



# TDSB ICT Standards

Digital Learning for  
Kindergarten to Grade 12



# TDSB ICT Standards

The TDSB ICT Standards are guided by the International Society for Technology in Education's National Educational Technology Standards (ISTE NETS), accessible from:  
<http://www.iste.org/AM/Template.cfm?Section=NETS>.

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This document has been reviewed for equity.

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## ICT Standards: *Introduction*

The *TDSB ICT Standards - Digital Learning for Kindergarten to Grade 12* is available online at [www.tdsb.on.ca/ictstandards](http://www.tdsb.on.ca/ictstandards), and replaces the January 2004 TDSB document Standards for Information and Communication Technologies (ICT) Kindergarten to Grade 12.

### ***The Importance of ICT Integration in the Curriculum***

The digital-age teaching professional must demonstrate a vision of technology infusion and develop the technology skills of others. These are the hallmarks of the new education leader.

-Don Knezek, ISTE CEO, 2008

Our students are “growing up digital” (Tapscott, 1998) with easy real-time access to vast amounts of information, people, and interactive media via the Internet and other Information Communication Technology (ICT). Our 21st Century Learners are developing a need to be engaged by digital means and to express themselves through digital mediums – aspiring to be digitally fluent.

Teachers are preparing students for future roles and occupations in society that may not currently exist. It is certain that they will need to be digitally literate for these future roles and responsibilities. Therefore, there is a need to address ICT not as a separate stand-alone program, but rather, as a tool to be used for the enhancement of learning, communication, and creativity. Bloom’s Taxonomy revisions in 2008 include ICT connections for digital learning. The higher-order thinking skills of applying, analyzing, evaluating, and creating are developed when students integrate ICT tools to communicate within content areas of The Ontario Curriculum. Ultimately this helps students develop Essential Skills – as defined by Human Resources and Skills Development Canada – for work, learning, and life. Continuous Learning, one of the nine Essential Skills, requires that all continuously upgrade and learn to grow with change. Continuous Learning includes:

- Knowing how to learn;
- Understanding one’s own learning style; and
- Knowing how to gain access to a variety of materials, resources and learning opportunities.

-Human Resources and Social Development Canada (2007)

### ***Goals of the TDSB ICT Standards Document***

The *TDSB ICT Standards* document is a framework for students, teachers, and administrators to utilize technology as a tool for teaching and learning for K to 12 students throughout the TDSB. With the overall goal of improving student achievement, the ICT Standards document is a guide to help teachers integrate ICT into The Ontario Curriculum, into teaching practice, and into the student’s repertoire of skills in order to support and enhance continuous learning.

In recognition of varying experience levels with ICT integration among teachers, this ICT Standards document seeks to bridge the gap between what Marc Prensky calls “Digital Natives” - today’s learners, and “Digital Immigrants” – many of today’s teachers. This document offers multiple entry points to accommodate teachers who span the digital literacy continuum and suggests various ICT experiences to prepare our students for the future. This document prescribes skills and the corresponding tools to provide the students with learning opportunities to master skills at certain grade levels.

This ICT Standards document provides different methods of delivering The Ontario Curriculum so that the various learning styles of our students may be addressed. Differentiated instruction requires the assessment of student profiles including student interests, readiness for the curriculum topic, and learning preferences. Technology is of interest and a common means of communication for today’s youth, and therefore, an excellent strategy for student choice and engagement. Integrating digital literacy within the teaching and learning of content, process, product, and environment provides our students with essential skills for work and life.

# The Three Foundations of the TDSB ICT Standards Document

The *TDSB ICT Standards* document has been guided by three resources:

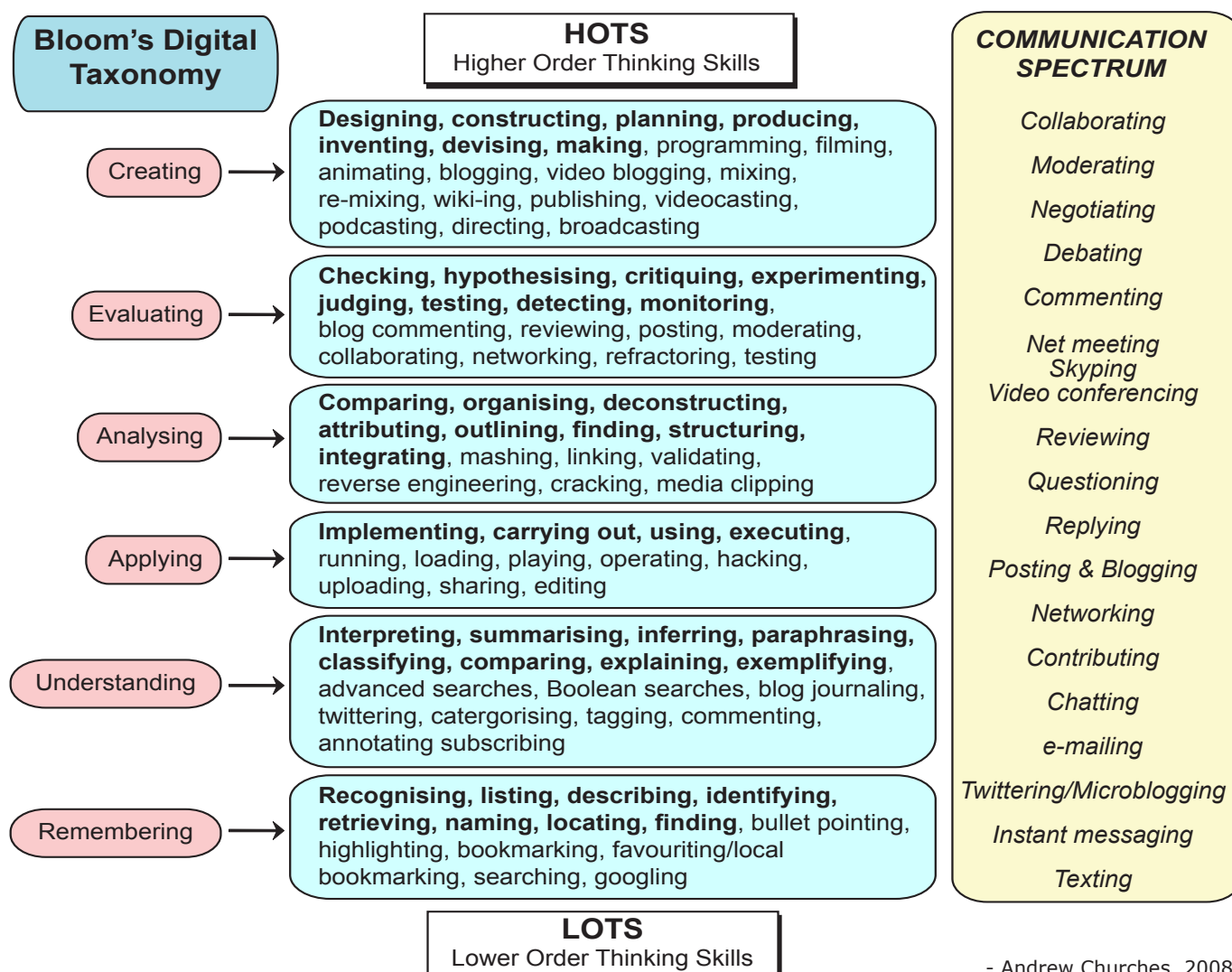
- ISTE NETS for Students 2007 <http://www.iste.org/AM/Template.cfm?Section=NETS>
- Bloom's Digital Taxonomy (Andrew Churches, 2008) <http://edorigami.wikispaces.com/Bloom%27s+Digital+Taxonomy>
- Human Resources and Social Development Canada (Essential Skills, 2007) [http://www.hrsdc.gc.ca/eng/workplaceskills/essential\\_skills/general/understanding\\_es.shtml](http://www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/understanding_es.shtml)

## Foundation One: ISTE NETS for Students 2007

The International Society for Technology in Education (ISTE) is a non-profit organization representing over 85,000 professionals worldwide. They first published their National Educational Technology Standards for Students (NETS•S) in 1998. These standards were then updated in 2007 and can be accessed at <http://www.iste.org/AM/Template.cfm?Section=NETS>. Educators around the world are currently sharing how they are implementing the ISTE NETS on ISTE's Implementation wiki which is accessible at <http://nets-implementation.iste.wikispaces.net>.

## Foundation Two: Bloom's Digital Taxonomy

Anderson and Krathwohl revised Benjamin Bloom's Taxonomy in 2001 by using verbs for the categories and rearranging the sequence within the taxonomy. Andrew Churches, an educator in New Zealand, subsequently revised Anderson and Krathwohl's version of Bloom's Taxonomy in 2008 to incorporate ICT activities. The revision, Bloom's Digital Taxonomy, is accessible at <http://edorigami.wikispaces.com/Bloom%27s+Digital+Taxonomy>. Andrew Churches' summary concept map of Bloom's Digital Taxonomy is provided below:



- Andrew Churches, 2008

The “Communication Spectrum” is included as a separate element, but is also a shared element within the Higher Order Thinking Skills (HOTS). Collaboration, especially collaboration mediated by ICT, greatly enhances learning. The United Nations Educational Scientific and Cultural Organization (UNESCO)’s has identified Four Pillars of Education <http://www.unesco.org/delors/fourpil.htm> Learning to know, Learning to do, Learning to live together, and Learning to be. After considering the Four Pillars of Education, Churches writes, “Collaboration is not a 21st century skill, it is a 21st century essential.”

### **Foundation Three: Human Resources and Social Development Canada**

Human Resources and Social Development Canada is a department of the Government of Canada whose mission is to build a stronger more competitive Canada, to help Canadians as they make life choices, and to improve Canadian quality of life. The Government of Canada and other national and international agencies have identified and confirmed through research nine Essential Skills for successful participation in the Canadian labour market.

Reading	<ul style="list-style-type: none"> <li>• Reading materials in the form of sentences and paragraphs to understand, learn, critique, or evaluate.</li> </ul>
Document Use	<ul style="list-style-type: none"> <li>• Reading or creating information displayed in a variety of forms with words, numbers, symbols, drawings, etc. to give meaning to a particular topic.</li> </ul>
Numeracy	<ul style="list-style-type: none"> <li>• Thinking, estimating, and calculating with numbers in quantitative terms.</li> </ul>
Writing	<ul style="list-style-type: none"> <li>• Writing text both by hand or keying on a computer for informing, organizing, recording, requesting, and justifying, comparing, analyzing, or presenting information.</li> </ul>
Oral Communication	<ul style="list-style-type: none"> <li>• Using speech to convey information by greeting, gathering, facilitating, directing, and counselling.</li> </ul>
Working with Others	<ul style="list-style-type: none"> <li>• Working independently, with partners, in a team as a member, leader, or supervisory role.</li> </ul>
Thinking	<ul style="list-style-type: none"> <li>• Processing by gathering, planning, and organizing to the next step of analyzing, problem solving, and decision making.</li> </ul>
Computer Use	<ul style="list-style-type: none"> <li>• Using computer applications and technological tools to complete a particular task.</li> </ul>
Continuous Learning	<ul style="list-style-type: none"> <li>• Participating in an on-going process of acquiring skills and knowledge through various methods of training.</li> </ul>

Aside from the obvious skill, Computer Use, digital literacy supports the learning of these essential skills through the integration of The Ontario Curriculum. The ICT Standards support and suggest strategies for integration of the curriculum, essential skills, and technology that will prepare young Canadians for a competitive, digital world where digital fluency is beneficial.

*(The Essential Skills are published by the Government of Canada and this reproduction has not been produced in affiliation with, or with the endorsement of the Government of Canada.)*

# ICT Standards: Description of the TDSB Document

## TDSB ICT Standards Document and The Ontario Curriculum

The *TDSB ICT Standards - Digital Learning for Kindergarten to Grade 12* is a framework for using technology as a tool for teaching and learning and is meant to be used in conjunction with The Ontario Curriculum documents. The ICT Standards are not a stand-alone course of study.

### **Document Format**

The document is organized grade-by-grade, and offers:

1. TDSB ICT Standards
2. Curricular Connections
3. Curriculum and ICT Integration Resources
4. ICT Skills Continuum

## Section 1: TDSB ICT Standards

Although there is a separate “TDSB ICT Standards” page for each grade, this page is identical for each grade within a division. The Standards only change from one division to the next, not from grade to grade. The method for dividing the grade divisions in this document are as follows:

- Kindergarten – Grade 2
- Grade 3 – Grade 5
- Grade 6 – Grade 8
- Grade 9 – Grade 12

The TDSB ICT Standards are organized into six strands which are guided by the *ISTE NETS for Students 2007*. These strands and descriptions are similar for all grades K to 12.



### **Technology Operations & Concepts**

Students demonstrate a sound understanding of technological concepts, systems, and operations.



### **Research & Information Fluency**

Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.



### **Critical Thinking & Problem Solving**

Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.



