

Information and
Communication
Technology
Program of Studies

Kindergarten to Grade 3

INFORMATION AND COMMUNICATION TECHNOLOGY

A. RATIONALE AND PHILOSOPHY

The Information and Communication Technology (ICT) curriculum provides a broad perspective on the nature of technology, how to use and apply a variety of technologies, and the impact of ICT on self and society. Students in Kindergarten through Grade 12 will be encouraged to grapple with the complexities, as well as the advantages and disadvantages, of technologies in our lives and workplaces. **The ICT curriculum is not intended to stand alone, but rather to be infused within core courses and programs.**

Technology is best learned within the context of applications. Activities, projects and problems that replicate real-life situations are effective resources for learning technology. Students will learn:

- that, although technology is often complex, it is simply “a way of doing things”
- about the impact of technologies in their lives and workplaces
- how to determine which processes, tools and techniques to use, and when to use them
- how to use and apply a variety of information and communication technologies to problem solving, decision making, inquiring and researching in the context of other subject matter.

Technology will serve today’s students well—in entry-level work and beyond, in further study and

lifelong learning, and in their personal lives as inquisitive, reflective, discerning and caring citizens. Advanced technologies are more pervasive today than they have ever been, and their uses are expanding continually. ICT is significantly enhancing and altering human activity, and enabling us to live, work and think in ways that most of us never thought possible.

Since technology has an increasingly significant impact, and such broad implications for everyone—individuals, groups and entire nations—students must be prepared to understand, use and apply ICT in effective, efficient and ethical ways.

A Way of Doing Things

Technology is about the ways things are done; the processes, tools and techniques that alter human activity. ICT is about the new ways in which we can communicate, inquire, make decisions and solve problems. It is the processes, tools and techniques for:

- gathering and identifying information
- classifying and organizing
- summarizing and synthesizing
- analyzing and evaluating
- speculating and predicting.

The ICT curriculum presents these concepts within three interrelated categories:

- communicating, inquiring, decision making and problem solving
- foundational operations, knowledge and concepts
- processes for productivity.

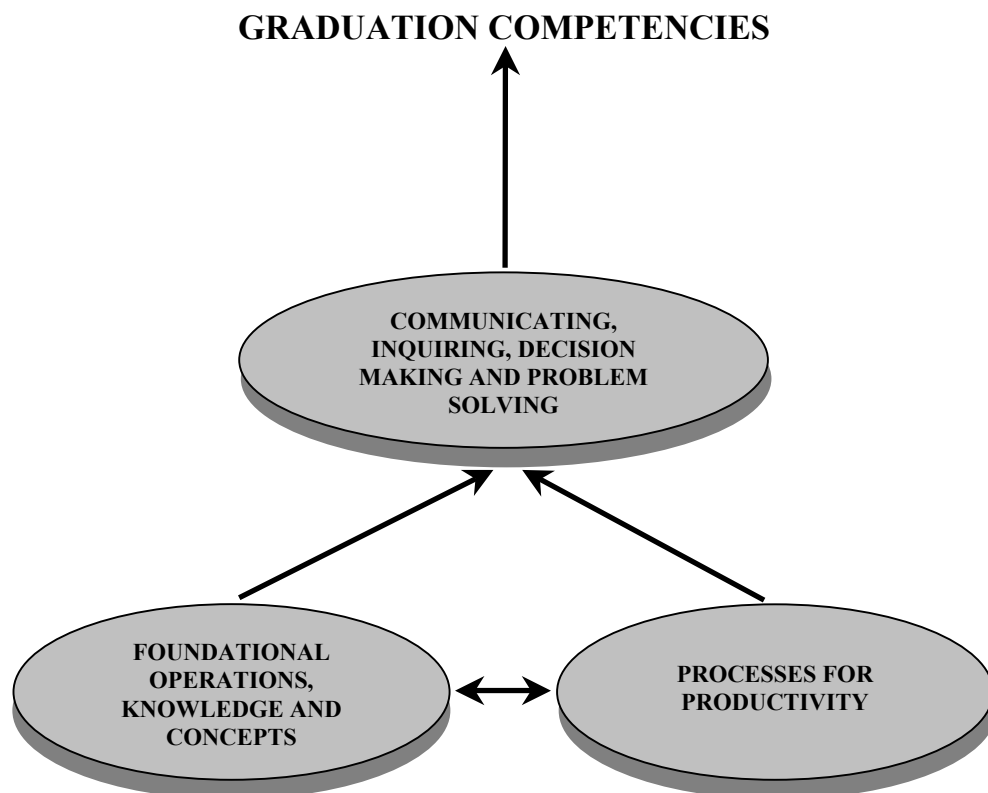
Communicating, inquiring, decision making and problem solving are about the ability to use a variety of processes to critically assess information, manage inquiry, solve problems, do research and communicate with a variety of audiences. Students are expected to apply their knowledge and skills in real-life situations.

