information posted on Social Networking sites are stored and shared through multiple databases. Privacy and safety must be considered when posting to online sites such as Facebook. A survey of profiles on a college social networking site provided the following findings:

- 91% of profiles contained an image
- 88% revealed a birth date
- 40% revealed a telephone number (29% a cell phone number)
- 51% list current residence
- other information included class schedule, political views, and whether in a current relationship

(ACM Workshop on Privacy in the Electronic Society, 2005)

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Tasks for Instruction and/or Assessment

Resources/Notes

CL7.1: Discuss why the computer field does not have a complete code of ethics. Develop a concept map containing brainstormed points for a code of ethics for computer users.

CL7.2: A friend tells you that she is starting a computer users group where members contribute $5 per month and then borrow and copy games that the group buys. Would it be ethical to join such a club? Under what conditions would such a club be acceptable? Discuss and report.

CL7.3: An avid music fan has several hundred CD's of his favourite genre. He plans to rip a favourite song or two from each CD and compile new homemade CD's of "the best greatest hits". Is it legal to do this? Is it ethical to do this? Support your position with research from the Internet related to Canadian Copyright law. Provide legal advice to this person in the form of a short paragraph or two. Cite sources of information found.

CL7.4 Is it ethical to access a private wireless network that has been left open without security (hot spot)?

CL7.5 Research recent security/privacy concerns about an online service such as Facebook or Second Life. Report findings.

CL7.6 Prepare a short report for a younger relative (or his or her parents) explaining how to safely use online social networking sites.

CL7.7 Prepare an online survey to determine the degree of knowledge peers possess about online privacy and the use of social networking sites.

CL7.8 Create a skit or video demonstrating a privacy concern with a social networking site. e.g.: someone writing personal information on a wall in real life for everyone to read, telling everyone in class/school a personal piece of information face-to-face from the front of a room, etc.

CL7.9 Demonstrate ethical behaviour in regards to copyright laws and due diligence in regards to online privacy and personal safety.

Note: Bill C-61 which will revise Canadian Copyright Law was tabled in June, 2008. It's introduction has been disrupted by the call of a Federal election at the writing of this document. This is an area that is expected to under go many changes and will need to be researched by teachers and students.

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Outcomes

Students will be expected to :

CL7: explain computer ethics as it applies to copyright law, privacy issues, and social interaction (continued)

CL7l: demonstrate an awareness of the social issues around the use of information: copyright, censorship, plagiarism, citation, etc. (literacy outcome)

Elaboration- Strategies for Learning and Teaching

As of September, 2008 the following privacy concerns have been raised about social networking sites.

- Canadian Privacy Commissioner launches Facebook probe after University of Ottawa law students file complaint that 22 law violations were found. (Associated Press, May 30, 2008)
- third party applications that are installed allow "owners" to view both private and public profiles. These can be downloaded and stored.
- it is almost impossible to delete a social networking profile. Data items must be deleted one at a time
- information posted has been used for criminal and legal investigations. People have been disciplined, refused employment, and not accepted to fields of study based upon information found online. Once information has been posted and automatically distributed among many sites and databases it may not be possible to find and delete it.
- surfing habits are recorded. Tools used, length of time online, number of times accessed, who visited, messages sent, etc.
- image recognition software allows faces to be tracked through databases and individuals identified on various sites, even when using assumed names.
- groups are identified and targeted for SPAM and Phishing schemes. Bogus links provided that resemble trusted banking, university and other business sites where confidential information such as account and credit card numbers may be stolen. Information may be collected for identity theft or to commit fraud.
- information may allow bullying, stalking, and predator activities to occur. Ultimately, individuals do not know how information will be used (now and in the future) and by whom.
- users agree to software "Terms of Service" without reading the content. For example, once data is posted on social networking sites it is controlled or owned by that organization and may be provided to others without recourse. After all, the organization is providing the service for "free". Many newscasts will contain photographs of individuals provided for a fee from these sites (those who have been victims, perpetrators of crimes or involved in scandals, etc.) and information is regularly sold to marketing companies and other "third parties". This use of data is also stated in many "Terms of Service".

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Tasks for Instruction and/or Assessment	Resources/Notes
	Office of the Privacy Commissioner, Canada. Social Networking and Privacy. http://www.privcom.gc.ca/fs-fi/02_05_d_35_sn_e.asp
	Kidzonline Security and Ethics Lesson Plan http://www.nnkol. org/LessonPlans/
	Nortel LearnIT Digital Ethics http://nortellearnit.org/ technology/Digital_Ethics/
	Nortel LearnIT Online Safety http://nortellearnit.org/ technology/Online_Safety/

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	

Outcomes

Students will be expected to :

CL8: identify forms of computer crime

Elaboration- Strategies for Learning and Teaching

Computer crime (which includes computer fraud, stealing computing time, hacking private computing sites, and computer abuse) are growing and are expensive problems in the computer industry. Individuals who commit these crimes do so for a variety of reasons-- from the excitement and challenge of breaking into a processing system to feelings of frustration or disgruntlement with their current work assignment. Many of these people do not realize the seriousness of their actions.

Tools and information to commit computer crime are readily available from the Internet. Impress that installing tools on public computers or using the Internet to interfere with others' use can result in serious consequences including criminal charges. A conviction will have implications for future employment in the IT sector, in business or within government.

Well-known computer crimes include:

- trading copyright, obscene and illegal materials through peer-to-peer networks, email or posting online
- copying copyright CD/DVD's for personal use or for resale
- releasing viruses, or applying key logging or other unauthorized software on anothers' computer
- attempting to gain access to another users account
- sending SPAM or embedding adware or spyware into a web site or software
- Phishing - contacting a person by email or telephone pretending to be another person or legitimate organization such as a bank. The criminal may ask for verification of information such as username, password or bank account number
- Denial of Service - bombarding a web or email server with automated requests that prevent intended users from using the service
- Replay - using network sniffers to extract unencrypted usernames and passwords to be used later to gain access to a network.
- Stealing credit card numbers and ordering goods under false pretenses or assuming another persons' identity
- using electronic tools to harass, blackmail or bully others or to sell illegal products

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Tasks for Instruction and/or Assessment

CL8.1: Research periodical indexes of magazine articles from the school library or online using EBSCO Host relating to the topics of computer crime, fraud or ethics. Summarize three articles citing sources. Present a favourite article to the class prior to submitting the assignment. Provide an opportunity for classmates to ask questions and to discuss issues raised.

CL8.2: Examine the schools Internet "Acceptable Use Policy" to discuss security measures that exist on the schools' computer network. Identify ways that computer ethics or crime might come into play within the school context. Have students suggest possible penalties for committing certain types of offenses eg. trying to find out others' passwords, accessing forbidden sites on the Internet, damaging equipment or stealing mouse balls, changing passwords of students who might forget to log off the system, sending e-mail under the name of the person who forgot to log off, sending chain letters, sending unwanted or off-coloured e-mails to individuals within the school, trying to gain unauthorized access to other areas within the network.

CL8.3: News reports appear from time to time regarding people "hacking" into computer systems. Provide one of these articles to your class. Discuss how the crime was committed, damage (if any) to the computer system, how the person(s) was caught, whether they will be criminally charged, and what is the maximum sentence that one might obtain.

Resources/Notes

EBSCO Host http://search. ebscohost.com/Login.aspx

Username: peiebsco

Password: level3

examine current and evolving careers and the influence if technology on the nature of work

Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	

Outcomes

Students will be expected to :

CL9: recognize that career opportunities, personal technical skills, and educational programs are affected by changes in technology

Elaboration- Strategies for Learning and Teaching

Information technology is used directly or indirectly in a wide variety of occupations. Consider the health sector. Brainstorm the variety of ways that technology is used in hospitals or medical laboratories.

Career areas that require a significant level of computer knowledge and training include Networking and Computer Repair, robotics, Computer Aided Design (CAD), Geographic Information Systems (GIS), helpdesk support, technology sales, new media (web, audio, video, animation, imaging, games development), administration (secretarial, accounting, managerial, records and database administrator), programming, publishing, education and communications. This list of career fields is vast. Are there a group of "foundational" computer skills that everyone should possess in order to be successful? Brainstorm a listing.

Nine **Essential Skills** have been identified by Human Resources and Skills Development Canada (HRSDC): reading texts; document use; writing; numeracy; oral communication; thinking skills (including problem solving, decision making, critical thinking, job task planning and organizing, finding information); working with others; computer use; and continuous learning. These Essential Skills are explicitly identified in over 250 occupational profiles. This allows students to examine their own aptitudes and strengths to determine if a particular occupation or field of study is suited to them.

The rate of change in computer technology has allowed the development of sophisticated, collaborative Internet tools and services (termed Web 2.0) and inexpensive applications for the personal home computer that were previously available for systems that cost tens of thousands of dollars. i.e.: linear video editing, audio production, graphic and game development, etc. These changes have required that anyone working in the IT sector continually keep abreast of changes through professional development, research and/or further study. These changes have sparked the growth of small, creative organizations with new ideas and business models. Ask how the music recording industry has been affected by technology changes. Technology has also allowed employees to perform work and collaborate remotely or from a home office. What may be some advantages and disadvantages of working from home?

examine current and evolving careers and the influence if technology on the nature of work

Tasks for Instruction and/or Assessment

CL9.1: Identify one occupation where information technology is not used. Support your position.

CL9.2: Identify specific changes in the workplace or careers that are the result of advances in information technology. Communicate finding through a threaded discussion forum, dramatization or video vignette.

CL9.3: Research occupational profiles (NOC) related to the IT sector. What essential skills are identified for these occupations? Create a concept map of findings.

CL9.4: Research technology programs at local post secondary institutions and an industry certification. (CISCO, Novell, Microsoft, CompTIA, Nortel, Oracle, Sun, Linux, IBM, Hewlett Packard, Compaq, Adobe, etc.) Prepare a brochure describing educational and experience requirements for a particular career path.

CL9.5: Invite a guest speaker from a post secondary institution to speak about particular technology programs and industry certification opportunities. Prepare a list of potential questions.

CL9.6: Distance learning requires that the learner possess a particular skill set, attitude and aptitude to be successful. Create a skills inventory checklist that may be given to someone contemplating enrollment in an online course.

CL9.7: Create a personal resume. Include the resume as an artifact in the personal learning portfolio.

Resources/Notes

Human Resources and Skill Development Canada http://srv108.services.gc.ca/english/general/Understanding_ ES_e.shtml

Service Canada, Training and Careers, Employability Checklist Survey http://www.jobsetc.ca/toolbox/checklists/employability.jsp

Career Crusing site http://careercruising.com/

Ontario Skills Passport http://skills.edu.gov.on.ca

New Brunswick Distance Education Online Readiness Quiz https://www.nbed.nb.ca/nbvhs/d2l_rq.asp

Cisco Virtual Field Trips http://www.cisco.com/web/learning/netacad/career_connection/promoteIT/VFT/index.html

Kidzonline IT Career Information http://www.nnkol.org/StreamingFutures/

examine current and evolving careers and the influence if technology on the nature of work

Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	

Outcomes

Students will be expected to :

CL9: recognize that career opportunities, personal technical skills, and educational programs are affected by changes in technology (continued)

Elaboration- Strategies for Learning and Teaching

Many high school, college and university students are studying from home through distance learning courses. These courses allow students the flexibility to work and study at the same time. They do not need to incur the expense of living away from home or to be separated from family and personal commitments. The courses are flexible in that students study when it is convenient for them - late at night, early in the morning or on weekends. While distance learning has many advantages this mode of learning is not for everyone. Students must be self-motivated, be organized, and be able to study and meet deadlines to be successful. Many schools will ask students to complete a readiness survey to help them decide if they are likely to be successful in an independent, distance learning environment.