### **Communication & Collaboration**

Students work collaboratively, using digital media and environments, to support individual learning and to contribute to the learning of others.



### **Digital Citizenship**

Students understand human, cultural, and societal issues related to technology and practice legal, ethical, and safe behaviour.

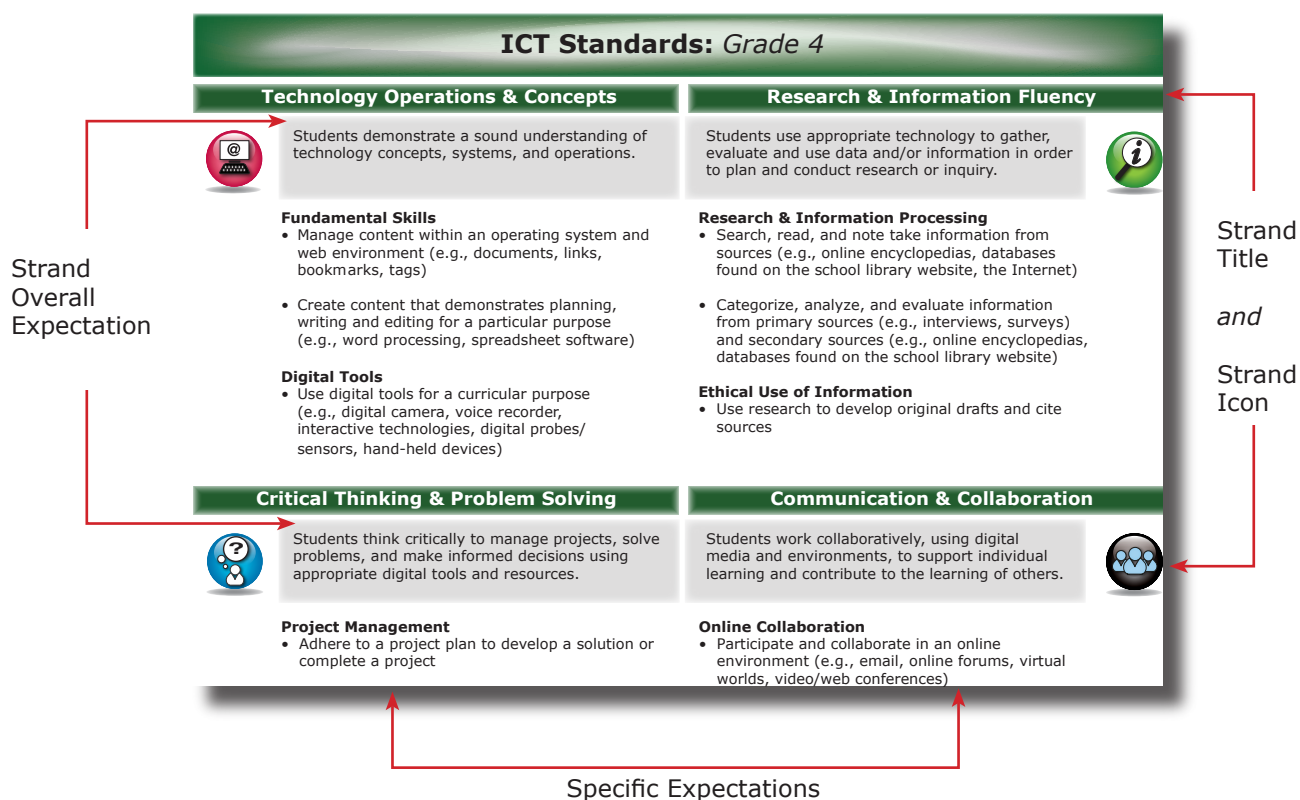


### **Creativity & Innovation**


Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.



## Section 1: TDSB ICT Standards' Diagram



## Section 2: Curricular Connections

This section provides suggestions for ICT integration with specific Ontario Curriculum; however, the ICT activities described could be integrated into other curricula not mentioned in this document. Every grade has three to five "ICT Experiences" and each ICT Experience is more ICT-rich than the previously listed one. Hence, the last experience listed for this grade will be the most ICT-rich and likely the most ICT-complex. The level of ICT richness, or complexity, is indicated by the number of computer icons in the right corner of the ICT Experience description: four icons represents the highest in ICT-richness. This level of complexity is determined within the grade itself as the ICT skills from K to 12 gradually progress and move from guided to independent. 

Therefore, a teacher who is new to ICT integration may want to begin with an ICT Experience closer to the top of the Curriculum Connections section, whereas a teacher who is more experienced with ICT integration may want to try an ICT Experience closer to the bottom of this section. Categories of ICT Experiences include:

- Productivity: Word Processing, Spreadsheet, and Database
- Collaboration
- Digital Presentation
- Creative and Innovative Work

There is a natural progression from grade-to-grade for each category. However, not all categories are addressed for each grade. Teachers are encouraged to create their own ICT Experiences.

### Essential Learning

Essential learning lists the thinking skills from Bloom's Digital Taxonomy which are exercised in the corresponding ICT Experience.

### Strand Icon

Any visible ICT strand icon indicates which strand(s) a particular ICT Experience addresses.

### ICT Experiences

ICT Experiences are teaching and learning activities that involve ICT skills which vary according to the category and grade.

### Examples of Curricular Integration

These are suggested, but not exhaustive, curricular and ICT integration ideas.

## Section 2: Curricular Connections' Diagrams

### Elementary: Grade 4 - Curricular Connections

#### Essential Learning: Organizing and Publishing



#### ICT Experience – Word Processing

Students will demonstrate proper technique and posture when using a keyboard. Using a word processor, students will incorporate columns, lists, and images to publish an original text with proper citation of resources.

#### Examples of Curricular Integration

- Create a pro-con chart or a school newsletter article that identifies effects of clear cutting on a forest community in preparation for Earth Day (*Social Studies*)
- Create a poster/pamphlet to advertise the benefits of not smoking (*Health and Physical Education*)
- Capture images in the local community to show the effects of human activities on habitats and then import pictures into a report (*Science*)
- Use interactive whiteboards and resources to support fraction exploration and capture learning in an electronic journal (*Math*)

### Secondary: Grade 10 - Curricular Connections

#### Elements of ICT Experience

The elements are a cluster of ICT skills or “look for’s” that a student may complete in order to realize the corresponding “ICT Experience”. Each of the elements provided do not need to be integrated; a teacher may choose one or more elements and then select from the list of “Examples of Curricular Integration”. Suggestions of ICT software have been provided within many skills. The suggestions would be a possible entry point for a teacher who is new to ICT integration. The software list on page 52 or the most-current list of software available by OSAPAC - Ontario Software Acquisition and Program Committee, TDSB, and open source is provided on the ICT Standards website, [www.tdsb.on.ca/ictstandards](http://www.tdsb.on.ca/ictstandards), as well as links for support and resources.

#### Essential Learning: Networking, Collaborating, and Synthesizing



#### ICT Experience - Collaboration

Students will collaborate with peers outside their community in an online forum to solve a problem and post conclusions.

#### Elements of ICT Experience

- Collaborate to explain, interpret, hypothesize, and synthesize to determine a solution to an authentic problem
- Network with others locally and globally through safe, responsible, and respectful electronic communications
- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Read information (e.g., calendars, news items, curricular content, grades)
- Navigate the environment
- Download or link curricular materials
- Submit curricular work

#### Examples of Curricular Integration

- Invention and innovation in entrepreneurship
- Natural and human factors that influence climate change
- Personal finances
- Canadian economic and social changes since 1914
- Cooking methods
- Health and safety standards in relation to health and tourism
- Home computer networking

### Section 3: Curriculum and ICT Integration Resources

#### FOS, School, or Committee Planning Template

The FOS, School, or Committee Planning Template is a Curriculum and ICT Integration guide for teams within a FOS or school.

#### FOS and School Examples

The FOS and School examples are provided as guidelines for the use of the planning template.

#### Unit Planning Template

The Unit Planning Template is a guide for teachers as they integrate curriculum and ICT.

#### Unit Plan Examples

The elementary and secondary unit plan examples are provided as a guideline for teachers as they plan curriculum units with ICT integration.

#### Professional Learning Guide

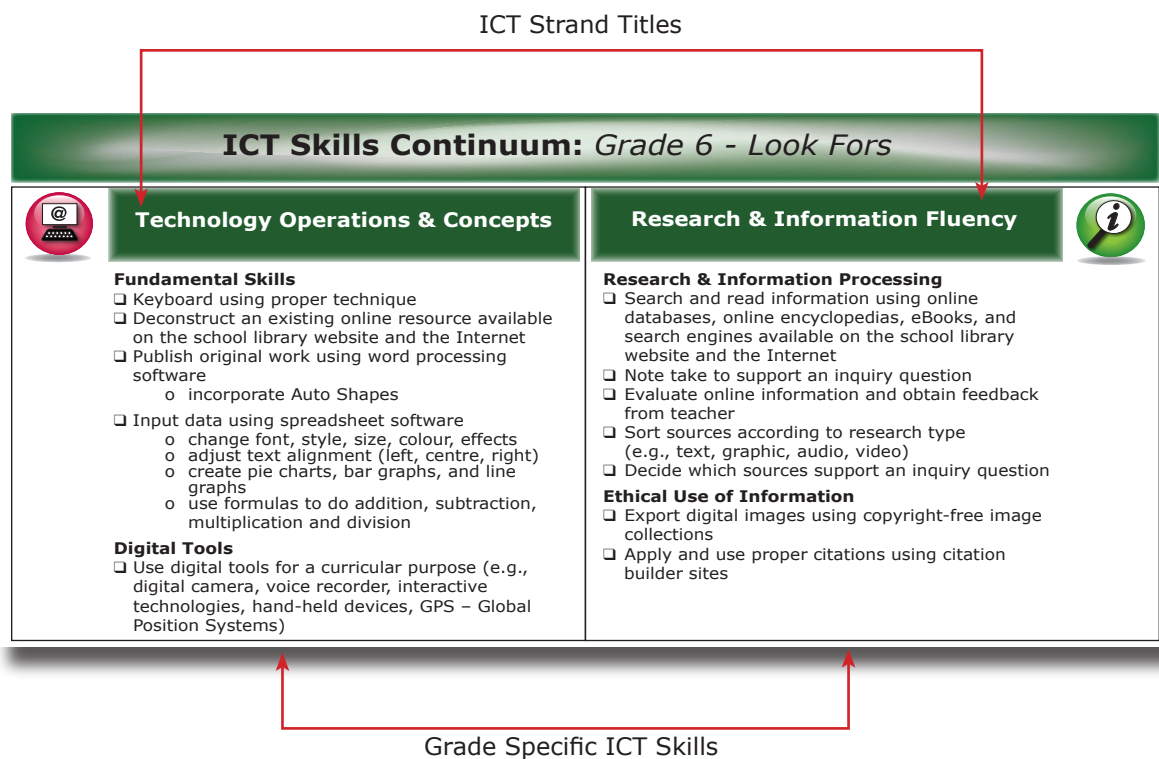
The Professional Learning Guide provides teachers the steps necessary as they begin to learn, plan, teach, and share with ICT.

#### Software

The Software list identifies titles available by OSAPAC - Ontario Software Acquisition Program and Committee, TDSB, or open source. The ICT Standards website, [www.tdsb.on.ca/ictstandards](http://www.tdsb.on.ca/ictstandards), provides the most-recent list along with sites that provide support and resource materials.

### Section 4: ICT Skills Continuum by Grade

This section provides strand skills specific for each grade from Kindergarten to Grade 12. Teachers may choose to use these grade charts as an ICT skills assessment, "Look Fors", and determine an entry point for curriculum and ICT integration specific to a particular class or student.



## Foundation Connections for TDSB ICT Standards

The TDSB's ICT Standards are guided by the ISTE NETS for Students 2007. The following table is a connections summary of the ICT Standards and Bloom's Digital Taxonomy:

TDSB ICT Standards - Strands (Guided by ISTE NETS)	Bloom's Digital Taxonomy
 <p><b>Technology Operations &amp; Concepts</b> Students demonstrate a sound understanding of technology concepts, systems, and operations.</p>	<p>Applying Understanding Remembering</p>
 <p><b>Research &amp; Information Fluency</b> Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.</p>	<p>Evaluating Analysing Applying Understanding Remembering</p>
 <p><b>Critical Thinking &amp; Problem Solving</b> Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.</p>	<p>Creating Evaluating Analysing Applying Understanding Remembering</p>
 <p><b>Communication &amp; Collaboration</b> Students work collaboratively, using digital media and environments, to support individual learning and to contribute to the learning of others.</p>	<p>Creating Evaluating Analysing Applying Understanding Remembering</p>
 <p><b>Digital Citizenship</b> Students understand human, cultural, and societal issues related to technology and practice legal, ethical and safe behaviour.</p>	<p>Creating Evaluating Analysing Applying Understanding Remembering</p>
 <p><b>Creativity &amp; Innovation</b> Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.</p>	<p>Creating Evaluating Analysing Applying Understanding Remembering</p>

## **ICT Standards: *Assessment, Evaluation, and Reporting***

Assessment is used to inform teacher practice and provides an opportunity to offer specific feedback to help students improve their learning. Assessment is the process of gathering and recording information about student work during a specific period of time. The different types of assessment and evaluation are: assessment FOR learning, assessment AS learning, and assessment OF learning. ICT can be incorporated into all areas of assessment and evaluation.