Foundational operations, knowledge and concepts is about understanding the nature and affect of

technology, the moral and ethical use of technology, mass media in a digitized context, ergonomic and safety issues, and basic computer, telecommunication and multimedia technology operations.

Processes for productivity is about the knowledge and skills required to use a variety of basic productivity tools and techniques—for example, text composition; data organization; graphical, audio and multimedia composition and manipulation; media and process integration; and electronic communication, navigation and collaboration through electronic means.

Expected ICT graduation competencies are illustrated in the diagram below.



Information and Communication Technology Outcomes

ICT CURRICULUM

The contents of the ICT curriculum include:

- general outcomes
- specific outcomes
- illustrative examples
- assessment framework.

There is a progressive sequence of skill development throughout the grades.

General Outcomes

General outcomes are statements that identify what students are expected to know, be able to do and value upon completion of an exit level.

Specific Outcomes

Specific outcomes are statements identifying the component knowledge, skills and attitudes of a general outcome.

Illustrative Examples

Illustrative examples are provided in support documents and arranged by grade and subject. They are sample tasks that demonstrate and elaborate on the general and specific outcomes. They are important in further clarifying the intent of the outcomes and in conveying their richness, breadth and depth. There are suggestions for their placement in certain grade levels and/or subject areas, but they can be developed in any sequence that best meets student needs. **The illustrative examples are for discretionary use.**

Assessment Framework

The *Classroom Assessment Tool Kit* provides a support framework for determining student competencies in the ICT outcomes within core subjects and courses. Sample assessment tasks are provided in the subject areas of language arts, mathematics, science and social studies for Grade 3, Grade 6, Grade 9 and 20- and 23-level courses. These can be found at the Alberta Learning web site.

CURRICULUM OUTCOMES FORMAT

The format of the ICT curriculum has been structured in two ways. The outcomes, by category, are displayed once across all four divisions, and then stated once again, within each division.

FRENCH IMMERSION AND FRANCOPHONE PROGRAMS

Schools offering francophone and French immersion programs must take into account that ICT outcomes are to be achieved in the French language. Thus, the acquisition of software and operating systems should be consistent with the language of learning. In the case of dual-track schools, decisions regarding software and operating systems should be made on the basis of the needs of both student clientele.

SOFTWARE TOOLS

Appropriate computer-based software tools are:

- word processing
- database
- spreadsheet
- draw/paint/graphics applications
- Internet browser
- email
- multimedia applications
- clipart/media clips.

OUTCOME ORGANIZATION

OUTCOME CATEGORIES

Communicating, Inquiring, Decision Making and Problem Solving	
C1	Students will access, use and communicate information from a variety of technologies.
C2	Students will seek alternative viewpoints, using information technologies.
C3	Students will critically assess information accessed through the use of a variety of technologies.
C4	Students will use organizational processes and tools to manage inquiry.
C5	Students will use technology to aid collaboration during inquiry.
C6	Students will use technology to investigate and/or solve problems.
C7	Students will use electronic research techniques to construct personal knowledge and meaning.

Foundational Operations, Knowledge and Concepts	
F1	Students will demonstrate an understanding of the nature of technology.
F2	Students will understand the role of technology as it applies to self, work and society.
F3	Students will demonstrate a moral and ethical approach to the use of technology.
F4	Students will become discerning consumers of mass media and electronic information.
F5	Students will practise the concepts of ergonomics and safety when using technology.
F6	Students will demonstrate a basic understanding of the operating skills required in a variety of technologies.

Processes for Productivity	
P1	Students will compose, revise and edit text.
P2	Students will organize and manipulate data.
P3	Students will communicate through multimedia.
P4	Students will integrate various applications.
P5	Students will navigate and create hyperlinked resources.
P6	Students will use communication technology to interact with others.