Business organizations also use distance learning tools to provide professional development opportunities to employees. This reduces travel costs and disruption in the personal lives of employees. The pace of change in the workplace, in technology and in foundational skills required to perform tasks require everyone to engage in continuous life-long learning. Many organizations, especially in the IT sector, encourage employees to complete national and international certifications. Some examples in IT include CISCO, MicroSoft and Novell who offer multiple certification programs.

The Conference Board of Canada, Canadian Coalition For Tomorrow's IT Skills, Statistics Canada and the Information and Communications Technology Council are predicting a crisis in filling IT job vacancies. Over 600,000 workers are employed directly in IT positions in Canada and an estimated 31,000 will retire in the next five years. (mainly from the government, banking and insurance industries who were the first and largest employers of IT professionals). When economic growth is considered it is estimated that 35,000 new IT workers will be needed in each of the next five years. Presently there is enough demand to fill 9,000 gaming jobs in Vancouver and another 3,000 in Montreal. These jobs and the economic benefits are lost because there are not people available who have the skills required. *(Paul Swinwood, Presentation ATC, Charlottetown, April 2007)*

examine current and evolving careers and the influence if technology on the nature of work

Tasks for Instruction and/or Assessment	Resources/Notes
	Selected Certifications:
	Cisco Systems Career and Academy Information http://www.cisco.com/web/learning/netacad/career_connection/promoteIT/index.html
	Oracle Academy https://academy.oracle.com/
	Microsoft Academy http://www.microsoft.com/education/msitacademy/default.mspx
	Novell Academy http://www.novell.com/partners/training/academy/spresent.html?tab=0

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operate and manage technological systems

Outcomes

Students will be expected to :

CL10: identify and demonstrate processes involved in managing and distributing files

Elaboration- Strategies for Learning and Teaching

Application programs and data files must be organized into folders and subfolders on the hard drive. Should this not be done it becomes difficult to find needed files efficiently over time. Should more than one person be saving files without an agreed upon structure the problem of locating particular files becomes multiplied.

Hard drives are assigned a letter, such as C: or D:, and are displayed by the operating system. Files that are not placed inside a folder in a drive are said to be in the **root directory**. It is not good practice to save files directly to the root directory. Instead **folders** should be created. By default Windows XP places most application programs into a folder called **Program Files**. The user creates separate folders for data and organizes them by type of application or by project being worked upon. Review the process for creating folders, subfolders, copying, moving, and deleting files.

Authors of documents are concerned that recipients are able to read the contents of electronic files. Some users are unable to read particular files because they may not have the same application software, operating system or computer hardware. As the Internet evolves users are demanding that information may be read across multiple applications, platforms and computer systems.

File formats that allow users to read the contents of files created in different programs and computer systems include Adobe portable file format (.pdf), Microsoft rich text format (.rtf), hypertext markup language (.html), extensible markup language (.xml), Microsoft electronic paper format (.xps) and Adobe flash paper format which displays using the Shockwave player (.swf).

Most applications allow files to be converted from native format to at least one of the formats listed above. The menu option to perform this task is usually one of the following: select File - Save As; or File - Publish; or File - Export. Demonstrate publishing a file to .pdf (Word Perfect 12) and accessing it within Adobe Reader or saving a file in .rtf from within Word Perfect 12 and opening it directly in another program, such as Word 2007.

operate and manage technological systems

Tasks for Instruction and/or Assessment	Resources/Notes
CL10.1: Discuss good file naming conventions and practices.	
CL10.2: Research file management tips. Create a class top 10 list from the information found.	
CL10.3: Identify the nature of a file by its extension.	
CL10.4: Demonstrate creating folders, subfolders, copying, moving, deleting files and folders.	
CL10.5: Export or save a document to .pdf or .rtf formats. Ensure that the file will open.	

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Internet

Software: Internet Explorer
Recommended Time Allocation: 6.5% (5.5 periods)

understand the history and evolution of technology and its social and cultural implications

Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	

IT1: define the Internet from a technical perspective

A technical definition of the Internet is that it is a world-wide connection of networks. These networks are connected through copper wire, fibre optic, satellite and other wireless connection technologies.

In order for computers on one network to communicate with computers on another network a router is needed. A common set of rules must be used world wide for routers to be able to function. These set of rules are called the Transmission Control Protocol and Internet Protocol (TCP/IP).   Each computer attached to a network must have an Internet Protocol (IP) address that takes the form xxx.xxx.xxx.xxx These IP addresses may be private (used within a single organization or local area network) or public (used for access to the Internet). Public IP addresses are managed in North America by the American Registry for Internet Numbers (ARIN). For communication among computer networks no two public IP addresses can be the same.

The single user computers and Local Area Networks (e.g.: schools) that use private IP numbers must be connected to a computer that has been assigned a public IP address. Such a computer is often referred to as an Internet Service Provider (ISP) since it provides access to Internet service to all the computers and networks connected to it. The ISP pays a fee for the right to use it's public IP address. Customers pay a fee to the ISP in order to use this "gateway" onto the Internet.

Ensure that students understand that this is a simplistic description of network communication. Organizations employ network specialists to ensure that its network is set up and functioning properly.

The traditional public (32 bit) IP address numbers xxx.xxx.xxx.xxx are being used up and this system will change to IPv6 xxxx:xxx:x:xxxx:x:xxx:x:x which uses 128 bit hexadecimal numbers. This change will allow for Internet user growth.

Concern is being expressed that the Internet is in jeopardy of slowing to the point it will become useless. The increased use of the Internet infrastructure (routers, fiber optic lines, satellites, etc.) for streaming audio, video, and transfer of large files along with larger numbers of users will cause traffic to slow and bottleneck. Research if this prediction is becoming reality.

understand the history and evolution of technology and its social and cultural implications

Tasks for Instruction and/or Assessment	Resources/Notes

IT1.1: Research the development of the Internet and express an opinion as to why the Internet has gained such unexpected popularity.

IT1.2: Identify local Internet Service Providers (ISP).

IT1.3: Research the continued growth in Internet use and services. Report ways in which telecommunication companies have ensured that traffic growth can be accommodated.

Resources/Notes

Inventing the Internet Age, CBC Archives. http://archives. cbc.ca/science_technology/computers/topics/1738/

CISCO forecast of Internet Growth 2007-2012. http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-481360_ns827_Networking_Solutions_White_Paper.html

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Outcomes

Students will be expected to :

IT2: describe the implications, uses, and applications of the Internet

IT2l: use a variety of resources and technologies when working with others (literacy outcome)

Elaboration- Strategies for Learning and Teaching

The Internet does not belong to an organization, government, or individuals. Consequently, it lacks control and has brought about a number of previously unknown or little understood phenomena. These include: accessibility of information across international boundaries without the effective means of controlling this information flow, the proliferation of material of questionable taste and/or truth value, the effect on local cultures, and the explosive expansion of our knowledge base.

Educationally, the Internet has become the ultimate information and publishing resource. Web 2.0, sometimes referred to as the "Collaborative Web", allows for enhanced inter activity, collaboration, and social networking. Online, interactive, tools combined with free or inexpensive storage space, audio, video and image capabilities, and database technologies create productive learning and research environments. Distance learning opportunities are offered by a variety of organizations including high schools, colleges, universities and businesses.

Brainstorm impact of the Internet on society, institutions, governments and the Individual. These may include a discussion on the use of:

- distance learning/life-long learning
- advertising
- online banking
- gaming/gambling
- news source/unofficial news
- personal publishing
- entertainment (online music, video, movies, TV, games)
- communication (voice over IP telephone, email, chat, Facebook, web cams, conferencing)
- ordering products (Paypal, online stores, E-Bay, credit cards)
- information source - library resources, government, periodicals
- identity theft, harassment, online crime
- addiction to online spaces

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Tasks for Instruction and/or Assessment

IT2.1: Distance education opportunities are widespread. List advantages and disadvantages of acquiring an education entirely through this means.

IT2.2: Use ATutor Learning Content Management tool or a Web 2.0 tool to provide class content, to share files or links, to hold a threaded discussion or to participate in an online poll, review or quiz.

IT2.3: Brainstorm a list of ways in which students and their families regularly use the Internet.

IT2.4: Research the term Web 2.0. Identify Internet tools that would fall into the category of Web 2.0. Is there a Web 3.0? How are these tools different?

IT2.5: Validity of information obtained from the Internet has become a major concern for educators. Ask students to identify ways by which validation of materials can be accomplished.

IT2.6: Is the use of the Internet a right or a privilege? Discuss. (acceptable use policies, digital divide, protection of minors, access to information, etc.)

Resources/Notes

BC University Libraries. Evaluation of Internet Resources. http://www.bc.edu/libraries/help/howdoi/howto/evaluateinternet.html

ITC 401 Teacher's ATutor Workspace http://atutor.edu.pe.ca/atutor

operate and manage technological systems

Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
IT3: use an email application to send and receive mail, add attachments, and to process received mail	Email is among the most often used resources on the Internet. It permits the sending/receiving of electronic mail and attaching of files. Email forms a written record of correspondence and may be forwarded to others. Do not write something in an email that you would not be comfortable in having a wider audience read. Should you have an item to discuss with an individual that is of a confidential nature, see that person face-to-face or contact them by telephone.
	Utilize the following functions of email:
	• create an address book
	• manage addresses (add, delete, search, move, create distribution list)
	• send mail (select recipient address, carbon copy, blind carbon copy, subject, spell check, add signature, add attachment)
	• receive email (open attachment, save attachment, recognize who else received the same message)
	• processing mail (applying filters, organizing mail into folders, forward, reply and delete mail)
	Become familiar with calendar, appointment, task and note features that may be included with the email software.
IT3l: compose or create works of communication for specific audiences and purposes (Literacy Outcome)	Practice keyboarding, literacy and email skills by writing an email to a family member or friend. Extensions may include a letter to the editor, a request for information, or a message of complaint.

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Tasks for Instruction and/or Assessment	Resources/Notes
IT3.1: Form groups of five students each and give each student in the group one hint to a puzzle. The purpose of this email game is to obtain from each member of the group the clue and then, when all clues have been collected, to provide the solution to all members of the group. This can be a group or individual effort. For example, you may provide five hints to find a capital city, a sports team, the model of a car, etc. To make this game more challenging, you may also give clues which will not contribute to the solution. If the game is a group effort, it may be helpful for the group, via email, to decide on a strategic plan.	Netmail Tutorial. PEI Department of Education, 2006. http://www.edu.pe.ca/journeyon/ pro_d_pages/netmail/index.html
IT3.2: Create a group and add three members to this group as "blind copy". Send a mass email to the group. Check that the recipients of the email can not determine who else the email was sent to.	
IT3.3: Apply a filter to automatically respond to incoming emails with the message "I will be away until Monday. Please call 123-4567 if you require immediate assistance".	
IT3.4: A student sends an email to another student with an expression of affection. The recipient forwards this email to a group his/her friends. Discuss who owns email after it is sent? Can anything be done to prevent re-distribution of the content of an email? Are there ethical considerations? What might have been done to have prevented this unpleasant event from occurring?	