### ***Assessment FOR Learning with ICT - Diagnostic***

At the beginning of a unit or learning period, teachers collect information about what their students already know, or need to know, to be better prepared for the topic of study i.e., readiness. As well, teachers can gather information about interests, learning styles, and learning preferences to fully understand their students' needs. With ICT, teachers can use online-survey tools and Interactive Response Technology (e.g., clickers), to determine students' prior knowledge of a topic, and to determine an entry point for teaching.

### ***Assessment FOR Learning with ICT - Formative***

During the learning process, teachers check for student understanding and readiness and could use ICT for ongoing assessments through interactive learning resources - the Ontario Educational Resource Bank (OERB), online quizzes, simulations (virtual worlds), and tutorials. Assessment provides teachers with an opportunity to offer constructive feedback in order to improve student achievement. To address individual student needs, teachers could digitally notate on student documents and/or provide audio feedback. The integration of ICT, through online forums, can also assist teachers with the assessment of curricular work and of Learning Skills.

Discussion forums in online environments allow teachers to publish immediate and effective feedback to an entire class or individuals. This allows students to correct any misconceptions prior to final evaluations. In an electronic community of learners, students offer feedback on each other's ideas and information as a natural progression of online community knowledge building.

### ***Assessment AS Learning with ICT - Formative***

Throughout the learning process, students monitor their own learning. They set curricular and learning skill goals, engage in learning, and reflect on the feedback from teachers and peers to help determine next steps. Students can maintain electronic learning logs in various formats: tables, blogs, audio and/or video files.

### ***Assessment OF Learning with ICT – Summative/Evaluation***

At the end of a unit or period of study, teachers collect student work based upon The Ontario Curriculum and evaluate according to The Ontario Curriculum's Achievement Chart with the teacher or student-and-teacher developed success criteria. Final student work may be created with technology (e.g., movie, podcast), but under current assessment and evaluation policies (i.e., Growing Success – Assessment, Evaluation, and Reporting in Ontario Schools, First Edition 2010 and The Ontario Curriculum documents), only the overall curricular expectations may be evaluated. ICT skills can be assessed and "Look-Fors" addressed, but ICT skills may not be evaluated unless identified as expectations within The Ontario Curriculum document. For example, in the Productivity Software Strand of the Information and Communication Technology in Business course (BTT), students are required to use word processing software to create common business documents. Because ICT skills are identified as a curriculum expectation here, students' use of word processing software may be evaluated. This would be the same for any course with ICT skills identified as curriculum expectations.

## Evaluation for Reporting and ICT

The Ontario Curriculum outlines the content standards for each grade and subject area, clearly stating what students are expected to know and be able to do. The Achievement Chart represents the performance standard which identifies the level of student achievement in four categories: Knowledge and Understanding, Thinking, Communication, and Application. For further information on Assessment and Evaluation of student achievement, refer to Growing Success – Assessment, Evaluation, and Reporting in Ontario Schools and the introductory section of The Ontario Curriculum documents.

### K-8 Reporting on the ICT Standards


ICT skills can be assessed, but not evaluated and reported as an academic grade. Evaluation of The Ontario Curriculum overall expectations must be done according to a subject area (e.g., The Ontario Curriculum Grades 1-8 Arts, Revised 2009, p. 30). A teacher may choose the specific expectation that will address the overall expectation being evaluated.

Below is an example of how an elementary school might use one of the optional boxes on the second page of the report card to report progress on the ICT standards:

- 1) Select an ICT Experience from the appropriate grade level;

**Curricular Connections: Grade 7**

**Essential Learning: Networking, Collaborating, and Evaluating**



**ICT Experience – Collaboration**

Students will collaborate respectfully and responsibly in an online forum with students from other schools in the local community. They will share original work and build upon and synthesize ideas, incorporating hyperlinks to websites and peer-to-peer postings.








**Examples of Curricular Integration**

- In an online forum, contribute and build upon ideas, theories, and conclusions, on an issue that is affecting humans and their environments, and promote social action to support this issue (*Geography*)
- Communicate online with classes from other schools to develop strategies to counter peer pressure to smoke, drink, and take drugs (*Health and Physical Education*)
- Read information, access links and assignments, download resources, submit curricular work, and participate in group forums in an online learning environment to support the design and construction of a structure (*Science*)

- 2) Choose a range of modifiers to describe the different levels of ICT standard achievement;
- 3) Enter the modifier and experience into the Strengths/Weaknesses/Next Steps field and insert proper names and pronouns. Recommend next steps if space allows.
- 4) Leave the mark column blank.

ICT Standards  <input type="checkbox"/> ESL <input type="checkbox"/> ESD <input type="checkbox"/> IEP			Student A was a respectful and responsible member of our online community this term. She shared her own ideas effectively, built upon and synthesized the ideas of her peers. For a next step, Student A should try to use more evidence from a variety of respected sources to strengthen her arguments.
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## The Ontario Achievement Chart and ICT Integration

Achievement Chart Category	ICT Teaching & Learning Strategies	Possible Resources to Support Student Achievement
<p><b>Knowledge and Understanding</b> Student ability to demonstrate knowledge and understanding of curriculum content, (e.g., facts, terms, concepts, and ideas)</p> <p> Technology Operations &amp; Concepts</p> <p> Research &amp; Information Fluency</p>	<ul style="list-style-type: none"> <li>• Interact with curriculum content in video, audio, and online formats</li> <li>• Read online materials at various levels with assistive resources if needed</li> <li>• Select online tools for knowledge building (e.g., online discussion forums)</li> <li>• Search, read, log, and note take information from a variety of sources to investigate an inquiry question</li> </ul>	<ul style="list-style-type: none"> <li>• School library website for online resources (e.g., databases, encyclopedias, eBooks)</li> <li>• Ontario Educational Resource Bank - OERB</li> <li>• Video sharing sites</li> </ul>
<p><b>Thinking</b> Student ability to plan, process, and use critical thinking skills</p> <p> Critical Thinking &amp; Problem Solving</p>	<ul style="list-style-type: none"> <li>• Use graphic organizers and concept maps to: <ul style="list-style-type: none"> <li>• organize information</li> <li>• analyze and evaluate information and sources</li> <li>• problem solve inquiry based research</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Mind mapping software</li> <li>• Interactive learning resource creation software</li> <li>• OERB – Interactive Learning Resources</li> <li>• Simulation software</li> </ul>
<p><b>Communication</b> Student ability to communicate to different audiences for a variety of purposes with appropriate vocabulary and conventions</p> <p> Communication &amp; Collaboration</p> <p> Digital Citizenship – Online Etiquette</p>	<ul style="list-style-type: none"> <li>• Write with word processing and presentation tools</li> <li>• Use supportive tools: spelling and grammar checkers</li> <li>• Script audio/video communication to support: <ul style="list-style-type: none"> <li>• role playing</li> <li>• interviewing of experts</li> </ul> </li> <li>• Participate respectfully and safely in online forums to support: <ul style="list-style-type: none"> <li>• threaded discussions</li> <li>• team inquiry projects</li> <li>• shared writing and peer editing</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Word processing</li> <li>• Audio recording software</li> <li>• Online forums</li> </ul>
<p><b>Application</b> Student ability to transfer knowledge, thinking and communication into a new context and make connections to various criteria</p> <p> Creativity &amp; Innovation</p> <p> Digital Citizenship - Copyright</p>	<ul style="list-style-type: none"> <li>• Apply knowledge and skills to create final works</li> <li>• Transfer knowledge and skills to design maps, diagrams, drawings, and creations</li> <li>• Make connections to support online Community Activism in accordance with legal and ethical standards of digital citizenship</li> <li>• Seek permission to use digital images, music, and/or video</li> <li>• Select and apply Creative Commons Licensing to original creations</li> </ul>	<ul style="list-style-type: none"> <li>• Movie creation software</li> <li>• Drawing and painting software</li> <li>• Web creation software</li> <li>• Simulation software</li> <li>• Programming software</li> </ul>

View page 66 for Glossary of terms

# ICT Standards: Kindergarten

## Technology Operations & Concepts



Students demonstrate a sound understanding of technology concepts, systems, and operations.

### Fundamental Skills

- Recognize and demonstrate how to access applications on a networked computer

### Digital Tools and Software Applications

- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)

## Research & Information Fluency



Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.

### Research & Information Processing

- Locate and organize information from appropriate and credible primary sources (e.g., interviews, diaries, surveys) and secondary sources (e.g., online encyclopedias, databases available on the school library website)

### Ethical Use of Information

- Use research to develop original drafts and cite sources

## Critical Thinking & Problem Solving



Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

### Project Management

- Adhere to a pictorial project plan to develop a solution or complete a project

### Technology Selection

- Observe and identify appropriate technologies for a specific purpose

### Computer Simulation Participation

- Participate in a digital simulation or game to explore concepts and/or determine outcomes (e.g., OERB interactive learning resources, Lego Crickets)

## Communication & Collaboration



Students work collaboratively, using digital media and environments, to support individual learning and contribute to the learning of others.

### Online Collaboration

- Observe a modelled online environment (e.g., email, online forums, virtual worlds, video/web conferences)

### Online Learning

- Use eLearning to support and extend learning (e.g., learning management system)

## Digital Citizenship



Students understand human, cultural, and societal issues related to technology and practice legal, ethical, and safe behaviour.

### Digital Rights & Responsibilities

- Identify Creative Commons usage and sharing icons

### Digital Etiquette & Safety

- Observe and recognize safe, respectful, and responsible online communication (e.g., email, online forums, social networks)

### Digital Health

- Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, monitor placement, etc.)

### Digital Access

- Understand and recognize the importance of electronic access for all (e.g., assistive technology hardware and software)

## Creativity & Innovation



Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

### Creative Work

- Create original works as a means of personal or group expression (e.g., drawing, painting, audio recording, movie creation software)

### Innovative Work

- Apply existing knowledge to generate new ideas, products, or processes



## Curricular Connections: *Kindergarten*

### Essential Learning: Identifying, Understanding, and Applying



#### ICT Experience – Productivity

Students will demonstrate proper technique while using technology to assist and enhance personal needs for learning.

#### Examples of Curricular Integration

- Access math software on a computer to identify geometric shapes, sequence numbers, etc. (*Math*)
- Explore literacy websites to read and listen to online stories (*Literacy*)
- Capture science experiment results by taking pictures with a digital camera (*Science*)
- Use an interactive whiteboard to investigate members of a local community (*Social Studies*)

### Essential Learning: Contributing, Networking, and Posting



#### ICT Experience – Collaboration

Students will share ideas with learners from other classrooms through email, weblogs, video conferencing, or other electronic means.

#### Examples of Curricular Integration

- Share ideas in classroom discussions that feed an online discussion through email, a blog or a wiki about a shared experience with a class or family pet and generate ideas about its name, care, and favourite food. (*Literacy and Science and Technology*)

### Essential Learning: Searching, Organizing, Contributing, and Creating



#### ICT Experience – Digital Presentation

Students will use the four-stage research model to investigate an inquiry question and create a class digital slideshow to share their learning.

#### Examples of Curricular Integration

- Investigate a topic (e.g., bicycles) through class exploration and share learning in a class slideshow (*Science and Technology*)
- Create a healthy-living Public Service Announcement using presentation software and digital cameras (*Health and Physical Education*)

# ICT Standards: *Grade 1*

## Technology Operations & Concepts



Students demonstrate a sound understanding of technology concepts, systems, and operations.

### Fundamental Skills

- Recognize and demonstrate how to access applications on a networked computer

### Digital Tools and Software Applications

- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)

## Research & Information Fluency



Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.

### Research & Information Processing

- Locate and organize information from appropriate and credible primary sources (e.g., interviews, diaries, surveys) and secondary sources (e.g., online encyclopedias, databases available on the school library website)

### Ethical Use of Information

- Use research to develop original drafts and cite sources

## Critical Thinking & Problem Solving



Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

### Project Management

- Adhere to a pictorial project plan to develop a solution or complete a project

### Technology Selection

- Observe and identify appropriate technologies for a specific purpose

### Computer Simulation Participation

- Participate in a digital simulation or game to explore concepts and/or determine outcomes (e.g., OERB interactive learning resources, Lego Crickets)

## Communication & Collaboration



Students work collaboratively, using digital media and environments, to support individual learning and contribute to the learning of others.

### Online Collaboration

- Observe a modelled online environment (e.g., email, online forums, virtual worlds, video/web conferences)

### Online Learning

- Use eLearning to support and extend learning (e.g., learning management system)

## Digital Citizenship



Students understand human, cultural, and societal issues related to technology and practice legal, ethical, and safe behaviour.