B. GENERAL AND SPECIFIC OUTCOMES

Category: Communicating, Inquiring, Decision Making and Problem Solving

General Outcomes	Specific Outcomes
<p>C1 Students will access, use and communicate information from a variety of technologies.</p>	<p>C1 1.1 access and retrieve appropriate information from electronic sources for a specific inquiry 1.2 process information from more than one source to retell what has been discovered</p>
<p>C2 Students will seek alternative viewpoints, using information technologies.</p>	<p>C2 1.1 [no outcomes for this division]</p>
<p>C3 Students will critically assess information accessed through the use of a variety of technologies.</p>	<p>C3 1.1 compare and contrast information from similar types of electronic sources</p>
<p>C4 Students will use organizational processes and tools to manage inquiry.</p>	<p>C4 1.1 follow a plan to complete an inquiry 1.2 formulate new questions as research progresses 1.3 organize information from more than one source</p>
<p>C5 Students will use technology to aid collaboration during inquiry.</p>	<p>C5 1.1 share information collected from electronic sources to add to a group task</p>
<p>C6 Students will use technology to investigate and/or solve problems.</p>	<p>C6 1.1 identify a problem within a defined context 1.2 use technology to organize and display data in a problem-solving context 1.3 use technology to support and present conclusions</p>
<p>C7 Students will use electronic research techniques to construct personal knowledge and meaning.</p>	<p>C7 1.1 develop questions that reflect a personal information need 1.2 summarize data by picking key words from gathered information and by using jottings, point form or retelling 1.3 draw conclusions from organized information 1.4 make predictions based on organized information</p>

Category: Foundational Operations, Knowledge and Concepts

General Outcomes	Specific Outcomes
<p>F1 Students will demonstrate an understanding of the nature of technology.</p>	<p>F1 1.1 identify techniques and tools for communicating, storing, retrieving and selecting information 1.2 apply terminology appropriate to the technologies being used at this division level 1.3 demonstrate an understanding that the user manages and controls the outcomes of technology</p>
<p>F2 Students will understand the role of technology as it applies to self, work and society.</p>	<p>F2 1.1 identify technologies used in everyday life 1.2 describe particular technologies being used for specific purposes</p>
<p>F3 Students will demonstrate a moral and ethical approach to the use of technology.</p>	<p>F3 1.1 demonstrate courtesy and follow classroom procedures when making appropriate use of computer technologies 1.2 work collaboratively to share limited resources 1.3 demonstrate appropriate care of technology equipment 1.4 recognize and acknowledge the ownership of electronic material 1.5 use appropriate communication etiquette</p>
<p>F4 Students will become discerning consumers of mass media and electronic information.</p>	<p>F4 1.1 compare similar types of information from two different electronic sources</p>
<p>F5 Students will practise the concepts of ergonomics and safety when using technology.</p>	<p>F5 1.1 demonstrate proper posture when using a computer 1.2 demonstrate safe behaviours when using technology</p>
<p>F6 Students will demonstrate a basic understanding of the operating skills required in a variety of technologies.</p>	<p>F6 1.1 perform basic computer operations, which may vary by environment, including powering up, inserting disks, moving the cursor, clicking on an icon, using pull-down menus, executing programs, saving files, retrieving files, printing, ejecting disks and powering down 1.2 use proper keyboarding techniques for the home row, enter, space bar, tab, backspace, delete and insertion-point arrow keys 1.3 operate basic audio and video equipment, including inserting, playing, recording and ejecting media</p>

Category: Processes for Productivity

General Outcomes	Specific Outcomes
<p>P1 Students will compose, revise and edit text.</p>	<p>P1 1.1 create original text, using word processing software, to communicate and demonstrate understanding of forms and techniques 1.2 edit complete sentences, using such features of word processing as cut, copy and paste</p>
<p>P2 Students will organize and manipulate data.</p>	<p>P2 1.1 read information from a prepared database</p>
<p>P3 Students will communicate through multimedia.</p>	<p>P3 1.1 access images, such as clip art, to support communication 1.2 create visual images by using such tools as paint and draw programs for particular audiences and purposes 1.3 access sound clips or recorded voice to support communication</p>
<p>P4 Students will integrate various applications.</p>	<p>P4 1.1 integrate text and graphics to form a meaningful message 1.2 balance text and graphics for visual effect</p>
<p>P5 Students will navigate and create hyperlinked resources.</p>	<p>P5 1.1 navigate within a document, compact disc or other software program that contains links 1.2 access hyperlinked sites on an intranet or the Internet</p>
<p>P6 Students will use communication technology to interact with others.</p>	<p>P6 1.1 compose a message that can be sent through communication technology 1.2 communicate electronically with people outside the classroom</p>