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Outcomes	Elaboration- Strategies for Learning and Teaching

Outcomes

Students will be expected to :

IT4: identify and use the main functions of a browser

Elaboration- Strategies for Learning and Teaching

Many of the functions provided in the menu bar of a browser have a graphical representation in the button bar. The main functions of a browser are:

Back/Forward: allows the user to go to the previous or next page. The the back/forward functions refer only to those page which have been already visited since the browser uses the computer's memory or virtual memory (cache) to reload these pages. Demonstrate that a listing of pages visited may be accessed using the arrow beside the **Back** button.
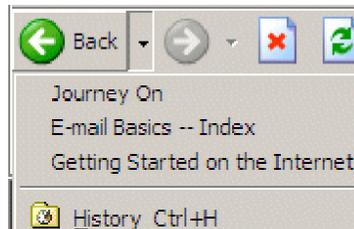
Home: This function returns the user to the initial page which has been specified in the browser's preferences.

Favorites: This feature allows the user to "record" the URL of visited sites.

Reload: As the name implies, it will reload the current page. This function is of value if the message: "Transfer interrupted" appears when loading a page or if colours are rendered in an unacceptable manner.

Open: This feature allows the user to key URL addresses. The speed keys for this function are "Ctrl + O"

Stop: At times, loading of a page can take too long for various reasons. The user can cease the loading process by pressing the stop button.

Save: Allows the user to save the present page or frame as HTML file.

Print: Allows the user to print the current page or frame.

Create category folders for **favorites**. Add Favorites to these folders. Move a Favorite from one folder to another. Rename a Favorite folder and a Favorite. Delete a favorite.

Browser plug-ins are most often produced by third parties and extend the capability of the browser. e.g.: Acrobat Reader, Flash Player, Shock Wave, Real Player, and Quicktime.

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Tasks for Instruction and/or Assessment	Resources/Notes
IT4.1: Demonstrate use of the various browser functions. IT4.2: Research the most commonly used browsers. What is their estimated market share? IT4.3: Identify 2 common browser plug-ins. IT4.4: Manage favorites. (Create folders, add favorites, move favorites, rename favorites, delete favorites)	

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Outcomes

Students will be expected to :

IT5: distinguish between various search methods and understand the advantages and disadvantages of each

IT5l: describe and evaluate a variety of strategies for locating information in print and electronic resources, including mass media (literacy outcome)

Elaboration- Strategies for Learning and Teaching

Marshall McLuhan (1964) suggested that we are now in an age in which the intelligence of a person is no longer measured by the quality of the answers given but rather by the quality of the questions asked. This statement has become even more valid with the emergence of the Internet. For this reason alone, the concept of searching the Internet implies the skill of asking the "right" question.

Not only do Internet users need to ask the "right" question they need to know where to look to find the answers. Some search methods include:

- **Search engines**: this resource allows the user to specify the topic to be searched. Search Engines differ in their philosophy and approach of searching and students should research a given topic with at least three different search engines in order to maximize the number of useful hits. Some search engines are devoted to a particular topic such as health, business or science. e.g.: Scirus (http://www.scirus.com/srsapp/) is a search engine for scientific research.
- **Lists and Catalogues**: A number of organizations have attempted to bring order into the Internet by establishing subject trees. Yahoo (http://www.yahoo.com) is one example of a list for general purposes. Librarians Index to the Internet (http://lii.org/) is an example of an academic list.
- **Professional Directories**: Links and URLs provided on professional sites or from within trade magazines. Professional organizations also provide specialized trade information from the official web site. e.g.: Canadian Institute of Chartered Accountants (http://www.cica.ca/index.cfm?ci_ id=17150 &la_id=1)
- **Wikipedia**: (http://en.wikipedia.org/wiki/Main_Page) contains a wealth of information contributed by scholars and ordinary people with specialized knowledge on a vast array of topics. Links to references and sources are provided within the articles. (Note: Wikipedia is one of many online, interactive, referencing tools)
- **Databases**: government agencies and public organizations provide access to information stored within databases created for a particular purpose. e.g.: Environment Canada Historical Weather Database (http://www.climate. weatheroffice.ec.gc.ca/climateData/canada_e.html) or Canada411 for telephone numbers.

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Tasks for Instruction and/or Assessment	Resources/Notes
IT5.1: Provide a list of search items and identify the most suitable search method for each.	Search Worksheet Sample (Appendix K)
IT5.2: Identify two "special subject" search engines.	Internet Research Rubric (Appendix L)
IT5.3: Use an online database to find specific information. e.g.: the arrival time of the next Air Canada flight into Charlottetown Airport, the telephone number of your MLA or the postal code for a particular street address in Toronto. (1278 Bloor Street).	
IT5.4: Login into EBSCO Host and locate recent articles regarding "climate change", "energy efficient cars" or another topic of interest to the student.	
IT5.5: Identify "an expert" in a particular field of interest through online searching. Find 3 ways that this person might be contacted for information.	

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to : IT5: distinguish between various search methods and understand the advantages and disadvantages of each (continued)	• **Subscription Services:** Schools and libraries often have subscriptions to online periodicals. i.e.: EBSCO Host (http://search.ebscohost.com/Login.aspx) PEI school libraries have a subscription to this service. (August, 2008) **Username**: peiebsco **Password**: level3 (Students may access this resource from home) • **Blogs and Wikis:** individuals publish and collaborate within these online tools. Many have internal search capabilities and search engines have been developed to search blog and wiki content. Technorati (http://www.technorati.com/) is a search engine for blogs and allows the user to customize really simple syndication (RSS) from favourite authors. (Be aware that Blogs and Wikis provide individuals with the opportunity to publish material of interest to them. Some of this material may not be suitable in the school setting) • **Really Simple Syndication** (RSS) feeds. Allows content from newspapers, weather reports, podcasts, videocasts, blogs, etc. to automatically update on a RSS Reader that the user downloads and installs on his/her computer. The user is informed of new publication in an area of interest without having to explicitly search for it. A variation of the RSS feed is the "Widget" which is used on social networking sites such as My Yahoo, IGoogle, Microsoft Live or PageFlakes. The user selects a Widget icon and inserts into a personal webspace. Each time the user logs into the webspace it is automatically populated with new data that is of interest to the user. e.g.: local weather, sport scores, political news, etc. (Be aware that social networking sites may allow access to information that would not be appropriate in the school setting.) • **Ask an expert.** Contact a person who is knowledgeable in the topic you are researching. This may be done through email, chat, web conference, discussion forum or guest book entry on their home page. (Be aware of online safety when contacting individuals who are outside the school system) Examine links and terms used on web sites and results returned from search engines for clues to where source information may be located.

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Tasks for Instruction and/or Assessment	Resources/Notes

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Outcomes

Students will be expected to :

IT6: effectively use search parameters for simple and complex searches

Elaboration- Strategies for Learning and Teaching

Search Engines differ in regards to the operators which can be used in the formulation of a search. Students should use the Help page of a given search engine to obtain the permitted operators and help on how to formulate a query.

Demonstrate and apply the following parameters of queries:

Booleans: these logical operators allow complex searches and most engines will recognize: AND, OR, NOT. Others will offer additional Booleans such as ADJ, NEAR, FAR.

Natural Language queries: A number of search engines have built-in filters which permit a natural language question, such as: "what is the weather in Munich". Since this type of question corresponds most closely with the acquired way of asking questions, it is a preferable method of starting searches but it can only be applied in those search engines which permit this feature.

Required/Prohibited Operators: Most search engines allow a search to indicate which term must be in the searched page and which term must not occur in it (usually indicated with the "+" and "-" sign preceding the term).

Exact phrases: If a search contains a phrase or more than one word which should not be separated (eg. Toronto Maple Leafs) many search engines accommodate this request by allowing exact phrase operators (eg. quotation marks).

Other parameters: Case sensitivity (names of places and persons should always be capitalized), grouping of Booleans with parentheses, the use of wildcards, etc.

Search a particular site using Google:

Site: will allow searching of a term from within a particular web site. Suppose we would like to search for "schools" within the PEI government site (http://www.gov.pe.ca). Key the following in the Google search box - **site:www.gov.pe.ca schools**

Link: find who has linked to a particular website. To find who has linked to the PEI government site key the following into the Google search box - **link:www.gov.pe.ca**

These specialized commands may be used to locate "related information" from within a large website or to locate organizations with similar topic interests.

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Tasks for Instruction and/or Assessment

IT6.1: Design "Internet Hunts" which are specific questions to which the student must find the answer on the Internet. For example, You wish to phone a friend in Hong Kong. It is now four p.m. What time will it be in Hong Kong? These exercises should be tried before they are given to the students since it is possible that an answer is not readily available.

IT6.2: Research a topic and print a list of sites which yield good information for this topic. The sites may be listed with the URL and an explanation of what the visitor to this site will find.

IT6.3: The above exercise can be changed into a favorite assignment, in which students have to bookmark these sites and organize the favorites into appropriate folders.

IT6.4: Provide questions which necessitate Boolean operators, such as: find information about active volcanoes except for those in Iceland.

IT6.5: Identify the nature of hits for given queries. For example, what will be returned if the query is: "active AND volcanoes" as compared to "active volcanoes" or "active ADJ volcanoes" (the first will return pages which contain both the words "active" and "volcanoes" but not necessarily adjacent to each other. The latter two queries will return only those pages which contain the words "active" and "volcanoes" adjacent to each other).

Resources/Notes

Speciality Search Engines of interest:

Google Scholar http://scholar.google.ca/

Kartoo Visual Search http://www.kartoo.com/

Scirus Science http://www.scirus.com/srsapp/

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	

Outcomes

Students will be expected to :

IT7: transfer text from an Internet site to a word processor

IT8: transfer graphics material from an Internet site to the word processor

Elaboration- Strategies for Learning and Teaching

The process of transferring text from the Internet into a word processor involves these steps:

- select the text to be transferred
- use either the Edit menu or a short cut (Ctrl + c) to copy the text to the clipboard (computer memory)
- switch to the word processor (Alt + Tab) if the program is open
- use either the Edit menu of the word processor or a short cut (Ctrl + v) to paste the text into the word processor's document. It is important to point out that when a passage has been copied that the source of the text must be identified. In most cases, it will suffice if they use the identical process but the transferred text is the URL of the site from which the text has been copied. Transfer of text and graphics provide a good opportunity to discuss copyright issues.

Note: sometimes code from the web site may be included with the text that is copied and pasted. To prevent these codes from becoming embedded in the word processing document, paste the material into Notepad.   Reselect the material and paste it into the word processor. This extra step "strips" away any HTML coding.

Transfer graphics material as follows:

- Right-click on the image.
- Select from the menu: Save image as...
- Save the image to disk and remember its location and name.
- In the word processor click on Insert and then on Graphics–File. Indicate the correct path and filename.

Alternatively, images may be selected, copied and pasted directly into the word processor.