### Digital Rights & Responsibilities

- Identify Creative Commons usage and sharing icons

### Digital Etiquette & Safety

- Observe and recognize safe, respectful, and responsible online communication (e.g., email, online forums, social networks)

### Digital Health

- Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, monitor placement, etc.)

### Digital Access

- Understand and recognize the importance of electronic access for all (e.g., assistive technology hardware and software)

## Creativity & Innovation



Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

### Creative Work

- Create original works as a means of personal or group expression (e.g., drawing, painting, audio recording, movie creation software)

### Innovative Work

- Apply existing knowledge to generate new ideas, products, or processes

## Curricular Connections: Grade 1

### Essential Learning: Identifying, Understanding, and Applying



#### ICT Experience – Productivity

Students will use technology to assist and enhance personal needs for learning.

Grade 1

#### Examples of Curricular Integration

- Select musical clips and respond creatively with draw or paint software (*Music*)
- Explore literacy websites to read and listen to online stories (*Literacy*)
- Capture images of buildings and members of a local community with a digital camera (*Social Studies*)
- Use an interactive whiteboard to identify and extend patterns (*Math*)

### Essential Learning: Contributing, Networking, and Posting



#### ICT Experience – Collaboration

Students will share ideas with learners from other classrooms through email, weblogs, video conferencing, or other electronic means.

#### Examples of Curricular Integration

- Share ideas in classroom discussions that feed an online discussion via a blog or a wiki about art samples and the elements of design (*Visual Arts*)
- Construct a class email to the Principal about rules in the school (*Social Studies*)

### Essential Learning: Searching, Organizing, Creating, and Sharing



#### ICT Experience – Digital Presentation

Students will use the four-stage research model to investigate an inquiry question and create a digital presentation to share their learning.

#### Examples of Curricular Integration

- Create a digital presentation with draw or paint software to illustrate characteristics of plants, animals, and humans (*Science*)
- Create a digital presentation with draw or paint software and include at least three of the elements of design. Include a voice track to explain how the drawings express their feelings (*Visual Arts*)

# ICT Standards: *Grade 2*

## Technology Operations & Concepts



Students demonstrate a sound understanding of technology concepts, systems, and operations.

### Fundamental Skills

- Recognize and demonstrate how to access applications on a networked computer

### Digital Tools and Software Applications

- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)

## Research & Information Fluency



Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.

### Research & Information Processing

- Locate and organize information from appropriate and credible primary sources (e.g., interviews, diaries, surveys) and secondary sources (e.g., online encyclopedias, databases available on the school library website)

### Ethical Use of Information

- Use research to develop original drafts and cite sources

## Critical Thinking & Problem Solving



Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

### Project Management

- Adhere to a pictorial project plan to develop a solution or complete a project

### Technology Selection

- Observe and identify appropriate technologies for a specific purpose

### Computer Simulation Participation

- Participate in a digital simulation or game to explore concepts and/or determine outcomes (e.g., OERB interactive learning resources, Lego Crickets)

## Communication & Collaboration



Students work collaboratively, using digital media and environments, to support individual learning and contribute to the learning of others.

### Online Collaboration

- Observe a modelled online environment (e.g., email, online forums, virtual worlds, video/web conferences)

### Online Learning

- Use eLearning to support and extend learning (e.g., learning management system)

## Digital Citizenship



Students understand human, cultural, and societal issues related to technology and practice legal, ethical, and safe behaviour.

### Digital Rights & Responsibilities

- Identify Creative Commons usage and sharing icons

### Digital Etiquette & Safety

- Observe and recognize safe, respectful, and responsible online communication (e.g., email, online forums, social networks)

### Digital Health

- Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, monitor placement, etc.)

### Digital Access

- Understand and recognize the importance of electronic access for all (e.g., assistive technology hardware and software)

## Creativity & Innovation



Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

### Creative Work

- Create original works as a means of personal or group expression (e.g., drawing, painting, audio recording, movie creation software)

### Innovative Work

- Apply existing knowledge to generate new ideas, products, or processes

## Curricular Connections: Grade 2

### Essential Learning: Identifying, Understanding, and Applying



#### ICT Experience – Productivity

Students will use technology to assist and enhance personal needs for learning.

#### Examples of Curricular Integration

- Use a teacher-created template to create a personal pictograph of daily food intake (*Math and Health and Physical Education*)
- Explore literacy websites to read and listen to online stories (*Literacy*)
- Capture images of simple machines with a digital camera (*Science*)
- Use an interactive whiteboard and online interactive learning resources (OERB) to support the learning of mapping skills (*Social Studies*)

### Essential Learning: Contributing, Networking, and Posting



#### ICT Experience – Collaboration

Students will share ideas with learners from other classrooms through email, weblogs, video conferencing, or other electronic means.

#### Examples of Curricular Integration

- Share ideas in classroom discussions that feed online discussions about air and water in the environment (*Science*) or Family Traditions and Celebrations (*Social Studies*)
- Construct a class email to another school sharing information about books the class is currently reading (*Literacy*)

### Essential Learning: Searching, Organizing, Creating, and Sharing



#### ICT Experience – Digital Presentation

Students will use the four-stage research model to investigate an inquiry question and create a digital presentation with text or audio to share their learning.

#### Examples of Curricular Integration

- Compare the growth and change of two distinct animals and create a digital presentation to highlight the similarities and differences (*Science*)
- Investigate the features of a global community and create a podcast to persuade others to visit (*Social Studies*)

# ICT Standards: *Grade 3*

## Technology Operations & Concepts



Students demonstrate a sound understanding of technology concepts, systems, and operations.

### Fundamental Skills

- Manage content within an operating system and web environment (e.g., documents, links, bookmarks, tags)
- Create content that demonstrates planning, writing, and editing for a particular purpose (e.g., word processing, spreadsheets software)

### Digital Tools

- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)

## Research & Information Fluency



Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.

### Research & Information Processing

- Search, read, and note take information from sources (e.g., online encyclopedias, databases found on the school library website, the Internet)
- Categorize, analyze, and evaluate information from primary sources (e.g., interviews, surveys) and secondary sources (e.g., online encyclopedias, databases found on the school library website)

### Ethical Use of Information

- Use research to develop original drafts and cite sources

## Critical Thinking & Problem Solving



Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

### Project Management

- Adhere to a project plan to develop a solution or complete a project

### Technology Selection

- Observe and identify appropriate technologies for a specific purpose

### Digital Simulation and Gaming

- Participate in a digital simulation or game to explore concepts and/or determine outcomes (e.g., OERB interactive learning resources, Lego Crickets)

## Communication & Collaboration



Students work collaboratively, using digital media and environments, to support individual learning and contribute to the learning of others.

### Online Collaboration

- Participate and collaborate in an online environment (e.g., email, online forums, virtual worlds, video/web conferences)

### Online Learning

- Use eLearning to support and extend learning (e.g., learning management system)

## Digital Citizenship



Students understand human, cultural, and societal issues related to technology and practice legal, ethical, and safe behaviour.

### Digital Rights & Responsibilities

- Understand and recognize the importance of intellectual and creative property in a digital environment

### Digital Etiquette & Safety

- Recognize and demonstrate safe, respectful, and responsible online communication (e.g., email, online forums, social networks)

### Digital Health

- Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, monitor placement, etc.)

### Digital Access

- Understand and recognize the importance of electronic access for all (e.g., assistive technology hardware and software)

## Creativity & Innovation



Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

### Creative Work

- Create original works as a means of personal or group expression (e.g., photo editing, audio recording, movie creation, animation software)

### Innovative Work

- Apply existing knowledge to generate new ideas, products, or processes

## Curricular Connections: Grade 3

### Essential Learning: Organizing and Publishing



#### ICT Experience – Word Processing

Students will demonstrate proper technique and posture when using a keyboard. Using a word processor, students will publish an original text.

#### Examples of Curricular Integration

- Create a poster/pamphlet to advertise early settler/pioneer life (*Social Studies*)
- Capture the growth and change in plants with a digital camera and then import the images into a report explaining the scientific process (*Science*)
- Use interactive whiteboards and resources to support problem solving and capture learning in an electronic journal (*Math*)

### Essential Learning: Analyzing and Evaluating



#### ICT Experience – Spreadsheet

Students will use spreadsheet software to create pie charts of numerical data and record their analysis.

#### Examples of Curricular Integration

- Poll the class on favourite Playday activities, input the data into a spreadsheet, and develop a school Playday plan from analysis (*Math*)
- Graph and analyze data about urban and rural communities and draw conclusions about characteristics of each type of community (*Social Studies*)

### Essential Learning: Deconstructing, Explaining, Analyzing, Applying, and Collaborating



#### ICT Experience – Collaboration

Students will deconstruct and analyze the elements of effective online communication. They will then apply these elements when sharing curriculum-related ideas in a closed online forum, in accordance with legal and ethical standards of digital citizenship.

#### Examples of Curricular Integration

- Explore teacher selected online forums to note the unique features and how online participants reflect, respond, and analyze to communicate feelings, ideas, and understandings in response to a variety of drama works and experiences (*The Arts*)
- Respond to teacher guided questions in an online forum on strong and stable structures and how their design and materials help them perform their load-bearing function (*Science*)
- Email grade 3 students in a rural community to share and compare what life is like in an urban centre (*Social Studies*)
- Read information and download resources on soils in an online learning environment (*Science*)

### Essential Learning: Locating, Comparing, Analyzing, and Creating



#### ICT Experience – Digital Presentation

Students will use the four-stage research model to investigate an inquiry question and produce a digital presentation with narration.

#### Examples of Curricular Integration

- Create a digital slideshow with screen captures of Google Earth's Satellite and/or Map views to support a personal opinion regarding human and environmental interaction in communities (*Social Studies*)
- Create an infomercial on how different types of forces are used in daily life (*Science*)

# ICT Standards: *Grade 4*

## Technology Operations & Concepts



Students demonstrate a sound understanding of technology concepts, systems, and operations.

### Fundamental Skills

- Manage content within an operating system and web environment (e.g., documents, links, bookmarks, tags)
- Create content that demonstrates planning, writing, and editing for a particular purpose (e.g., word processing, spreadsheets software)

### Digital Tools

- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)

## Research & Information Fluency



Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.

### Research & Information Processing

- Search, read, and note take information from sources (e.g., online encyclopedias, databases found on the school library website, the Internet)
- Categorize, analyze, and evaluate information from primary sources (e.g., interviews, surveys) and secondary sources (e.g., online encyclopedias, databases found on the school library website)

### Ethical Use of Information

- Use research to develop original drafts and cite sources

## Critical Thinking & Problem Solving



Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

### Project Management

- Adhere to a project plan to develop a solution or complete a project

### Technology Selection

- Observe and identify appropriate technologies for a specific purpose

### Digital Simulation and Gaming

- Participate in a digital simulation or game to explore concepts and/or determine outcomes (e.g., OERB interactive learning resources, Lego Crickets)

## Communication & Collaboration



Students work collaboratively, using digital media and environments, to support individual learning and contribute to the learning of others.

### Online Collaboration

- Participate and collaborate in an online environment (e.g., email, online forums, virtual worlds, video/web conferences)

### Online Learning

- Use eLearning to support and extend learning (e.g., learning management system)

## Digital Citizenship



Students understand human, cultural, and societal issues related to technology and practice legal, ethical, and safe behaviour.

### Digital Rights & Responsibilities

- Understand and recognize the importance of intellectual and creative property in a digital environment

### Digital Etiquette & Safety

- Recognize and demonstrate safe, respectful, and responsible online communication (e.g., email, online forums, social networks)

### Digital Health

- Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, monitor placement, etc.)

### Digital Access

- Understand and recognize the importance of electronic access for all (e.g., assistive technology hardware and software)

## Creativity & Innovation



Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

### Creative Work

- Create original works as a means of personal or group expression (e.g., photo editing, audio recording, movie creation, animation software)

### Innovative Work

- Apply existing knowledge to generate new ideas, products, or processes



## Curricular Connections: Grade 4

### Essential Learning: Organizing and Publishing



#### ICT Experience – Word Processing

Students will demonstrate proper technique and posture when using a keyboard. Using a word processor, students will incorporate columns, lists, and images to publish an original text with proper citation of resources.

#### Examples of Curricular Integration

- Create a pro-con chart or a school newsletter article that identifies effects of clear cutting on a forest community in preparation for Earth Day (*Social Studies*)
- Create a poster/pamphlet to advertise the benefits of not smoking (*Health and Physical Education*)
- Capture images in the local community to show the effects of human activities on habitats and then import pictures into a report (*Science*)
- Use interactive whiteboards and resources to support fraction exploration and capture learning in an electronic journal (*Math*)

### Essential Learning: Analyzing, Interpreting, and Sharing



#### ICT Experience – Spreadsheet

Students will use spreadsheet software to create pie charts and bar graphs of numerical data, record their analysis, and share their interpretation of the results.

#### Examples of Curricular Integration

- Listen to different styles of Medieval music, then collect, graph, and analyze their peers' Medieval music preferences (*Math and Music*)
- Collect survey information on school related topics such as lunch activities or library book exchange and then input, graph, and analyze the data in order to create an informed school plan (*Math*)

### Essential Learning: Understanding, Analyzing, Collaborating, and Evaluating



#### ICT Experience – Collaboration

Students will analyze information from online environments to build upon and synthesize ideas in accordance with legal and ethical standards of digital citizenship.

#### Examples of Curricular Integration

- Participate in an online forum and respond to questions about video/image/text resources regarding body image and perception of beauty (*Media Literacy*)
- Email students in other provinces to compare and contrast regional characteristics (*Social Studies*)
- Read information, access links and assignments, and download resources on pulleys and gears in an online learning environment (*Science*)

### Essential Learning: Understanding, Analyzing, Evaluating, and Sharing



#### ICT Experience – Digital Presentation

Students will use the four-stage research process to investigate an inquiry question and create a podcast or digital presentation to share their learning in accordance with legal and ethical standards of digital citizenship.

#### Examples of Curricular Integration

- Create a digital presentation to show the impact of pulleys and gears on society and the environment (*Science*)
- Create an audio show or commercial that will showcase the influence of different cultures on Medieval societies (*Social Studies*)
- Create a digital game on the different regions of Canada (*Social Studies*)

# ICT Standards: *Grade 5*

## Technology Operations & Concepts



Students demonstrate a sound understanding of technology concepts, systems, and operations.

### Fundamental Skills

- Manage content within an operating system and web environment (e.g., documents, links, bookmarks, tags)
- Create content that demonstrates planning, writing, and editing for a particular purpose (e.g., word processing, spreadsheets software)

### Digital Tools

- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)

## Research & Information Fluency



Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.

### Research & Information Processing

- Search, read, and note take information from sources (e.g., online encyclopedias, databases found on the school library website, the Internet)
- Categorize, analyze, and evaluate information from primary sources (e.g., interviews, surveys) and secondary sources (e.g., online encyclopedias, databases found on the school library website)

### Ethical Use of Information

- Use research to develop original drafts and cite sources

## Critical Thinking & Problem Solving



Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

### Project Management

- Adhere to a project plan to develop a solution or complete a project

### Technology Selection

- Observe and identify appropriate technologies for a specific purpose

### Digital Simulation and Gaming

- Participate in a digital simulation or game to explore concepts and/or determine outcomes (e.g., OERB interactive learning resources, Lego Crickets)

## Communication & Collaboration



Students work collaboratively, using digital media and environments, to support individual learning and contribute to the learning of others.

### Online Collaboration

- Participate and collaborate in an online environments (e.g., email, online forums, virtual worlds, video/web conferences)

### Online Learning

- Use eLearning to support and extend learning (e.g., learning management system)

## Digital Citizenship



Students understand human, cultural, and societal issues related to technology and practice legal, ethical, and safe behaviour.

### Digital Rights & Responsibilities

- Understand and recognize the importance of intellectual and creative property in a digital environment

### Digital Etiquette & Safety

- Recognize and demonstrate safe, respectful, and responsible online communication (e.g., email, online forums, social networks)

### Digital Health

- Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, monitor placement, etc.)

### Digital Access

- Understand and recognize the importance of electronic access for all (e.g., assistive technology hardware and software)

## Creativity & Innovation



Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

### Creative Work

- Create original works as a means of personal or group expression (e.g., photo editing, audio recording, movie creation, animation software)

### Innovative Work

- Apply existing knowledge to generate new ideas, products, or processes

## Curricular Connections: Grade 5

### Essential Learning: Organizing, Categorizing, and Publishing



#### ICT Experience – Word Processing

Students will properly use a word processor incorporating word art and images to publish original texts and cite resources correctly.

#### Examples of Curricular Integration

- Describe the effects of various external or internal forces acting on a structure in a newspaper article (*Science*)
- Create a poster/pamphlet to advertise the benefits of healthy eating (*Health and Physical Education*)
- Capture images of government buildings and import them into a report identifying the different levels of government in the community (*Social Studies*)
- Use digital thermometers and interactive learning resources to enhance and extend weather exploration reports and capture learning in an electronic journal (*Science*)

### Essential Learning: Analyzing, Evaluating, and Producing



#### ICT Experience – Spreadsheet

Students will use spreadsheet software to create pie charts, bar and/or line graphs of numerical data, incorporate formulas for addition and subtraction, and share their interpretation of the results.

#### Examples of Curricular Integration

- Compare nutritional information of beverages and graph ingredient amounts; create a list of appropriate beverages to be sold in schools (*Health and Physical Education and Math*)
- Create a budget proposal for an upcoming school event and use formula calculations to demonstrate and explain the results (*Math*)

### Essential Learning: Collaborating, Analyzing, and Synthesizing



#### ICT Experience – Collaboration

Students will collaborate in an online forum to share original work, build upon and synthesize ideas; incorporating hyperlinks to websites, in accordance with legal and ethical standards of digital citizenship.

#### Examples of Curricular Integration

- Contribute and build upon ideas, theories, and conclusions, in an online forum to show how a music genre/style, and/or artist/composer influenced society (*Music*)
- Communicate online with a politician requesting information and clarification about a particular issue (*Social Studies*)
- Read information, access links and assignments, download resources, and submit curricular work on the human body in an online learning environment (*Science*)

### Essential Learning: Locating, Analyzing, Designing, and Creating



#### ICT Experience – Digital Presentation

Students will use the four-stage research process to investigate an inquiry question and create a podcast or digital presentation to share their learning in accordance with legal and ethical standards of digital citizenship. Afterwards, students will observe the upload of their creations to a media streaming site or other online forum.

#### Examples of Curricular Integration

- Create a mock election video advertisement highlighting who they are and what they would do if elected (*Social Studies*)
- Develop an infomercial or radio show on getting the recommended one hour a week of sunlight, including safety concerns about sun exposure and alternate ways to get vitamin D (*Health and Physical Education*)
- Create a digital presentation with animation and/or claymation to advertise an ancient civilization's political, economic, and social organization (*Social Studies*)
- Create an interactive device that can be used to conserve energy (*Science*)

# ICT Standards: *Grade 6*

## Technology Operations & Concepts



Students demonstrate a sound understanding of technology concepts, systems, and operations.

### Fundamental Skills

- Manage content within an operating system and web environment (e.g., documents, links, bookmarks, tags)
- Create content that demonstrates planning, writing, and editing for a particular purpose (e.g., word processing, spreadsheets, databases software)

### Digital Tools

- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, hand-held devices, GPS – Global Position Systems)

## Research & Information Fluency



Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.

### Research & Information Processing

- Search, read, and note take information from a variety of sources (e.g., online encyclopedias, databases found on the school library website, and the Internet)
- Categorize, analyze, and evaluate information from primary sources (e.g., interviews, surveys) and secondary sources (e.g., online encyclopedias, databases found on the school library website)

### Ethical Use of Information

- Use research to develop original drafts and cite sources

## Critical Thinking & Problem Solving



Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

### Project Management

- Plan and manage activities to develop a solution or complete a project

### Technology Selection

- Select appropriate technologies for a specific purpose

### Digital Simulation and Gaming

- Participate in a digital simulation or game to explore concepts and/or determine outcomes (e.g., OERB interactive learning resources, Lego Crickets, robotics)

## Communication & Collaboration



Students work collaboratively, using digital media and environments, to support individual learning and contribute to the learning of others.

### Online Collaboration

- Create, participate, and collaborate in an online environment (e.g., email, online forums, virtual worlds, video/web conferences)

### Online Learning

- Use eLearning to support and extend learning (e.g., learning management system)

## Digital Citizenship



Students understand human, cultural, and societal issues related to technology and practice legal, ethical, and safe behaviour.

### Digital Rights & Responsibilities

- Understand and recognize the importance of intellectual and creative property in a digital environment

### Digital Etiquette & Safety

- Recognize and demonstrate safe, respectful, and responsible online communication (e.g., email, online forums, social networks)

### Digital Health

- Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, monitor placement, etc.)

### Digital Access

- Understand and recognize the importance of electronic access for all (e.g., assistive technology hardware and software)

## Creativity & Innovation



Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

### Creative Work

- Create original works as a means of personal or group expression (e.g., photo editing, audio recording, movie creation, animation software)

### Innovative Work

- Apply existing knowledge to generate new ideas, products, or processes

## Curricular Connections: Grade 6

### Essential Learning: Organizing, Categorizing, and Publishing



#### ICT Experience – Word Processing

Students will properly use a word processor incorporating auto shapes and images to publish original texts and cite resources correctly.

#### Examples of Curricular Integration

- Create a flyer or newsletter to entice Europeans to come and settle in North America in the 16th century (*Social Studies*)
- Generate survey questions, graph data, and present the results on class favourite music genres in a report (*Music and Math*)
- Capture digital images of sources of electricity and import them into a report (*Science*)
- Use Google Earth images to recreate the navigation routes of European explorers and export screen captures into a report with proper citations (*Social Studies*)

### Essential Learning: Analyzing, Explaining, and Producing



#### ICT Experience – Spreadsheet

Students will graph data and incorporate formulas for addition, subtraction, multiplication, and division calculations in a spreadsheet application. Students will then analyze the data and present their conclusions in a report.

#### Examples of Curricular Integration

- Conduct a class survey on computer and video gaming use, graph the data, present analysis and conclusions (*Math*)
- Research and analyze TDSBweb’s Energy data and write a report including graphs, data, analysis and conclusions, justifications and questions on how to minimize the use of energy in the TDSB (*Science and Math*)

### Essential Learning: Collaborating, Analyzing, Synthesizing, and Posting



#### ICT Experience – Collaboration

Students will communicate online and collaborate in a class forum to share original work and to build upon and synthesize ideas, incorporating hyperlinks to websites and peer-to-peer postings. They will be expected to maintain the legal and ethical standards of digital citizenship.

#### Examples of Curricular Integration

- View an online video clip (e.g., Dove’s “Evolution” video found at: [http://www.dove.ca/en#/features/videos/video\\_gallery.aspx\[cp-documentid=9150778\]/](http://www.dove.ca/en#/features/videos/video_gallery.aspx[cp-documentid=9150778]/)), then contribute and build upon ideas, theories, and conclusions related to concepts of body image and self-esteem (*Health and Physical Education*)
- Communicate in online forums with Canadian astronauts to discuss space exploration and Canadian contribution (*Science*)
- Read information, access links and assignments, download resources, and submit curricular work on drama and dance in an online learning environment (*Drama and Dance*)

### Essential Learning: Searching, Analyzing, Designing, Creating, and Sharing



#### ICT Experience – Digital Presentation

Students will use the four-stage research process to investigate an inquiry question and create a podcast or digital presentation to share their learning in accordance with legal and ethical standards of digital citizenship. Afterwards, students will observe the upload of their creations to a media streaming site or other online forum.

#### Examples of Curricular Integration

- Present a newscast, talk show, or debate to demonstrate different positions on why Canadian companies should or should not manufacture goods outside of Canada or North America (*Social Studies*)
- Create a Public Service Announcement on the influences, legalities, and alternatives to substance use and abuse (*Health and Physical Education*)
- Create a digital photo montage on how human choices have an impact on biodiversity (*Visual Arts and Science*)
- Create a digital game on the impact of space exploration on society and the environment with an original soundtrack that enhances the game’s appeal (*Music and Science*)

# ICT Standards: *Grade 7*

## Technology Operations & Concepts



Students demonstrate a sound understanding of technology concepts, systems, and operations.

### Fundamental Skills

- Manage content within an operating system and web environment (e.g., documents, links, bookmarks, tags)
- Create content that demonstrates planning, writing, and editing for a particular purpose (e.g., word processing, spreadsheets, databases software)

### Digital Tools

- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, hand-held devices, GPS – Global Position Systems)

## Research & Information Fluency



Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.

### Research & Information Processing

- Search, read, and note take information from a variety of sources (e.g., online encyclopedias, databases found on the school library website, and the Internet)
- Categorize, analyze, and evaluate information from primary sources (e.g., interviews, surveys) and secondary sources (e.g., online encyclopedias, databases found on the school library website)

### Ethical Use of Information

- Use research to develop original drafts and cite sources

## Critical Thinking & Problem Solving



Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

### Project Management

- Plan and manage activities to develop a solution or complete a project

### Technology Selection

- Select appropriate technologies for a specific purpose

### Digital Simulation and Gaming

- Participate in a digital simulation or game to explore concepts and/or determine outcomes (e.g., OERB interactive learning resources, Lego Crickets, robotics)

## Communication & Collaboration



Students work collaboratively, using digital media and environments, to support individual learning and contribute to the learning of others.