Browsers can display only graphics in .gif, .jpg, and .png formats. Conversion into specialized formats may be accomplished with a graphics program such as Paintshop Pro or Fireworks. Each of these formats has its advantages and disadvantages. For example, photos are best rendered in .jpg format, whereas .gif files are usually used for graphics with clearly separated colours. Gif files employ a non-loss compression whereas .jpg files use a compression scheme that involves some loss. Consequently, .gif files can be saved repeatedly without loss of detail, which is not true for .jpeg files. The .png file format will eventually replace the .gif format as it has improvements in compression and offers more display features.

operate and manage technological systems

Tasks for Instruction and/or Assessment	Resources/Notes
IT7.1: Practice transfering text in order to develop an efficient method of transfer. This becomes particularly important when non-contiguous text needs to be transferred. Make certain that students identify the source of the text by transferring the URL of the site in question.	
IT8.1: Save Internet graphics from educationally friendly sites and transfer these graphics into a word processing document.	Educationally friendly graphic sites:
	Pics4Learning http://pics. tech4learning.com/
IT8.2: Convert a file from one graphic type to another. e.g.: convert a .jpg to .tiff or .wmf extension	Images Canada http://www. imagescanada.ca/r1-300-e.html
IT8.3: Research further information on the .png format. List advantages of using this file format to create graphics for web sites.	Discovery Education http:// school.discoveryeducation.com/ clipart/
	Classroom Clipart http:// classroomclipart.com/
	National Geographic http:// photography.nationalgeographic. com/photography
	Public Domain Photo Library http://web.centre.edu/enviro/ Photos_files/Photos.htm

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	

Outcomes

Students will be expected to :

IT9: reference electronic information properly

IT9l: integrate chosen information into a new text and, where necessary, give appropriate credit to sources used (literacy outcome)

Elaboration- Strategies for Learning and Teaching

The OWL at Purdue http://owl.english.purdue.edu/owl/resource/557/01/ contains a section entitled "Research and Citation" that provides information regarding Modern Language Association (MLA), American Psychological Association (APA), Chicago and American Sociological Association (ASA) styles for citing sources.   The purpose of using a particular style is for consistency for citing material within a publication or among writers in a particular discipline.

Several Prince Edward Island high schools have prepared student guides "Directions for Preparing Formal Research Papers" and have made these directions available in the school student handbook or from the school website. e.g.: http://www.edu.pe.ca//Westisle/departments/englishdepartment/workscited.pdf Note that the Modern Language Association (MLA) style has been adopted using in-text citation and a works cited page.

Citation guidelines are continually being refined and there are slight variations from organization to organization. Remind students that when writing a research paper following high school graduation that it will be prudent to ask the instructor which format s/he requires and to follow any special instructions provided. While performing research it is important that students recognize the information that will be required for properly citing the source and that it be recorded for future use.   Should electronic resources be used the citation information is often summarized and provided by search tools. Demonstrate copy and pasting of citation material to a word processor as part of the note-taking phase of research.

Google Scholar (http://scholar.google.ca) select "Scholar Preferences" and check "Show links to import citations into BibTex" under Bibliography Manager.

Bibliography Manager   ○ Don't show any citation import links.

                                            ● Show links to import citations into BibTeX ▾
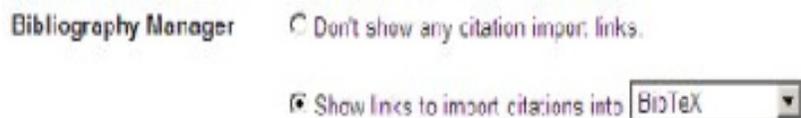
BibTex information provided for a Google Scholar search on "human cloning" provides the following information. Copy and Paste this into a word processor as part of research notetaking.

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Tasks for Instruction and/or Assessment

IT9.1: Locate a resource from each of the following sources. Cite the resource using MLA style. Copy and paste into a word processing document as a Works Cited page. Check your answers using an online citation tool.

• book (online)
• newspaper article (online)
• Internet website (online)
• journal article (online)

IT9.2: Use an online Citation tool to format a reference in APA sytle. Identify differences in the two styles.

IT9.3: Locate the school's "Guide for Preparing Formal Papers". Review directions for preparing a "Works Cited" page and for "In Text" referencing. Be consistent between this guide and formatting of assignments.

Resources/Notes

Online citation tools:

• The OWL at Purdue, Works Cited: Electronic Resources, http://owl.english.purdue.edu/owl/resource/557/09/

• Landmark Citation Machine http://citationmachine.net

• Noodle Bib (MLA, APA styles) http://www.noodletools.com/login.php

• 21 Century Information Fluency Project http://21cif.imsa.edu/tools/cite/mla/index.html

• Knight Cite http://www.calvin.edu/library/knightcite/index.php

• Oregon Public Education Network http://www.openc.k12.or.us/citeintro/citeintro.php?Grd=Sec

Modern Language Association (MLA) Style: http://www.mla.org/style

American Psychological Association (APA) Style http://apastyle.apa.org/

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to : IT9: reference electronic information properly (continued)	*@article(jaenisch2004hcs,* *title={{Human Cloning--The Science and Ethics of Nuclear Transplantation}},* *author={Jaenisch, R.},* *journal={New England Journal of Medicine},* *volume={351},* *number={27},* *pages={2787},* *year={2004},* *publisher={Mass Med Soc},* *}* EBSCO Host (http://search.ebscohost.com) periodical database also provides citation information in the search results that can be copied and pasted into a word processor as part of notetaking.

Page: 1 **2** **3** **4** **5** **Next**   Sort by: Date

1. **The future of food** By: Stuart Laidlaw. Toronto Star (Canada), 07/05/2008; (AN 6FP1136031889)
   📄 **HTML Full Text**

2. **Heroic hound earns a clone** Daily Telegraph, The (Sydney), 07/03/2008; (AN 2008070310284070247)
   📄 **HTML Full Text**

As the paper is written the "Works Cited" page is completed and citations formatted in MLA style. Refer students to the schools' guide for preparing formal research papers or to online citation tools.

For example, Son of Citation Machine (http://citationmachine.net) provides the following results for "The future of food" article, from above.

Copy the citation below and paste it into your document.

Laidlaw, Stuart. "The future of food." Toronto Star July 7 2008: Ideas 01.

Citing a web site: Author (if known), Name of Site. Name of institution/organization affiliated with the site. Date of Posting/Revision. Date you accessed the site [electronic address].

Example:

Magid, Larry. "Safety Myths and Web 2.0" SafeTeens.com 2008. 27 July 2008. (http://www.safeteens.com/2008/03/20/safety-myths-and-web-20/)

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Tasks for Instruction and/or Assessment	Resources/Notes

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Word Processing

Software: Corel 12 WordPerfect or MS Word 2007
Recommended Time Allocation: 30% (24 periods*)

* Combined with Desktop Publishing

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
WP1: identify basic terminology of word processing	Word processing terminology: • word wrap • WYSIWYG • insertion point/cursor • shadow cursor • insert/edit mode • special function keys • document • hard copy
WP2: identify components of the word processing screen	Acquaint students with WordPerfect screen features (Century 21 transparencies): • title bar • menu bar • tool bar • property bar • scroll bar • editing screen • reveal codes • margins • shadow lines • maximize button • minimize button • restore button • close button

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Tasks for Instruction and/or Assessment	Resources/Notes

WP1.1: Use terminology correctly.

WP1.2: Encourage the use of the help menu.

WP1.3: Demonstrate use of special keys. (Arrow keys, home, end, page up, page down, insert, delete, cap lock)

WP2.1: Use the print screen to obtain an image of the word processing screen. Identify all of its components.

WP2.2: Create a matching exercise for the word processing screen and its components using white board software.

Century 21 Keyboarding & Information Processing

Century 21 Keyboarding & Information Processing Teacher's Manual

Century 21 transparencies

MicroType MultiMedia Software

ITC401 ATutor Teachers Workspace, http://www.edu.pe.ca/journeyon/pro_d_pages/atutor1.htm

ITC401 Word Processing Lab Manual, 2008.

Corel Word Perfect 12 or Microsoft Word 2007 software

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
WP3: edit and revise documents	Demonstrate the ability to: • insert and delete text • use typeover to replace text • select block of text • use delete, undo, and back space • use cut, copy, paste, and drag and drop to edit text • open a new blank document • insert symbols and special characters into your text • use spell check to correct misspelled or mistyped words • use find and replace function • use the thesaurus • fast cursor movements Work with the codes that control the formatting of the document (Reveal Codes in Word Perfect; Paragraph formatting in Word).
WP3l: revise writing to improve clarity and style, use peer and teacher response and technologies such as word processing programs to manipulate text (literacy outcome)	Electronic tools aid in organization and revision of texts. Studies have shown that students are more open to revising work that has been formatted and stored electronically. Demonstrate the ability to: • adjust line spacing in a document • use justification (left, centre, right, full) • adjust the margins • adjust tabs using ruler bar • use indent, hanging indent, and double indent to format paragraphs • format documents using outlines, bullets, and numbering • edit and change the appearance of text • use bold, italics, underline, superscript, subscript, shadow, etc, to enhance text in their document • change font and font size • identify major font families

WP4: format text	• Serif
	    • Sans serif
	    • Script
	    • Wingdings
	
	 • identify font size measures

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Tasks for Instruction and/or Assessment	Resources/Notes

Tasks for Instruction and/or Assessment

WP3.1:   Demonstrate how to:

- cut and paste words, sentences, and paragraphs
- use spell check
- proofread materials
- use Find and Replace in documents

WP3.2:   Key a short paragraph of French inserting special characters.

WP3.3:   Enhance a document and/or decorate a display using special symbols (wingdings) and iconic symbols.

WP4.1:   Create a document. Change the appearance of the text by using the formatting features.

Select the appropriate font for the following documents:

- wedding invitation
- sale sign
- letter of application
- resume
- scientific report

Resources/Notes

Common proofreading symbols (Appendix I)

http://webster.commnet.edu/ writing/symbols.htm (2008)

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
WP5: format a page	Demonstrate the ability to:
	• format multi-page documents with headers and footers
	• use page numbering to identify pages
	• use suppress to prevent headers, footers, and page numbering from appearing on certain pages
	• use soft and hard page breaks.
	• control the end of pages with the keep text together function
	• format documents with footnotes and endnotes
	• center the text on the page vertically
	• use make it fit function to fit text on desired number of pages
	• use divide page to make several logical pages fit on one piece of paper
	• change the orientation of type on a page
WP6: format a document	Challenge students to:
	• outline a document
	• create a table of contents
	• use print preview and print a document
	• identify and use print features
	• choose a range for printing
	• apply format to current page
	• choose multiple printing
	• apply reverse printing
WP7: create and edit a table	Explain and discuss table terminology:
	• cell, split cell, join cells
	• row
	• column
	• header rows
	Challenge students to:
	• format the table
	• boarder fill
	• remove lines
	• skew a table
	• adjust column widths and heights
	Note: the tab key within tables advances the cursor to the next cell. If you need to indent use the F7 key, never the space bar.

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Tasks for Instruction and/or Assessment	Resources/Notes

WP5.1: Key a short report from copy.

WP5.2: Key and format a formal paper for a subject area. (Be sure to follow the style guide for preparing formal papers that has been adopted by the school)

WP6.1: Create and format a document.