### Online Collaboration

- Create, participate, and collaborate in an online environment (e.g., email, online forums, virtual worlds, video/web conferences)

### Online Learning

- Use eLearning to support and extend learning (e.g., learning management system)

## Digital Citizenship



Students understand human, cultural, and societal issues related to technology and practice legal, ethical, and safe behaviour.

### Digital Rights & Responsibilities

- Understand and recognize the importance of intellectual and creative property in a digital environment

### Digital Etiquette & Safety

- Recognize and demonstrate safe, respectful, and responsible online communication (e.g., email, online forums, social networks)

### Digital Health

- Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, monitor placement, etc.)

### Digital Access

- Understand and recognize the importance of electronic access for all (e.g., assistive technology hardware and software)

## Creativity & Innovation



Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

### Creative Work

- Create original works as a means of personal or group expression (e.g., photo editing, audio recording, movie creation, animation software)

### Innovative Work

- Apply existing knowledge to generate new ideas, products, or processes

## Curricular Connections: Grade 7

### Essential Learning: Retrieving, Analyzing, Evaluating, and Publishing



#### ICT Experience – Word Processing

Students will use digital probes, sensors, handheld devices, or GPS's (Global Positioning Systems) to collect and analyze data. Students will properly word process report results for content-related problems incorporating auto shapes, tables, and images to publish original texts.

#### Examples of Curricular Integration

- Create a brochure to promote the local community, incorporating maps with GPS coordinates and images (*Visual Arts and Geography*)
- Create a report on how heat changes substances incorporating images and data from digital thermometers (*Science*)
- Apply transformations to create and analyze designs and use textboxes to describe the relationship between the coordinates of a quadrilateral when reflected along the y-axis and x-axis of the Cartesian graph (*Math*)

### Essential Learning: Organizing and Classifying



#### ICT Experience – Database

Students will use databases to organize information for a curricular purpose.

#### Examples of Curricular Integration

- Construct a class database of research pertaining to various roles in New France (e.g., nuns, farmers, merchants) and/or figures (e.g., Laura Secord, Isaac Brock, Tecumseh) to determine how these people affected social change (*History*)
- Develop an independent reading database with a summary and review of texts that can be shared with classmates (*Language*)

### Essential Learning: Networking, Collaborating, and Evaluating



#### ICT Experience – Collaboration

Students will collaborate respectfully and responsibly in an online forum with students from other schools in the local community. They will share original work and build upon and synthesize ideas, incorporating hyperlinks to websites and peer-to-peer postings.

#### Examples of Curricular Integration

- In an online forum, contribute and build upon ideas, theories, and conclusions, on an issue that is affecting humans and their environments, and promote social action to support this issue (*Geography*)
- Communicate online with classes from other schools to develop strategies to counter peer pressure to smoke, drink, and take drugs (*Health and Physical Education*)
- Read information, access links and assignments, download resources, submit curricular work, and participate in group forums in an online learning environment to support the design and construction of a structure (*Science*)

### Essential Learning: Searching, Analyzing, Evaluating, Creating, and Sharing



#### ICT Experience – Digital Presentation

Students will use the four-stage research process to investigate an inquiry question and create a podcast or digital presentation to share their learning. They will indicate usage rights with Creative Commons license icons/tools. Afterwards, students will observe the upload of their creations to a media streaming site or other online forum.

#### Examples of Curricular Integration

- Create a digital presentation as part of a campaign to influence change on an environmental concern (*Science*)
- Create digital art using various techniques such as blurring, cloning, cropping, distortion, layering, rotation, and selection to illustrate the conflict and change in Upper and Lower Canada and the Maritimes in the 1820's and 1830's (*Visual Art and History*)
- Create a public service announcement on healthy eating with an original soundtrack to enhance the message (*Music and Health and Physical Education*)
- Design and produce a series of "Historica Minutes" in relation to the War of 1812 and its impact on the development of Canada (*History*)

# ICT Standards: *Grade 8*

## Technology Operations & Concepts



Students demonstrate a sound understanding of technology concepts, systems, and operations.

### Fundamental Skills

- Manage content within an operating system and web environment (e.g., documents, links, bookmarks, tags)
- Create content that demonstrates planning, writing, and editing for a particular purpose (e.g., word processing, spreadsheets, databases software)

### Digital Tools

- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, hand-held devices, GPS – Global Position Systems)

## Research & Information Fluency



Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.

### Research & Information Processing

- Search, read, and note take information from a variety of sources (e.g., online encyclopedias, databases found on the school library website, and the Internet)
- Categorize, analyze, and evaluate information from primary sources (e.g., interviews, surveys) and secondary sources (e.g., online encyclopedias, databases found on the school library website)

### Ethical Use of Information

- Use research to develop original drafts and cite sources

## Critical Thinking & Problem Solving



Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

### Project Management

- Plan and manage activities to develop a solution or complete a project

### Technology Selection

- Select appropriate technologies for a specific purpose

### Digital Simulation and Gaming

- Participate in a digital simulation or game to explore concepts and/or determine outcomes (e.g., OERB interactive learning resources, Lego Crickets, robotics)

## Communication & Collaboration



Students work collaboratively, using digital media and environments, to support individual learning and contribute to the learning of others.

### Online Collaboration

- Create, participate, and collaborate in an online environment (e.g., email, online forums, virtual worlds, video/web conferences)

### Online Learning

- Use eLearning to support and extend learning (e.g., learning management system)

## Digital Citizenship



Students understand human, cultural, and societal issues related to technology and practice legal, ethical, and safe behaviour.

### Digital Rights & Responsibilities

- Understand and recognize the importance of intellectual and creative property in a digital environment

### Digital Etiquette & Safety

- Recognize and demonstrate safe, respectful, and responsible online communication (e.g., email, online forums, social networks)

### Digital Health

- Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, monitor placement, etc.)

### Digital Access

- Understand and recognize the importance of electronic access for all (e.g., assistive technology hardware and software)

## Creativity & Innovation



Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

### Creative Work

- Create original works as a means of personal or group expression (e.g., photo editing, audio recording, movie creation, animation software)

### Innovative Work

- Apply existing knowledge to generate new ideas, products, or processes



## Curricular Connections: Grade 8

### Essential Learning: Organizing, Classifying, and Producing



#### ICT Experience – Database and Word Processing

Students will use databases to organize information and select data for a particular purpose. Students will then analyze the data and draw conclusions in a word-processed document.

#### Examples of Curricular Integration

- Create a database of examples of different advertising techniques, then create a poster incorporating at least one of these techniques (*Media Literacy*)
- Populate a database with local support groups and community organizations that provide information on health and well-being, then create a brochure on one of the groups to share with peers (*Health and Physical Education*)

### Essential Learning: Networking, Hypothesizing, Evaluating, and Posting



#### ICT Experience – Collaboration

Students will collaborate respectfully and responsibly in an online forum with students from other districts/countries to share original work and build upon and synthesize ideas. They will be required to incorporate hyperlinks to websites and peer-to-peer postings.

#### Examples of Curricular Integration

- Discuss with students in an online forum examples of unhealthy behaviour (e.g., drinking and driving) and provide strategies to access assistance (*Health and Physical Education*)
- Communicate with students from various regions of Canada on their viewpoints about Confederation and the impact it has had on the country (*Social Studies*)
- Collaborate with students in different countries on ways to reduce the impact of human activities and technologies on the sustainability of water resources (*Science*)
- Read information, access links and assignments, download resources, submit curricular work, and participate in group forums in an online learning environment (*Cross-Curricular*)

### Essential Learning: Evaluating, Reflecting, and Creating



#### ICT Experience - Creative Work

Students will build and maintain an ePortfolio, a digital repository of artifacts and self-reflections of their learning. Furthermore, students will apply Creative Commons licensing to each artifact.

#### Examples of Curricular Integration

- Create a reflective learning journal in a unit of study (*Cross-Curricular*)
- Create an electronic response journal/portfolio to demonstrate an understanding of the water filtration process and the Ontario Drinking Water Standards (*Science*)

### Essential Learning: Searching, Evaluating, and Creating



#### ICT Experience - Digital Presentation

Students will use the four-stage research process to investigate an inquiry question and create a podcast or digital presentation to share their learning and indicate usage rights with Creative Commons license icons/tools. With teacher approval and moderation, students will observe the upload of their creations to a media streaming site or other online forum.

#### Examples of Curricular Integration

- Research the migration of an ancestor or a famous Canadian and explore the effects of migration on Canadian culture and summarize in a short documentary (*Geography*)
- Create a short video or an animated image sequence to develop a feeling of suspense, speed or passage of time, to reflect Canada's changing society (*Visual Arts and History*)
- Record a podcast on stress and how to deal with it in a positive manner (*Health and Physical Education*)
- Design and create a digital game on the functions and processes of plant and animal cells (*Science*)

# ICT Standards: *Grade 9*

## Technology Operations & Concepts



Students demonstrate a sound understanding of technology concepts, systems, and operations.

### Fundamental Skills

- Manage content within an operating system and web environment
- Create content that demonstrates planning, writing, and editing for a particular purpose (e.g., word processing, spreadsheets, databases software, online forums)

### Digital Tools and Software Applications

- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices, GPS – Global Position Systems)

## Research & Information Fluency



Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.

### Research & Information Processing

- Search, read, log, and note take information from a variety of sources (e.g., online encyclopedias, databases, eBooks available on the school library website, the Internet)
- Categorize, analyze, and evaluate information from primary sources (e.g., interviews, surveys) and secondary sources (e.g., online encyclopedias, databases found on the school library website)

### Ethical Use of Information

- Use research to develop original drafts and cite sources

## Critical Thinking & Problem Solving



Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

### Project Management

- Plan and manage activities to develop a solution or complete a project

### Technology Selection

- Select and combine appropriate technologies for a specific purpose

### Digital Simulation and Gaming

- Participate in a digital simulation or game to explore concepts and/or determine outcomes (e.g., OERB interactive learning resources, robotics, virtual worlds)

## Communication & Collaboration



Students work collaboratively, using digital media and environments, to support individual learning and contribute to the learning of others.

### Online Collaboration

- Create, lead, participate, and collaborate in an online environment to support and extend learning (e.g., email, online forums, RSS feeds, virtual worlds, video web conferences)

### Online Learning

- Use eLearning to support and extend learning (e.g., learning management system)

## Digital Citizenship



Students understand human, cultural, and societal issues related to technology and practice legal, ethical, and safe behaviour.

### Digital Rights & Responsibilities

- Understand and recognize the importance of intellectual and creative property in a digital environment

### Digital Etiquette & Safety

- Understand and demonstrate safe, respectful, and responsible online communication (e.g., email, online forums, social networks, eCommerce)

### Digital Health

- Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, monitor placement, etc.)

### Digital Access

- Understand and recognize the importance of electronic access for all (e.g., assistive technology hardware and software)

## Creativity & Innovation



Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

### Creative Work

- Create original works as a means of personal or group expression (e.g., photo editing, audio recording, movie creation, animation software)

### Innovative Work

- Apply existing knowledge to generate new ideas, products, or processes

## Curricular Connections: *Grade 9*

### Essential Learning: Searching, Evaluating, Applying, and Producing



#### ICT Experience - Productivity

Students will create original work (e.g., essay, journal entry, letter, article, documentary, report, experiment, manual) to convey curriculum content for a particular audience.

#### Elements of ICT Experience

- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Produce original work (e.g., word processing, spreadsheet, database software, online forums)

#### Examples of Curricular Integration

Demonstrate an understanding of concepts such as:

- Greek comedy
- Art forms
- Energy use in Canada

Identify and explain:

- Exponent rules
- Canada's participation in the World Health Organization
- Family, peer, and media influences on food choices

Produce a report about concerns that affect a situation or system such as:

- Resource use in Canada
- Technological developments
- Wilderness protection

### Essential Learning: Networking and Collaborating



#### ICT Experience - Collaboration

Students will participate in an online forum to support knowledge building in preparation for demonstration of learning.

#### Elements of ICT Experience

- Collaborate in an online forum in order to discuss curriculum content and support peer learning (e.g., homework help, course notes, shared research)
- Network with others locally and globally through safe, responsible, and respectful electronic communications
- Read information (e.g., calendars, news items, curricular content, grades)
- Navigate the environment
- Download or link curricular materials
- Submit curricular work

#### Examples of Curricular Integration

Support peer learning by providing:

- Homework help
- Course notes
- Opportunities to share research

Authentic Problem or Problem of Understanding:

- Safety principles of a dance environment
- Workplace forgery/theft
- Teamwork for group consensus

## Essential Learning: Searching, Organizing, Applying, Analyzing, and Creating



### ICT Experience – Digital Presentation

Students will gather and organize information from a primary source (e.g., surveys, interviews) and form conclusions in a digital presentation.