- card
- announcement for special school event
- table of contents
- outline

WP7.1: Create a table and format the contents.

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
WP8: create and edit data files and forms to perform a merge	Explain terminology and applications of merging.
	Demonstrate the ability to:
	• prepare and edit data files
	• prepare and edit form files
	• merge data files with form documents

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Tasks for Instruction and/or Assessment	Resources/Notes
WP8.1: Create a form document and merge with variables from a data file: • role in school play • birthday invitation • business letter • address label • collection notice	

Desktop Publishing

Software: Corel 12 WordPerfect or MS Word 2007
Recommended Time Allocation: (combined with WP*)

* 30% (24 classes) to meet outcomes in DP & WP

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
DP1: identify the differences between desktop publishing and word processing	Discuss how the combined use of special formats, text, images, colour and other attributes make desktop publishing a more complex process than Word processing. This complexity requires preplanning and adherence to basic design principles to be effective in communicating the desired message to a specific audience.
DP2: identify common uses of desktop publishing	Inspect sample desktop publishing documents. This would be a good time to encourage questions about the various processes involved and for the student to provide his/her overall impression of each item.

• business card
• advertisement
• brochure / pamphlet / newsletter
• display poster
• product packaging
• manual / guides

DP3: explain the basic principles of "good design" as applicable to desktop publishing

Good design is the foundation of desktop publishing. Robin Williams has reduced page design to the four principles of contrast, repetition, alignment and proximity. Relate the use of fonts, images, white space, borders and colour to these principles. The Rule of Thirds governing balanced and pleasing composition should be presented and desktop publishing "avoids" discussed. Provide the opportunity to evaluate materials presented in DP2 for good composition, appropriate images, suitable fonts and the use of white space, borders and colours in conveying the message. Adherence to rules helps the author compose effective desktop publishing products.

Suggestions for incorporating fonts in design:

• using only one typeface makes a page dull; using typefaces from the same family cause "conflict" and are not appealing
• using different and distinct typefaces (contrast) grabs the readers attention and makes the design more interesting
• use no more than 3 typefaces on a page (heading, subheading and body copy)
• use serif typefaces for formal or more serious messages
• use script typefaces for festive, light messages
• avoid underlining words or using bold in body copy
• avoid using all-capitals, especially with script typefaces

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Tasks for Instruction and/or Assessment	Resources/Notes
DP1.1: Research differences between desktop publishing and word processing. Report findings. DP1.2: Create a definition for "word processing" and "desktop publishing". DP2.1: Create a chart identifying sample desktop publishing documents in column one. In additional columns identify features of the samples that make them "desktop publishing" rather than "word processing" products. DP3.1: Identify effective use of contrast, repetition, alignment or proximity in desktop publishing documents. Use the samples from DP2.1 or locate others from magazines or the Internet. DP3.2: Incorporate the use of design principles and font selection into assignments. Peer assess. DP3.3: Create a portrait and landscape planning paper layout for the same message. Compare the two efforts noting differences in the use of contrast, alignment, repetition and proximity. Produce a statement describing the reasons for the preferred design.	ITC401 ATutor Teachers Workspace http://www.edu.pe.ca/journeyon/pro_d_pages/atutor1.htm ITC401 Word Processing Lab Manual, 2008 Typography http://www.typography-1st.com/typo/txt-lay.htm Wikipedia http://en.wikipedia.org/wiki/Desktop_publishing Warren Kramer, Designs http://www.warrenkramer.com/portfolio.php Classic Print Advertisements http://www.adflip.com/ Corel WordPerfect 12 or Microsoft Office 2007 Word software C.A.R.P Design http://edweb.sdsu.edu/Courses/EDTEC470/graphics/carp/ Williams, Robin. The Non-Designer's Design Book. Second. Berkeley: Peachpit Press, 2004. (1 per school - see multimedia teacher)

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Outcomes Students will be expected to :	Elaboration- Strategies for Learning and Teaching
DP4: manipulate various types of images within a desktop publishing document	Clip art graphics and imported images may be manipulated within word processing/desktop publishing programs. Common image tools are edit, rotate, skew, crop, resize, brightness, contrast, bring to front, send to back, add border, and wrap text. Specialized image tools specific to particular programs may include preset picture shapes and effects such as buttons, shadows, reflections, transparency, blur, 3D, glow, soft edges, recolour and bevel. Advantages of using image tools within the publishing program are that the tools are easy to use, offer common image manipulation options with presets, and changes are nondestructive. This means that the original graphic is maintained as changes are applied. Simply select another option from within the tool to alter the appearance of the image.
DP5: create graphics in a graphics program	Creation of customized images or graphics with a combination of special effects will require the use of graphic programs such as Fireworks or Paintshop Pro. Graphic programs are also used to convert graphics from one format to another should the desktop publishing program not support the importing of a particular file format.
DP6: insert text files into a desktop publishing layout	Desktop publishing text is often created and edited in unformatted Word processing text files. These are inserted into the desktop publishing document where formatting is applied. Text files in a variety of formats may be "opened" or "imported" into the desktop publishing document. Text may be "copied and pasted" or "placed" directly. An advanced feature found in desktop publishing programs is the ability to link one column or text box to the next allowing text to automatically "flow" from one to the other(s) depending on the quantity of text to be placed.

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Tasks for Instruction and/or Assessment	Resources/Notes
DP4.1: Demonstrate use of the image editing tools found within the software used for desktop publishing. • rotate • skew • wrap text • add border • bring to front / send to back • contrast, brightness • shadow • add text	
DP5.1: Create an original graphic to include in an assignment. e.g.: a No Smoking symbol for use in an assignment or text in a font that not available in the desktop publishing software. **DP5.2:** Demonstrate converting an image from one format to another. e.g.: a .tif image to .gif, .jpg or .png	Paint Shop Pro Tutorial http://www.edu.pe.ca/journeyon/pro_d_pages/using_psp/index.htm
DP6.1: Email unformatted text files to be saved in the LAN network G: directory. Import or copy and paste text to prepare a document as required. Create appropriate sub-headings for the imported files. **DP6.2:** Provide a file in a format such as rich text format (.rtf). Open or import this file to use in a desktop publishing document.	

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
DP7: create various style layouts in both portrait and landscape orientations using tables, borders/fill, text boxes, watermarks, vertical/horizontal lines and columns, subdividing pages	The importance of planning and suitability of orientation and attributes to the successful delivery of a message should be stressed. Refer to DP3 and reinforce that simple design using few features within a single page is often the most effective. The JOIN function in tables should be demonstrated to provide the students with page design options. The attributes of the graphic text box feature should be explored and the use of this feature encouraged in desktop publishing activities.
DP7l: integrate other ways of representing to enhance writing (literacy outcome)	Engage students in preparing original text and design for a variety of documents and purposes.
DP8: use and edit templates	Open, edit and save customized templates. Point out that templates are usually tables and that these can be easily seen by turning on the View-Table Gridlines while in a template. Templates are provided with software and new specimens are often available from vendor and third party web sites. Colour, Font styles, and graphics may be altered from the provided layout template. Care should be taken when changing suggested formatting in templates as they are most often professionally designed. Visit online sites to examine colour or font charts when contemplating changes.
	Note that the file extension of a template is different than that of a data file. Save the data file with a different file name than that used by the template.

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Tasks for Instruction and/or Assessment	Resources/Notes
DP7.1: Add a watermark to a display or announcement.	
DP7.2: Create a page layout using a table. (hide table and cell lines)	
DP7.3: Separate elements of a page using horizontal or vertical lines.	
DP7.4: Arrange text and graphics in a columnar display.	
DP7.5: Format text within a text box.	
DP7.6: Use borders/fill to add emphasis or to separate elements on a page.	
	Colour Scheme Selection http://wellstyled.com/tools/ colorscheme2/index-en.html
DP8.1: Prepare a document using a template. • resume • letter • brochure • flyer • newsletter • greeting card • business card • memo DP8.2: Edit a template.	

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
DP9: critically analyze desktop publishing documents	A publication may be subject to critical analysis in the use of:

A publication may be subject to critical analysis in the use of:

- design principles
- appropriate graphics
- appropriate file formats
- font type/size/colour
- appropriate background
- space
- correct grammar
- effective communication

Awareness of audience and adherence to "appropriateness" in such areas as multiculturalism, gender neutrality, language and content. (eg. slang phrases and terminology, offensive content, sexism or racism)

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Tasks for Instruction and/or Assessment	Resources/Notes
DP9.1: Analyze desktop publishing documents and recommend changes which would make each more effective.	Desktop Publishing Rubric (Appendix N)
DP9.2: Create a rubric or checklist for assessing the quality, design and effectiveness of a desktop publishing document.	
DP9.3: Perform a self and/or peer evaluation of works created using a rubric.	
DP9.4: Select works for inclusion in a personal, cross curricular, learning portfolio. Provide reflection upon reasons for choosing particular selections.	

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Spreadsheet and Graphing

Software: Corel 12 Quattro Pro or MS Excel 2007
Recommended Time Allocation: 12.5% (10 periods)

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	

SS1: describe uses, applications, and advantages of spreadsheets

Identify uses of spreadsheets at home and in business. Recognize that graphing is a powerful feature that allows the relationships in data to be visually displayed.

Applications of spreadsheets may include:

- accounting, recording and summarizing financial data
- school, record and summarize marks
- sports, record and calculate player and team statistics
- home, prepare a household budget; food, clothing, heat, etc.
- home, record relatives addresses, birthdays, telephone numbers
- home, tracking banking and investment information

Advantages of spreadsheets may include:

- instant recalculation with formulas and pre-defined functions
- graph data to show relationship
- easily change data and protect regions of the spreadsheet
- accurate results once structure has been tested
- create professional looking reports, format text, etc.
- format dates, currency, per cents and decimal places
- sort data in the spreadsheet
- perform forecasting and "What if" modelling. e.g.: What would be expected profit for a school dance if attendance is poor, as expected, or fantastic? Helps evaluate the risk of holding event.

SS2: demonstrate the ability to use spreadsheets in order to analyze data and edit or format the cell entries and spreadsheet

Create spreadsheets and competently handle procedures which include: entering and editing data (labels and values), changing column widths, inserting and deleting (cells, rows, and columns), changing format options (numbers, alignment, character styles, and borders), freezing titles, and sorting ranges of data.

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Tasks for Instruction and/or Assessment

SS1.1: Demonstrate features of spreadsheets that make them so useful.

SS1.2: Identify five occupations in which spreadsheets are used.

SS1.2: Describe how spreadsheets are more effective than using pen and paper to record data and solve problems.

SS1.3: Research the names of four common spreadsheet programs.

SS2.1: Explain how sorting is executed in a spreadsheet (primary, secondary, and tertiary; ascending and descending).
Identify what problems can occur if sorting is not done on the correct block of data.

SS2.2: Sort the data in multiple columns of a spreadsheet.

SS2.3: Format a problem with formatting guidelines specified.