#### Elements of ICT Experience

- Perform information searches using teacher/librarian selected online resources available on the school library website, the Internet, and other primary sources
- Manage project files using folders and appropriate naming conventions
- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Apply and use proper citations using citation builder sites
- Apply Creative Commons licensing to original creations
- Create a podcast, digital presentation, ePortfolio, or webpage (e.g., presentation, painting, drawing, movie creation, photo editing, audio recording, web creation software)

#### Examples of Curricular Integration

Design and conduct a survey and draw conclusions on topics such as:

- Study skills
- Health-related fitness programs

Interview human resources, describe potential careers, and relay the educational connections in fields such as:

- Theatre
- Health food retailer
- Library

Communicate expert viewpoints, summarize and form conclusions on topics such as:

- Employer-union agreements
- Computer Acceptable Use Policies
- Substance abuse

## Essential Learning: Searching, Designing, Managing, Mashing, and Inventing



### ICT Experience – Innovative Work

Students will research, design and create their own digital work of art or simulation for a particular purpose and audience.

#### Elements of ICT Experience

- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices, GPS – Global Position Systems)
- Design and organize project duties and timelines and share with an instructor
- Mash digital images using photo editing software in accordance with legal and ethical standards of digital citizenship
- Manage project files using folders and appropriate naming conventions
- Create or manipulate digital music in accordance with legal and ethical standards of digital citizenship using music creation software
- Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds, music creation)
- Invent a digital learning resource or simulation such as a game, picture book, adventure choice, terminology rolodex (e.g., presentation, animation, simulation creation, mind mapping, programming software)

#### Examples of Curricular Integration

A list of possible themes and topics is provided below:

- Artwork
  - response to supply & demand
  - Canadian citizenship
- Simulation or Animated Model
  - problem solving for a financial purchase
  - land use predictions
- Music to accompany a display that illustrates a change in time
  - transportation systems
  - agricultural use of chemicals
- Collection of photos to represent
  - stylist dance elements
  - business cultural differences
  - sexuality stages
  - workplace hazards

# ICT Standards: *Grade 10*

## Technology Operations & Concepts



Students demonstrate a sound understanding of technology concepts, systems, and operations.

### Fundamental Skills

- Manage content within an operating system and web environment
- Create content that demonstrates planning, writing, and editing for a particular purpose (e.g., word processing, spreadsheets, databases software, online forums)

### Digital Tools and Software Applications

- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices, GPS – Global Position Systems)

## Research & Information Fluency



Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.

### Research & Information Processing

- Search, read, log, and note take information from a variety of sources (e.g., online encyclopedias, databases, eBooks available on the school library website, the Internet)
- Categorize, analyze, and evaluate information from primary sources (e.g., interviews, surveys) and secondary sources (e.g., online encyclopedias, databases found on the school library website)

### Ethical Use of Information

- Use research to develop original drafts and cite sources

## Critical Thinking & Problem Solving



Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

### Project Management

- Plan and manage activities to develop a solution or complete a project

### Technology Selection

- Select and combine appropriate technologies for a specific purpose

### Digital Simulation and Gaming

- Participate in a digital simulation or game to explore concepts and/or determine outcomes (e.g., OERB interactive learning resources, robotics, virtual worlds)

## Communication & Collaboration



Students work collaboratively, using digital media and environments, to support individual learning and contribute to the learning of others.

### Online Collaboration

- Create, lead, participate, and collaborate in an online environment to support and extend learning (e.g., email, online forums, RSS feeds, virtual worlds, video web conferences)

### Online Learning

- Use eLearning to support and extend learning (e.g., learning management system)

## Digital Citizenship



Students understand human, cultural, and societal issues related to technology and practice legal, ethical, and safe behaviour.

### Digital Rights & Responsibilities

- Understand and recognize the importance of intellectual and creative property in a digital environment

### Digital Etiquette & Safety

- Understand and demonstrate safe, respectful, and responsible online communication (e.g., email, online forums, social networks, eCommerce)

### Digital Health

- Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, monitor placement, etc.)

### Digital Access

- Understand and recognize the importance of electronic access for all (e.g., assistive technology hardware and software)

## Creativity & Innovation



Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

### Creative Work

- Create original works as a means of personal or group expression (e.g., photo editing, audio recording, movie creation, animation software)

### Innovative Work

- Apply existing knowledge to generate new ideas, products, or processes

## Curricular Connections: *Grade 10*

### Essential Learning: Searching, Evaluating, Applying, and Producing



#### ICT Experience - Productivity

Students will research and produce original work (e.g., essay, journal entry, letter, article, documentary, report, experiment, manual) for a particular audience or curricular purpose (e.g., retell, inform, explain, persuade, describe, compare, predict, direct, connect, resolve).

#### Elements of ICT Experience

- Perform information searches using online databases, encyclopedias, search engines, and eBooks available on the school library website, the Internet, and other primary sources
- Evaluate the validity of online information and share with a partner
- Create an electronic log for search strategies and bibliographic information (e.g., word processing, spreadsheet, database software, online forums)
- Edit using text or audio comments (e.g., commenting, track changes, voice recording)
- Apply and use proper citations using citation builder sites
- Produce original work (e.g., word processing, spreadsheet, database software, online forums)

#### Examples of Curricular Integration

Demonstrate an understanding of concepts such as:

- The design process
- Properties of light
- Computer ethics

Identify and explain:

- Relation of process and product
- Hierarchical organization of cells
- Support systems in construction

### Essential Learning: Networking, Collaborating, Synthesizing, and Posting



#### ICT Experience - Collaboration

Students will collaborate with peers outside their community in an online forum to solve a problem and post conclusions.

#### Elements of ICT Experience

- Collaborate to explain, interpret, hypothesize, and synthesize to determine a solution to an authentic problem
- Network with others locally and globally through safe, responsible, and respectful electronic communications
- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Read information (e.g., calendars, news items, curricular content, grades)
- Navigate the environment
- Download or link curricular materials
- Submit curricular work

#### Examples of Curricular Integration

- Invention and innovation in entrepreneurship
- Natural and human factors that influence climate change
- Personal finances
- Canadian economic and social changes since 1914
- Cooking methods
- Health and safety standards in relation to health and tourism
- Home computer networking

## Essential Learning: Retrieving, Understanding, Organizing, Applying, and Creating



### ICT Experience – Digital Presentation

Students will interview experts in a related field and create an audio or video presentation.

#### Elements of ICT Experience

- Perform information searches using online databases, encyclopedias, search engines, and eBooks available on the school library website, the Internet, and other primary sources
- Understand and demonstrate the importance of intellectual property in a digital environment and seek permission to use digital images, music, and/or video
- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Apply and use proper citations using citation builder sites
- Apply Creative Commons licensing to original creations
- Create a podcast, digital presentation, ePortfolio, or webpage (e.g., presentation, painting and drawing, movie creation, photo editing, audio recording, web creation software)

#### Examples of Curricular Integration

Learn about curriculum-related careers by interviewing people such as:

- Canadian entrepreneurs
- Builders
- Financial advisers

Communicate expert viewpoints, summarize and form conclusions on topic such as:

- Canada's War involvement
- Technological advancements

## Essential Learning: Searching, Retrieving, Managing, Organizing, and Creating



### ICT Experience – Creative Work

Students will research, design and create an ePortfolio for a particular purpose – growth, achievement, competence, or celebration.

#### Elements of ICT Experience

- Perform information searches using online databases, encyclopedias, search engines, and eBooks available on the school library website, the Internet, and other primary sources
- Locate and organize personal resources (e.g., folders, links)
- Manage project files using folders and appropriate naming conventions
- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Apply Creative Commons licensing to original creations
- Create a podcast, digital presentation, ePortfolio, or webpage (e.g., presentation, painting and drawing, movie creation, photo editing, audio recording, web creation software)

#### Examples of Curricular Integration

In the ePortfolio, students may reflect on their:

- Achievements and successes
- Characteristics and skills
- Curricular and extra-curricular experiences
- Courses and personal skills for post-secondary connections
- Courses and career preparation

# ICT Standards: *Grade 11*

## Technology Operations & Concepts



Students demonstrate a sound understanding of technology concepts, systems, and operations.

### Fundamental Skills

- Manage content within an operating system and web environment
- Create content that demonstrates planning, writing, and editing for a particular purpose (e.g., word processing, spreadsheets, databases software, online forums)

### Digital Tools and Software Applications

- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices, GPS – Global Position Systems)

## Research & Information Fluency



Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.

### Research & Information Processing

- Search, read, log, and note take information from a variety of sources (e.g., online encyclopedias, databases, eBooks available on the school library website, the Internet)
- Categorize, analyze, and evaluate information from primary sources (e.g., interviews, surveys) and secondary sources (e.g., online encyclopedias, databases found on the school library website)

### Ethical Use of Information

- Use research to develop original drafts and cite sources

## Critical Thinking & Problem Solving



Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

### Project Management

- Plan and manage activities to develop a solution or complete a project

### Technology Selection

- Select and combine appropriate technologies for a specific purpose

### Digital Simulation and Gaming

- Participate in a digital simulation or game to explore concepts and/or determine outcomes (e.g., OERB interactive learning resources, robotics, virtual worlds)

## Communication & Collaboration



Students work collaboratively, using digital media and environments, to support individual learning and contribute to the learning of others.

### Online Collaboration

- Create, lead, participate, and collaborate in an online environment to support and extend learning (e.g., email, online forums, RSS feeds, virtual worlds, video web conferences)

### Online Learning

- Use eLearning to support and extend learning (e.g., learning management system)

## Digital Citizenship



Students understand human, cultural, and societal issues related to technology and practice legal, ethical, and safe behaviour.

### Digital Rights & Responsibilities

- Understand and recognize the importance of intellectual and creative property in a digital environment

### Digital Etiquette & Safety

- Understand and demonstrate safe, respectful, and responsible online communication (e.g., email, online forums, social networks, eCommerce)

### Digital Health

- Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, monitor placement, etc.)

### Digital Access

- Understand and recognize the importance of electronic access for all (e.g., assistive technology hardware and software)

## Creativity & Innovation



Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

### Creative Work

- Create original works as a means of personal or group expression (e.g., photo editing, audio recording, movie creation, animation software)

### Innovative Work

- Apply existing knowledge to generate new ideas, products, or processes



# Curricular Connections: *Grade 11*

## Essential Learning: Organizing, Selecting, Applying, and Producing



### ICT Experience - Productivity

Students will select technologies to produce original work (e.g., essay, journal entry, letter, article, documentary, report, experiment, manual) with visuals that support the message for a particular audience or purpose.

#### Elements of ICT Experience

- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Select and combine appropriate technologies for a specific purpose
- Understand and demonstrate the importance of intellectual property in a digital environment and seek permission to use digital images, music, and/or video creations
- Apply Creative Commons licensing to original
- Produce original work (e.g., word processing, spreadsheet, database software, online forums)

#### Examples of Curricular Integration

Demonstrate an understanding of concepts such as:

- The theory of evolution
- Ethics in accounting practice
- Child development theories

Identify and explain:

- Principles of taxonomy and phylogeny
- Business venture plan
- Equivalence relation to simplification of expressions

Produce a research report, essay, or newspaper article for a particular audience on topics such as:

- Famous Canadian role model for teenagers
- Use of plants in Canadian society

## Essential Learning: Networking, Collaborating, Synthesizing, Creating, and Uploading



### ICT Experience - Collaboration

Students will express ideas and problem solve in an online forum with peers outside the province. Individually, they will communicate their solutions and conclusions of an authentic community problem in their own online forum.

#### Elements of ICT Experience

- Network with others locally and globally through safe, responsible, and respectful electronic communications
- Collaborate to explain, interpret, hypothesize, and synthesize to determine a solution to an authentic problem
- Create and manage an online forum (e.g., membership, privacy settings, layouts)
- Read information (e.g., calendars, news items, curricular content, grades)
- Navigate the environment
- Download or link curricular materials
- Submit curricular work
- Participate in group forums

#### Examples of Curricular Integration

Students may discuss topics such as:

- Genetic research and related technologies
- Origins and effects of water pollution
- Characteristics of a hero and villain from a graphic novel
- Cultural significance of dance forms around the world

## Essential Learning: Evaluating, Creating, Organizing, Applying, and Publishing



### ICT Experience – Digital Presentation

Students will research an inquiry question, draw conclusions, create, and post the audio/video presentation.

#### Elements of ICT Experience

- Decide which sources support an inquiry question
- Create an electronic log for search strategies and bibliographic information (e.g., word processing, spreadsheet, database software, online forums)
- Evaluate the validity of online information and share with a partner
- Create or manipulate digital music in accordance with legal and ethical standards of digital citizenship using music creation software
- Digitally photograph and/or create digital images incorporating text using presentation software
- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Apply and use proper citations using citation builder sites and apply Creative Commons licensing to original creation
- Create a serial podcast, digital presentation, ePortfolio, or website (e.g., presentation, painting and drawing, movie creation, photo editing, audio recording, web creation software)
- Upload creations to media streaming sites that are age appropriate

#### Examples of Curricular Integration

Research the contributions of Canadians to following fields of study:

- Science
- Engineering
- Journalism
- Social Work

Communicate expert viewpoints, summarize and form conclusions on topics such as:

- Genetic processes
- Preventions of injuries in dance
- Labour market trends
- Societal effects of technologies
- Healthy active living

## Essential Learning: Collaborating, Managing, Searching, Applying, Designing, and Inventing



### ICT Experience – Innovative Work

Students will collaboratively research, explore, deconstruct, design, and invent an interactive learning resource for curricular review.