Resources/Notes

ATutor ITC 401 Teacher Resource Workspace http://www.edu.pe.ca/journeyon/pro_d_pages/atutor1.htm

ITC401 Quattro Pro 12 Spreadsheet Lab Manual (electronic)

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
SS3: understand and apply formulas and functions	The difference between formulas and functions should be understood, as well as the syntax with which to create a formula and evoke a function. Spreadsheets have been referred to as "number crunchers" partially because the formulas and functions are easily copied and applied to specific cells rather than having to create a formula or function for each cell under consideration.
SS3n: solve problems using correct order of operations and parenthesis (numeracy outcome)	Formulas and functions must be constructed following the algebraic rules of order of operation. Recognize instances where parenthesis are required in order to obtain correct results.
SS4: explain the difference between and apply relative and absolute addressing	Since formulas and functions are easily copied from one range to another, the student should be aware that, by default, they are copied with relative addressing. If a particular cell should be referenced regardless of position, absolute addressing will be required. For this purpose, students should be able to apply the correct syntax to render a formula absolute, mixed or relative.
SS5: identify various error sources and use debugging techniques to correct them	Be aware of the following error types, circular errors (eg. the cell containing the formula is referencing itself in the formula), run-time errors (eg. division by zero) and logical errors (e.g.: wrong or faulty formula). One way of addressing, particularly the last type of error, is to use a section of the spreadsheet and replicate the formula with simple values whose outcome can easily be verified.
	Check calculations in new spreadsheet structures with a calculator and insert "error checking" routines in the spreadsheet as it is being constructed. After the spreadsheet has been tested and its accuracy verified, these checking formula may be deleted. An often overlooked error checking technique is to look at the results and ask "Is the answer reasonable?"
SS5n: examine the results of numeric calculations for reasonableness (numeracy outcome)	Check results of calculations for accuracy and reasonableness. This involves understanding the problem and anticipating a general result.

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Tasks for Instruction and/or Assessment	Resources/Notes

SS3.1: Complete lab manual tutorials regarding creating and editing formulas and functions.

SS3.2n: Solve a variety of problems such as those involving time and motion, wage computation, household budgets, subject averages, sales information, and computing and sorting sports statistics.

SS4.1: Explain the difference between relative and absolute addressing. Give examples of problems which would involve each type.

SS4.2: Demonstrate the use of relative and absolute addressing in a spreadsheet.

SS5.1: Provide segments of spreadsheets containing one or more errors. Ask students to locate and correct any errors.

SS5.2: Build error checking routines into all spreadsheet applications to test formulas and verify results.

SS5.3: Peer review/error check spreadsheets created by classmates.

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
SS6: create graphs and charts to illustrate patterns and trends; and incorporate into other applications	Identify different types of graphs and the situations in which each type might be used. The various graph types are employed to convey a specific message and using the wrong type may lead to ambiguity. For example, line graphs are often used to show a trend over a given period of time, bar graphs are used for comparisons between two or more entities over a period of time and pie graphs are used to indicate the size of the parts in relation to the total.
	Change the graph components (titles, scaling, and formatting features) as well as understand the importance of and difference between labels and legends.
	Copy and paste or export and save completed graphs to be used in a word processor.
SS6n: organize data in tables and charts (numeracy outcome)	Includes collecting data, selecting the best chart type to show relationships and identifying characteristics of charts designed to mislead the reader.
SS7: print data and graphs	Demonstrate how to fit data on a printer page, set page breaks, insert headers and footers, preview printed material, and change print-out options within the spreadsheet application.
	Alternatively, data and graphs may be incorporated into a word processing document and printed.

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Tasks for Instruction and/or Assessment	Resources/Notes
SS6.1: Identify the types of graphs available and provide an example of a situation in which each would be used. SS6.2: Use data from previously completed spreadsheets to create graphs which illustrate problem solutions or patterns and trends. SS6.3: Incorporate a completed graph into a word processor and provide an explanation of the pattern or trend. SS7.1: Print data and graphs for assessment or for inclusion in an electronic learning portfolio. (Alternatively, these may be exported to .pdf format and submitted electronically)	

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Visual Presentations

**Software: Corel 12 Presentations or MS PowerPoint 2007
Recommended Time Allocation: 10% (8 periods)**

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
VP1: state and demonstrate basic principles of effective visual communication	Select portrait or landscape format appropriate to the type of presentation being created; understand the rule of thirds in the placement of text and graphics; focus on simplicity, understand that text and graphics must compliment each other and not conflict if the message is to be communicated effectively and grasp the concept of presentation continuity by maintaining common backgrounds, colours and fonts.
VP1l: use persuasive techniques to convey a message (literacy outcome)	Use techniques to persuade an audience. Become knowledgeable of techniques used by others in an attempt to influence. Assess if a position is supported by evidence.
VP2: demonstrate the use of layered visuals in the creation of a presentation	Examine the layered aspect of visual presentation programs in order to develop creative design skills. Altering attributes on a layer does not affect those on the other(s). This understanding is vital to successful visual presentation creation. Introduce the features and controls of the program including: templates, master gallery for backgrounds election, image tools for graphic manipulation and enhancement, outliner for the preparation of the frames, layout and background editing attributes together with slide views such as sorter, transitions and play.

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Tasks for Instruction and/or Assessment

VP1.1: Use the Internet to research the principles of good design and view a number of slides/photos/advertisements in an effort to determine what factors should be addressed when planning an effective visual presentation.

VP1.2: Discuss and identify various types of messages and how each may require a different style of presentation in order to be effective.

VP1.3: Design a single slide on a sheet of letter size paper. It should show the placement of the text and graphic(s) to be used to convey the message. Design possibilities including font style and background selection should then be considered in the effort to achieve effective communication. The concepts of balance and use of white space might also be addressed at this time.

VP1.4: Select or modify a template to suit the communication of the message.

VP2.1: Demonstrate the concept of layering with a blackline master, overhead transparencies and markers. Add a caption or title, and colour sections of the image on separate overhead transparency layers. The independence and flexibility of layering should become evident.

VP2.2: Create slides with layered visuals.

Resources/Notes

ITC 401 ATutor Teacher Workspace http://www.edu.pe.ca/journeyon/pro_d_pages/atutor1.htm

ITC401 Visual Presentation 12 Lab Manual, 2008 (Electronic)

Corel Presentations 12 or Microsoft Office 2007

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
VP3: create a drawing using the drawing tools	Graphics may be created in specialized graphics programs and imported into a visual presentation. However, powerful, easy to use, imaging tools are incorporated into many visual presentation software. The first step in the creation of a drawing is the identification and selection of appropriate drawing tools. The attribute(s) of each tool should be demonstrated. Attention should also focus on the use of mouse actions i.e. left click, right click, click and drag in the drawing process.
VP4: plan, design, and assemble a project	Pre-plan a multi-frame presentation. The numerous text and graphic objects, even in a small presentation, should be identified and labelled. Simple paper layouts with the objects placed should be created. Transform the paper plans into a multi-frame slide show. Focus on the sequencing of the message and the quality of each slide's lay out. Final ordering, transition attributes and other enhancements should be added later
VP5: create and deliver a multi-frame slide show presentation	Complete the slideshow and include enhancements. Discuss verbal and nonverbal presentation considerations (pace, voice quality, poise, distracting mannerisms, dress, facing audience and ability to answer questions, etc.). Present the slideshow to an audience. In the interests of time, the audience may consist of a pair who present to each other.
VP5l: create presentations in forms that are appropriate to a variety of subjects, audiences, and purposes, including informing, persuading, and entertaining (literacy outcome)	Encourage students to enhance skills using and delivering visual presentations in a variety of subject areas. Practice engaging the audience with humor and multimedia content. Encourage discussion and questions from the audience and practice being at ease during the presentation.

design, develop, evaluate, and articulate technological solutions

Tasks for Instruction and/or Assessment	Resources/Notes
VP3.1: Create an original visual object using the drawing tools of the visual presentation software. Save the object and import it into a slide show window.	
VP3.2: Re-create the drawing exercise found within the visual presentation lab manual.	
VP4.1: Select a subject for a slide show, divide the total message into logical components and draft the frames on paper. The paper designs should be marked up as to backgrounds, graphic names, font sizes, etc. (A research topic from the computer literacy section of this guide will provide a good selection of subjects for a presentation)	
VP5.1: Prepare a rubric for organization, design and animated features of a slideshow.	
VP5.2: Research effective verbal and nonverbal presentation tips. Prepare a rubric for presentation of the slide show.	
VP5.3: Use a rubric to prepare a self-assessment of the slideshow and presentation.	
VP5.4: Use a rubric to prepare a peer-assessment of the slideshow and presentation.	

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Outcomes	Elaboration- Strategies for Learning and Teaching
Students will be expected to :	
VP6: use effective audio and visual enhancements to the presentation project	Adding audio to slide presentations can result in a highly effective presentation if correctly done. The opposite is also true. Contemplate both the type and style of music and its placement within the presentation. All elements within the presentation must support the message - not distract from it. The greater the level of complexity within the presentation the greater chance of creating an ineffective production. The importance of planning cannot be overstated.
VP6l: use a variety of forms of oral, print, media and other ways of representing to convey ideas (literacy outcome)	Position statements of the International Reading Association and National Council of Teachers of English state that the definition and nature of literacy has changed. To become fully literate in today's world, students must become proficient in using the new literacies of Communication and Information Technology (CIT). Teachers must become knowledgeable in the use of these technologies and provide opportunities for students to engage with them.
VP7: package the presentation files for distribution	The runtime version (Corel Presentations) is a portable copy of the presentation that will execute independently of the presentation software. Powerpoint packages files (along with an independent viewer) to a folder where a CD or DVD may be created or the folder transferred to a thumb drive. Other options for distributing the content of a slideshow include publishing to webpage format (Corel), .pdf (both), publishing to a server (Powerpoint) and publishing as a Word document (Powerpoint). Powerpoint allows the user to save the slideshow in .ppt format which allows editing or in show format .pps which immediately opens in the view for the audience.
	Before a slide show is distributed make sure that it is the final copy and is error free. Emphasize quality checks and a final check on the functionality of the distributed version is also recommended.

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Tasks for Instruction and/or Assessment	Resources/Notes
VP6.1: Incorporate audio (.wav, .mid, .wma, .mp3), video (.mpg, .wmv, .mov, .asf, .aui), photographs (.jpg, .png, .bmp, .wmf, .emf, .eps), smart art, charts or animated transitions into the slideshow. (Obey copyright legislation. Obtain content from educationally friendly sites, obtain permission, or create original content)	
VP7.1: Create a runtime file (Corel) or Package for CD (Powerpoint) version of the final slide show. Test to make sure the program functions as intended.	
VP7.2: Publish the slide show to .pdf	
VP7.3: Publish the slide show as a shockwave file (.swf) for use on a website. (Corel Presentations)	

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Outcomes

Students will be expected to :

VP8: conduct a critical analysis of a visual or multimedia presentation

Elaboration- Strategies for Learning and Teaching

The critical analysis of a presentation would include basic principles for effective visual communication (VP1), planning and design (VP4), delivery (VP5) and effective use of audio and visuals (VP6). These aspects would be at the introductory level or to the depth taught by individual instructors.

A presentation may be subject to critical analysis in the use of:

- design principles
- selection of appropriate graphics
- creation or selection of template (font type/size/colour/background)
- space utilization
- use of audio, visuals and slide animations
- correct grammar usage
- effective communication
- Awareness of audience and adherence to "appropriateness" in such areas as multiculturalism, gender neutrality, language and content. (eg. slang phrases and terminology, offensive content, sexism or racism)

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Tasks for Instruction and/or Assessment	Resources/Notes
DP8.1: Analyze visual presentations and recommend changes which would make each more effective.	Presentation Rubric (Appendix M)
DP8.2: Create a rubric or checklist for assessing the quality, design and effectiveness of a visual presentation	
DP8.3: Perform a self and/or peer evaluation of works created using a rubric.	
DP8.4: Incorporate recommendations for improvement in the visual presentation. Integrate the presentation in a personal, cross curricular, learning portfolio. Provide reflection upon the more effective components of the visual presentation.	

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Locally Determined Time

Skill Development, Research, Independent Studies
Recommended Time Allocation: 5% (4 periods)

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Outcomes	**Elaboration- Strategies for Learning and Teaching**
Students will be expected to :	

The outcomes in ITC 401 are met in an integrated approach rather than in separate blocks. This allows students to engage in skill development within the context of applying this skill within specific applications.

Locally determined time allows for the individualization of the ITC 401 program to meet the interests and needs of the learner. This time may be used to extend learning in one or more of the following outcome areas:

Skill Development:

KB8: demonstrate increasingly rapid, accurate touch keystroking

KB9: demonstrate text entry at the rate of 35 words per minute or better on a 3-minute timing (1 error per minute)

Research:

CL7: explain computer ethics as it applies to copyright law, privacy issues, computer crime, and social interaction

CL9: recognize that career opportunities, personal technical skills, and educational programs are affected by changes in technology

IT1: define the Internet from a technical perspective

IT2: describe the implications, uses, and applications of the Internet

Independent Projects:

WP6: format a document

DP7: create various style layouts in both portrait and landscape orientations using tables, borders/fill, text boxes, watermarks, vertical/horizontal lines and columns, subdividing pages

VP5: create and deliver a multi-frame slide show presentation

SS2: demonstrate the ability to use spreadsheets in order to analyze given data and edit and format the cell entries and spreadsheet

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Tasks for Instruction and/or Assessment	Resources/Notes
KB8 &KB9: • Work towards obtaining a class certificate which documents keyboarding proficiency. (Post on class recognition board or include in personal portfolio) CL7, CL9, IT1 & IT2 • Research and report on an area of personal interest. WP6, DP7, VP5 & SS2 • Create a word processing, desktop publishing, spreadsheet or visual presentation in a personal area of interest.	

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Appendix

The Ergonomic Workstation

Ceiling Lights
-filters to disperse light
-locate to side of monitor

Environment
-reduce noise
-flat paint on walls (non-glare)

Task Light

Document Holder
-moveable/adjustable

Window(s)
-blinds reduce
glare to side of monitor

Computer Monitor
-adjustable position
-adjust brightness & contrast

Keyboard
-thin, detached & moveable

Foot Rest

Arm Rest

Wrist Rest

Chair
-swivel
-stable base
-adjustable seat
-adjustable back seat
-cloth fabric on seat
-arm rest
-contoured front edge of seat

Work Station
-adjustable desk height
-adjustable keyboard height

Workstation

1. Eye to screen distance 40-60cm.

2. Line of sight to screen 10-20 degrees below the horizontal (1).

3. The keyboard should be tilted towards the user 0 to 25 degrees.

4. Adjust keyboard height and distance from user so that the upper arms hang straight down from shoulders.

5. The chair must provide firm lumbar (lower spine) support.

6. Adjust keyboard height and distance from the user so that forearms and wrists are horizontal (parallel to the floor).

7. Adjust the seat height (see 9) so that thighs are horizontal, calves are positioned vertically, and feet rest firmly on the floor or on a slanted foot rest.

8. Floor to keyboard height should be between 58 and 71cm.

9. Floor to seat height should be between 40 and 48cm.

Take a periodic stretch or work on tasks not involving a monitor. Avoid glaring lights and avoid eye strain. The surrounding light and the light output of the screen should be approximately equal. If eyes feel strained take a break and see a physician.

Criteria for Rating Keyboarding Technique

	Needs Improvement	Some of the Time	All of the Time
Does the student display correct body posture:			
• sitting in a relaxed position, spine against the back of the chair, leaning slightly forward from the waist?			
• sitting centred in front of the keyboard (body directly in front of the "J" key?)			
• sitting comfortable distance from the keyboard? (A hand span is suggested)			
• placing feet on the floor for proper body balance?			
Does the student display correct arm and hand position:			
• holding arms relaxed, elbows naturally close to the body?			
• keeping fingers curved, tips of fingers resting lightly on keys?			
• placing hands close enough together to "lock" thumbs; fingers upright, not leaning toward fingers?			
• holding hands and wrists "quiet", almost motionless?			
• keeps wrists low, but palms of hands not resting on the keyboard?			
Does the student display correct keystroking?			
• beginning and ending all keystrokes at home row position?			
• anchoring the appropriate finger of the left hand on "A" or "F" and the appropriate finger on the right hand on "J" or "semi-colon" when keyboarding upward or downward reaches?			
• depressing keys with quick, snappy keystrokes followed by immediate release of key?			

	Needs Improvement	Some of the time	Needs Improvement
• keying each key with the correct finger?			
• keying the space bar with the thumb?			
• shifting with the appropriate "little" finger?			
• depressing shift key, striking key, then releasing shift when shifting is required?			
• using the "little" finger of the right hand for the enter key?			
• keeping eyes on the copy at all times?			
• consulting the text/wall chart/software keyboard illustration, rather than looking down at the actual keyboard if the location of a previously-learned key has been forgotten.			

Adapted from *Business Education*: *A Curriculum Guide for the Secondary Level: Information Processing 16, 26, 36.* (Saskatchewan Education Training and Employment 1994).

Students Technique Checklist

The following is an abbreviated technique checklist. It may be used by the teacher or by the students to evaluate their own or a partner's technique.

Student name: _____

Class: _____

Computer No.: _____

Evaluation Scale:

Excellent: 2
Fair   1
Poor: 0

Good Keyboarding Technique Means	At Start	At Finish
• Keep eyes on the copy as you work.		
• Stroke the keys with correct fingers.		
• Keep fingers curved a little.		
• Keep wrists a little above the computer so they do not touch it.		
• Sit straight, hips back in chair, lean a bit forward from the waist, keep feet on the floor if possible.		
Total		

Anecdotal Record

Student Name: _____

Class: _____ Term: _____

After an anecdotal notion is written on a pre-pasted note, the teacher may add it to this anecdotal record sheet. The teacher will **circle the focus** for each anecdotal entry.

_____

Date: _____

Focus: Knowledge   Application   Keyboarding Skills   Attitude

_____

Date: _____

Focus: Knowledge   Application   Keyboarding Skills   Attitude

_____

Date: _____

Focus: Knowledge   Application   Keyboarding Skills   Attitude

_____

Adapted from *Business Education*: *A Curriculum Guide for the Secondary Level: Information Processing 16, 26, 36.* (Saskatchewan Education Training and Employment 1994).

Warm-up Record

A Warm-up Record may be used to trace student progress in keying warm-up material. The student or teacher can record the number of lines keyed in a given time beside the appropriate date. **If students are absent, they may record lines keyed during supplemental keyboarding practice and indicate the date with an "S".**

Student Name: _____ Class: _____

For the week ending: _____	**For the week ending:** _____
Monday _____ lines	Monday _____ lines
Tuesday _____ lines	Tuesday _____ lines
Wednesday _____ lines	Wednesday _____ lines
Thursday _____ lines	Thursday _____ lines
Friday _____ lines	Friday _____ lines
Total _____ lines	**Total** _____ lines
Comments:	**Comments:**
For the week ending:	**For the week ending:** _____
Monday _____ lines	Monday _____ lines
Tuesday _____ lines	Tuesday _____ lines
Wednesday _____ lines	Wednesday _____ lines
Thursday _____ lines	Thursday _____ lines
Friday _____ lines	Friday _____ lines
Total _____ lines	**Total** _____ lines
Comments:	**Comments:**
For the week ending: _____	**For the week ending:** _____
Monday _____ lines	Monday _____ lines
Tuesday _____ lines	Tuesday _____ lines
Wednesday _____ lines	Wednesday _____ lines
Thursday _____ lines	Thursday _____ lines
Friday _____ lines	Friday _____ lines
Total _____ lines	**Total** _____ lines
Comments:	**Comments:**

A Rating Scale for Assessing Attitude and Effort in Keyboarding

Name: _____ Date: _____

	poor			excellent
Task Commitment: remains on task while in the classroom and does not distract others from their work	1	2	3	4
Attendance: maintains good attendance	1	2	3	4
Punctual: arrives to class each day on time	1	2	3	4
Effort: asks for make-up work when absent and makes arrangements to complete make-up work on own time	1	2	3	4
Initiative: begins work without teacher supervision or being reminded	1	2	3	4
Works independently: remains on task without interrupting classmates	1	2	3	4
Courtesy: responds in a positive manner to teacher/classmates and makes an attempt to profit from constructive criticism; completes tasks without complaining	1	2	3	4
Organization: comes prepared for each class by having all necessary books and supplies organized prior to processing information	1	2	3	4
Application: demonstrates continually the use of touch keyboarding skills in completing tasks	1	2	3	4
Management: maintains a log so that it is properly completed and up-to-date	1	2	3	4
Consideration: cleans up work area and puts disks, materials, and books away before leaving class	1	2	3	4
Motivation: remains on task throughout the class; remains seated until the bell and does not stand at the door	1	2	3	4
Honesty: completes own work	1	2	3	4
Curiosity: seeks help or clarification when necessary	1	2	3	4

Adapted from *Business Education*: *A Curriculum Guide for the Secondary Level: Information Processing 16, 26, 36.* (Saskatchewan Education Training and Employment 1994).

Timed-Writing Log

Timed-Writing Record for _____

Date	Copy or Page #	Total Words	Time (interval)	GWAM Gross Rate	Uncorrected Errors	CWAM	Initials

* Identify entry rate (first timing, CWAM): _____
* Identify exit rate (best of last three timings, CWAM): _____
* Improvement (CWAM): _____

Adapted from *Business Education*: *A Curriculum Guide for the Secondary Level: Information Processing 16, 26, 36.* (Saskatchewan Education Training and Employment 1994).

Scales for Assigning Grades
to CWAM (Corrected Words a Minute) Rates

The following are suggested grade equivalents for **Corrected Words a Minute** on a one-minute timing at various stages during the program:

Chart 1: After Lesson _____	
CWAM	**(out of 10)**
12	6.2
13	6.4
14	6.6
15	6.8
16	7.0
17	7.2
18	7.4
19	7.6
20	7.8
21	8.0
22	8.2
23	8.4
24	8.6
25	8.8
26	9.0
27	9.2
28	9.4
29	9.6
30	9.8
31	10

Chart 2: After Lesson _____	
CWAM	**(out of 10)**
13	6.2
14	6.4
15	6.6
16	6.8
17	7.0
18	7.2
19	7.4
20	7.6
21	7.8
22	8.0
23	8.2
24	8.4
25	8.6
26	8.8
27	9.0
28	9.2
29	9.4
30	9.6
31	9.8
32	10

Chart 3: After Lesson _____	
CWAM	**(out of 10)**
15	6.2
16	6.4
17	6.6
18	6.8
19	7.0
20	7.2
21	7.4
22	7.6
23	7.8
24	8.0
25	8.2
26	8.4
27	8.6
28	8.8
29	9.0
30	9.2
31	9.4
32	9.6
33	9.8
34	10

| Chart 4: After Lesson _____ ||
CWAM	(out of 10)
15	5.0
16	5.2
17	5.4
18	5.6
19	5.8
20	6.0
21	6.2
22	6.4
23	6.6
24	6.8
25	7.0
26	7.2
27	7.4
28	7.6
29	7.8
30	8.0
31	8.2
32	8.4
33	8.6
34	8.8
35	9.0
36	9.2
37	9.4
38	9.6
39	9.8
40	10

Chart 5: After Lesson _____	
CWAM	**(out of 10)**
20	5.0
21	5.2
22	5.4
23	5.6
24	5.8
25	6.0
26	6.2
27	6.4
28	6.6
29	6.8
30	7.0
31	7.2
32	7.4
33	7.6
34	7.8
35	8.0
36	8.2
37	8.4
38	8.6
39	8.8
40	9.0
41	9.2
42	9.4
43	9.6
44	9.8
45	10

Chart 6: After Lesson _____	
CWAM	**(out of 10)**
25	5.0
26	5.2
27	5.4
28	5.6
29	5.8
30	6.0
31	6.2
32	6.4
33	6.6
34	6.8
35	7.0
36	7.2
37	7.4
38	7.6
39	7.8
40	8.0
41	8.2
42	8.4
43	8.6
44	8.8
45	9.0
46	9.2
47	9.4
48	9.6
49	9.8
50	10

Common Proofreading Symbols

Symbol	Meaning	Example
⌃	insert a comma	brother⌃ I tell you
⌄	apostrophe or single quotation mark	I wouldnt
∧ or ⟩ or ⋀	insert something	insert here ⟨ something
⌄⌄ or ⌄ ⌄	use double quotation marks	poem is ⌄Design⌄
⊙	use a period here	end of sentence ⊙
⌔	delete	take it out
tr	transpose elements	change order the
◡	close up this space	print as o ne word
#	a space needed here	put onchere #
¶	begin new paragraph	forever. ¶After
stet	do not change	let marked text stand as set

Common Proofreading Abbreviations

(The abbreviation would appear in the margin, probably with a line or arrow
pointing to the offending element.)

Abbreviation	Meaning	Example
Ab	a faulty abbreviation	She had earned a PhD along with her M.D.
Agr	agreement problem: subject/verb or pronoun/antecedent	The piano as well as the guitar need tuning. The student lost their book.
Awk	awkward expression or construction	The storm had the effect of causing millions of dollars in damage.
Cap	faulty capitalization	We spent the Fall in Southern Spain.
CS	comma splice	Raoul tried his best, this time that wasn't good enough
DICT	faculty diction	Due to the fact that we were wondering as to whether it would rain, we stayed home.
Dgl	dangling construction	Working harder than ever, this job proved to be too much for him to handle.
- ed	problem with final -*ed*	Last summer he walk all the way to Birmingham.
Frag	fragment	Depending on the amount of snow we get this winter and whether the towns buy new trucks.
||	problem in parallel form	My income is bigger than my wife.
P/A	pronoun/antecedent agreement	A student in accounting would be wise to see their advisor this month.
Pron	problem with pronoun	My aunt and my mother have wrecked her car. The committee has lost their chance to change things. You'll have to do this on one's own time.
Rep	unnecessary repetition	The car was blue in color.

Common Proofreading Abbreviations

(The abbreviation would appear in the margin,
probably with a line or arrow pointing to the offending element.)

Abbreviation	Meaning	Example
R-O	run-on sentence	Raoul tried his best this time that wasn't good enough.
Sp	spelling error	This sentence is flaude with two mispellings.
- s	problem with final -s	He wonder what these teachers think of him.
STET	Let it stand	The proofreader uses this Latin term to indicate that proofreading marks calling for a change should be ignored and the text as originally written should be "let stand".
S/V	subject/verb agreement	The problem with cities are leadership.
T	verb tense problem	He comes into the room, and he pulled his gun.
Wdy	wordy	Seldom have we perused a document so verbose, so ostentatious in phrasing, so burdened with too many words.
WW	wrong word	What affect did the movie have on Sheila? She tried to hard to analyze its conclusion.

Student Self-Assessment Checklist for Proofreading

Student Name:_____ Date: _____

Criteria	Yes	No	Comments
Did I locate and correct errors in:			
• capitalization?			
• transposition (reversal)?			
• punctuation?			
• misspelled words?			
• formatting?			
Did I:	**Yes**	**No**	**Comments**
• check the important facts and details of the information?			
• read the material slowly to understand the meaning of what I was reading?			
• compare the original information to my input information?			
• consult reference materials as they were needed?			
Did I:	**Yes**	**No**	**Comments**
• Check for omitted or added works when the copy was revised?			
• check line endings for inaccuracies (hyphenation)?			
• use the spell checking function?			
• view the document before printing?			
• print the document after I proofread it on the screen?			
• read the printed document and correct any errors?			
• ask another person to read the draft to me as I proofread my work?			

Adapted from *Business Education: A curriculum Guide for the Secondary Level: Information Processing 16. 26. 36.* (Saskatchewan Education Training and Employment 1994).

Internet Search Sample

Provide an answer and the URL of the site used to find the solution for each of the following:

1) A teacher has moved to Tokyo to teach for a year. You would like to chat with this person on MSN. What would be a convenient PEI and Tokyo time to contact this person? (What is the time difference between PEI and Tokyo?)

2) At today's exchange rate how many Canadian dollars will it take to buy 50 Euro's?

3) Translate a short paragraph into Spanish. (keyboarding paragraph)

4) List three security settings on a wireless home router. (Minimum settings that should be enabled to make sure that there is not unauthorized access to the network)

5) Factor $6 + 6x^2 + 13x$ Find a good online tutorial that explains the process.

6) What was a new sport at the 2008 summer Olympics? Who won this event?

7) When is the next Air Canada Flight into Charlottetown Airport? What is its flight number? Is it running on time?

8) Find where to buy an online ticket to the Corel centre for a hockey game. (or other event as directed by your teacher) View the sections of the arena? Pick the area with the best view. How much is the ticket for this section?

9) How much precipitation fell on P.E.I. during White Juan?

10) Provide directions (and a map) from your home to Robbie Street, Halifax. How far is it? What is the estimated time to drive that distance?

11) Find the home telephone number of a relative or friend in another province.

12) What is the stock symbol for regular common shares of **The Royal Bank of Canada** on the Toronto Stock exchange? What is the highest bid price for these shares so far today?

13) Find the postal code for 416 Main Street, Moncton, N.B.

14) Find a full length magazine article on the CERN particle excellerator . (MacLean's, National Geographic, Popular Science, etc.) - Hint: This may be found in a library subscription that is accessed online ...

15) What was the Canadian National Debt for 2007?

Bonus:

Plan a four-day Canadian vacation. Where are you going? Where will you stay? What services are provided at the place you will be staying? Are there special rates for staying longer than one night? How will you get there? Are there special rates for different times of the week? What will be the cost from where you live? What events or attractions will you visit while away? What is the cost of these?

Extension Activity:

Prepare a spreadsheet budget for the trip.

Internet Research Rubric

Assessment: Teacher/Self/Peer **Student:** _____

	Level 1	Level 2	Level 3	Level 4	Mark
Inquiry Skill (notes, references)	☐ exhibits limited quality	☐ exhibits some quality	☐ exhibits quality	☐ exhibits substantial quality	/10
Critical Thinking (Analysis, Interpretation)	☐ data analyzed with limited clarity	☐ data analyzed with moderate clarity	☐ data analyzed with considerable clarity	☐ data analyzed with exemplary clarity	/10
Communication (Written)	☐ results communicated with limited degree of accuracy and effectiveness	☐ results communicated with some degree of accuracy and effectiveness	☐ results communicated with considerable degree of accuracy and effectiveness	☐ results communicated with a high degree of accuracy and effectiveness	/10
Knowledge (Understanding)	☐ limited knowledge of topic researched	☐ some knowledge of topic researched	☐ considerable knowledge of topic researched	☐ full knowledge of topic researched	/10
Comments:					/40

Visual Presentation Rubric

Assessment: Teacher/Self/Peer　　　　　　　**Student:**
_____

Criteria	Level 1	Level 2	Level 3	Level 4	Mark
Information	☐ limited knowledge and little relevant content	☐ some knowledge and relevant content and ideas	☐ considerable knowledge and relevant content and ideas	☐ full knowledge of subject and insightful ideas	/5
Organization	☐ little evidence of sequencing or planning	☐ organized in some sections	☐ information is in logical sequence	☐ thoughtful, logical presentation	/5
Audience	☐ information, presentation and design does not appeal to audience	☐ parts of presentation appeal to the audience	☐ the audience appears to enjoy the information and presentation	☐ engaged, interested, asks questions, involves audience	/5
Communication (Written - spelling & grammar)	☐ results communicated with limited degree of accuracy and effectiveness	☐ results communicated with some degree of accuracy and effectiveness	☐ results communicated with considerable degree of accuracy and effectiveness	☐ results communicated with a high degree of accuracy and effectiveness	/5
Communication (Oral)	☐ hard to hear; does not look at audience	☐ low volume at times; little eye contact	☐ good volume and converses with audience	☐ varies tone; shows confidence; shows interest in topic;	/5
Visual Aids	☐ no use of graphics or multimedia	☐ some use of graphics and multimedia	☐ graphics support message and multimedia used	☐ creative use of graphics and multimedia	/5
Design Principles	☐ layout demonstrates limited understanding of design	☐ layout shows understanding of 1 or 2 principles of design	☐ layout shows considerable understanding of design to aid in message delivery	☐ layout shows considerable thought, creativity and knowledge of design	/5
Comments:					/35

_____

Desktop Publishing Rubric

Assessment: Teacher/Self/Peer   **Student:**

_____

Criteria	Level 1	Level 2	Level 3	Level 4	Mark
Information (Message)	☐ limited clarity	☐ message or theme is somewhat clear	☐ message or theme is clear	☐ message or theme is very clears	/5
Principles (contrast, repetition, alignment, proximity)	☐ little evidence of understanding	☐ some evidence of understanding	☐ good evidence of understanding	☐ high degree of understanding demonstrated	/5
Typography employed effectively	☐ font selection not apparent	☐ an attempt to choose fonts to support a theme	☐ fonts support the message somewhat	☐ font selection supports the message and adds to visual impact	/5
Mechanical (spelling, measuring, placement, etc.)	☐ work contains many errors	☐ some errors found in work	☐ few errors are found	☐ work is accurate and error free	/5
Selects and Arranges Images to Show Connections	☐ organization makes few logical connections	☐ organization makes some logical connections	☐ organization makes logical connections	☐ organization makes highly logical connections	/5
Creative Thinking	☐ no use of creativity; little care or effort	☐ some use of creativity	☐ good instances of creativity	☐ unusual approach; high degree of creativity	/5
Comments:					/30

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