#### Elements of ICT Experience

- Manage project files using folders and appropriate naming conventions
- Edit using text or audio comments (e.g., commenting, track changes, voice recording)
- Perform more sophisticated information searches using online databases, online encyclopedias, search engines, and eBooks available on the school library website, the Internet, and other primary sources
- Participate in a digital simulation, game, or virtual world
- Deconstruct interactive learning resources, and share with peers
- Observe and participate in the design of a simulation, game, and/or robot
- Create or manipulate digital music in accordance with legal and ethical standards of digital citizenship using music creation software
- Mash digital images using photo editing software in accordance with legal and ethical standards of digital citizenship
- Apply Creative Commons licensing to original creations
- Invent a digital learning resource or simulation such as a game, picture book, adventure choice, terminology rolodex (e.g., presentation, animation, simulation creation, mind mapping, programming software)

#### Examples of Curricular Integration

The learning object could be based on the following topics:

- Stereotypes
- Transmission of hereditary characteristics
- Original dramatic work
- Software development process
- Personal safety
- Solving financial problems
- Rights and responsibilities of employers and employees

# ICT Standards: *Grade 12*

## Technology Operations & Concepts



Students demonstrate a sound understanding of technology concepts, systems, and operations.

### Fundamental Skills

- Manage content within an operating system and web environment
- Create content that demonstrates planning, writing, and editing for a particular purpose (e.g., word processing, spreadsheets, databases software, online forums)

### Digital Tools and Software Applications

- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices, GPS – Global Position Systems)

## Research & Information Fluency



Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.

### Research & Information Processing

- Search, read, log, and note take information from a variety of sources (e.g., online encyclopedias, databases, eBooks available on the school library website, the Internet)
- Categorize, analyze, and evaluate information from primary sources (e.g., interviews, surveys) and secondary sources (e.g., online encyclopedias, databases found on the school library website)

### Ethical Use of Information

- Use research to develop original drafts and cite sources

## Critical Thinking & Problem Solving



Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

### Project Management

- Plan and manage activities to develop a solution or complete a project

### Technology Selection

- Select and combine appropriate technologies for a specific purpose

### Digital Simulation and Gaming

- Participate in a digital simulation or game to explore concepts and/or determine outcomes (e.g., OERB interactive learning resources, robotics, virtual worlds)

## Communication & Collaboration



Students work collaboratively, using digital media and environments, to support individual learning and contribute to the learning of others.

### Online Collaboration

- Create, lead, participate, and collaborate in an online environment to support and extend learning (e.g., email, online forums, RSS feeds, virtual worlds, video web conferences)

### Online Learning

- Use eLearning to support and extend learning (e.g., learning management system)

## Digital Citizenship



Students understand human, cultural, and societal issues related to technology and practice legal, ethical, and safe behaviour.

### Digital Rights & Responsibilities

- Understand and recognize the importance of intellectual and creative property in a digital environment

### Digital Etiquette & Safety

- Understand and demonstrate safe, respectful, and responsible online communication (e.g., email, online forums, social networks, eCommerce)

### Digital Health

- Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, monitor placement, etc.)

### Digital Access

- Understand and recognize the importance of electronic access for all (e.g., assistive technology hardware and software)

## Creativity & Innovation



Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

### Creative Work

- Create original works as a means of personal or group expression (e.g., photo editing, audio recording, movie creation, animation software)

### Innovative Work

- Apply existing knowledge to generate new ideas, products, or processes

## Curricular Connections: *Grade 12*

### Essential Learning: Searching, Collaborating, Organizing, Applying, and Publishing



#### ICT Experience - Productivity

Students will collaborate through online productivity tools (e.g., Google Docs, Writeboard, Zoho Writer) and as a group publish a single original work (e.g., essay, experiment, manual, article, journal).

#### Elements of ICT Experience

- Collaborate using online productivity tools
- Perform sophisticated information searches, including peer-reviewed materials, using online databases, online encyclopedias, search engines, and electronic books available on the school library website, the Internet, and primary sources
- Organize research information using mind mapping software
- Apply and use proper citations using citation builder sites
- Publish work online (e.g., word processing, spreadsheet, database software, online forums)

#### Examples of Curricular Integration

Texts could be based on the following topics:

- Elements of effective writing
- Industry standards for live, recorded, electronic or graphic communications
- Food security and hunger elimination
- Logarithmic functions
- Transition from school to career
- International business mistakes
- Post-secondary education and training for various occupations
- Biomechanical principles for improved movement

### Essential Learning: Evaluating, Organizing, Selecting, Applying, Creating, and Publishing



#### ICT Experience – Digital Presentation

Students will research and create an audio and/or video presentation to be published online.

#### Elements of ICT Experience

- Evaluate the validity of online information
- Decide which sources support an inquiry question
- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Select and combine appropriate technologies for a specific purpose
- Understand and demonstrate the importance of intellectual property in a digital environment and seek permission to use digital images, music, and/or video
- Export digital images using copyright-free image collections
- Apply and use proper citations using citation builder sites
- Create a serial podcast, digital presentation, ePortfolio, or website (e.g., presentation, painting and drawing, movie creation, photo editing, audio recording, web creation software)
- Upload creations to media streaming sites that are age appropriate
- Use assistive technologies to support student learning

#### Examples of Curricular Integration

The digital presentation could be based on the following topics:

- Construction company's personnel, documents, and management structure
- Relationship between children and parents in different historical periods
- Theories of bonding and attachment
- Polynomial and simple rational equations
- Societal and cultural expressions of sexuality
- Biological impact on human performance
- Challenges and benefits of internet business
- Ethical business standards
- International business activity on Canada's economy

## Essential Learning: Organizing, Collaborating, Designing, Synthesizing, and Publishing



### ICT Experience - Collaboration

Students will research and communicate online with others – peers, community members, experts - in search of solutions to a social issue. Individually, they will demonstrate their solutions by developing an informative community website.

#### Elements of ICT Experience

- Perform sophisticated information searches, including peer-reviewed materials, using online databases, online encyclopedias, search engines, and electronic books available on the school library website, the Internet, and primary sources
- Collaborate in an online forum in order to discuss curriculum content and support peer learning (e.g., homework help, course notes, shared research)
- Download or link curricular materials
- Organize research information using mind mapping software
- Manage project files using folders and appropriate naming conventions
- Digitally photograph and/or create digital images incorporating text using presentation software
- Understand and demonstrate the importance of intellectual property in a digital environment and seek permission to use digital images, music, and/or video
- Create a serial podcast, digital presentation, ePortfolio, or website (e.g., presentation, painting and drawing, movie creation, photo editing, audio recording, web creation software)
- Use assistive technologies to support student learning

#### Examples of Curricular Integration

Social and global issues could include:

- Effects of human activity on a type of ecosystem
- Media – agents of socialization and change
- Impact of global trends on people and environments at local and global levels
- Analyze ethical issues and propose strategies for ethical practices related to computers

## Essential Learning: Searching, Applying, Collaborating, Designing, Creating, and Inventing



### ICT Experience – Innovative Work

Students will research and collaborate with a business, technology, or computer programming class to design and create a digital learning resource for a curricular area and selected age group. They will use online forums or productivity tools (e.g., Academic Workspace, Google Docs) to plan, assign duties, and set timelines for project completion.

#### Elements of ICT Experience

- Collaborate using online productivity tools
- Perform sophisticated information searches, including peer-reviewed materials, using online databases, online encyclopedias, search engines, and eBooks available on the school library website, the Internet, and other primary sources
- Deconstruct interactive learning resources, and share with peers
- Observe and participate in the design of a simulation, game, and/or robot
- Design and organize project duties and timelines in an online forum
- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices, GPS – Global Position Systems)
- Create or manipulate digital music in accordance with legal and ethical standards of digital citizenship using music creation software
- Mash digital images using photo editing software in accordance with legal and ethical standards of digital citizenship
- Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds, music creation)
- Invent a digital learning resource or simulation such as a game, picture book, adventure choice, terminology rolodex (e.g., presentation, animation, simulation creation, mind mapping, programming software)
- Apply Creative Commons licensing to original creations
- Use assistive technologies to support student learning

#### Examples of Curricular Integration

The innovative product could be based on the following:

- Child rearing and socialization
- Dynamics of intimate relationships
- Human development
- Trigonometric equations and identities
- Workplace literacy and numeracy skills
- Software development process
- Team-base approach to project management

## Curriculum and ICT Integration: FOS, School, or Committee Planning Template

### TDSB Priorities and Needs Assessment

**Check areas considered in this planning?**

- Literacy
- Numeracy
- Pathways
- Community, Culture and Caring

### Data Analysis

**What data determined the need?** (OSSLT, EQAO, Report Card, Student/Teacher Surveys, etc.)

### SMART Goals (Specific, Measurable, Attainable, Realistic, and Timely)

**Goal (Select from School Improvement Plan):**

<b>What will be the curricular focus?</b>	<b>What will be the ICT focus?</b>  <b>ICT Strands:</b> <input type="checkbox"/> Technology & Operations <input type="checkbox"/> Research & Information Fluency <input type="checkbox"/> Digital Citizenship <input type="checkbox"/> Critical Thinking & Problem Solving <input type="checkbox"/> Creativity & Innovation <input type="checkbox"/> Communication & Collaboration
<b>Goal (Select from School Improvement Plan):</b>	
<b>What will be the curricular focus?</b>	<b>What will be the ICT focus?</b>  <b>ICT Strands:</b> <input type="checkbox"/> Technology & Operations <input type="checkbox"/> Research & Information Fluency <input type="checkbox"/> Digital Citizenship <input type="checkbox"/> Critical Thinking & Problem Solving <input type="checkbox"/> Creativity & Innovation <input type="checkbox"/> Communication & Collaboration

### Strategies, Action, and Success

<b>What is the plan to reach the goal?</b>	<b>What measures will be used to determine success?</b>
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### Professional Learning and Resources

<b>What supports are necessary for schools and teachers to build capacity?</b>	<b>What resources are required for implementation?</b>
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### Timelines and Responsibilities for Reviews and Celebration

<b>Dates</b>	<b>Who will be responsible for the implementation?</b>
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### Curriculum and ICT Integration Reflection

<b>Successes:</b>	<b>Challenges:</b>	<b>Next Time:</b>
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## Curriculum and ICT Integration: FOS Plan Example

TDSB Priorities and Needs Assessment		
<p><b>Check areas considered in this planning?</b></p> <p> <input checked="" type="checkbox"/> Literacy                      <input type="checkbox"/> Numeracy  <input type="checkbox"/> Pathways                        <input type="checkbox"/> Community, Culture and Caring                 </p>		
Data Analysis		
<p><b>What data determined the need?</b> (OSSLT, EQAO, Report Card, Student/Teacher Surveys, etc.)</p> <p>Grade 3 and 6 EQAO scores and Report Cards</p>		
SMART Goals (Specific, Measurable, Attainable, Realistic, and Timely)		
<p><b>Goal (Select from School Improvement Plan):</b> To improve Language EQAO scores using Differentiated Instruction and ICT (Smartboards and Promethean) through Professional Learning sessions</p>		
<p><b>What will be the curricular focus?</b></p> <p>Grade K to 8 Language</p>	<p><b>What will be the ICT focus?</b></p> <p><b>ICT Strands:</b></p> <p> <input checked="" type="checkbox"/> Technology &amp; Operations  <input type="checkbox"/> Research &amp; Information Fluency  <input type="checkbox"/> Digital Citizenship  <input checked="" type="checkbox"/> Critical Thinking &amp; Problem Solving  <input type="checkbox"/> Creativity &amp; Innovation  <input checked="" type="checkbox"/> Communication &amp; Collaboration                 </p>	
Strategies, Action, and Success		
<p><b>What is the plan to reach the goal?</b></p> <p><b>Year 1</b></p> <p><i>Session 1 - Introduction to FOS Project</i></p> <ul style="list-style-type: none"> <li>Invite teachers and administrators to a session about IWB's to determine entry points and set goals</li> </ul> <p><i>Sessions 2, 3, and 4 - Professional Learning</i></p> <ul style="list-style-type: none"> <li>Two teachers from each school will attend 3 Professional Learning sessions focusing on different strands of language and then design lessons which incorporate IWB technology for grades K to 3 and 4 to 8</li> </ul> <p><i>Ongoing Collaboration and Communication</i></p> <ul style="list-style-type: none"> <li>Teachers will participate in an FOS online forum where completed lessons will be shared</li> </ul> <p>Sharing, Celebration, and Next Steps</p> <ul style="list-style-type: none"> <li>Whole group sharing and development of next steps will be completed at a year-end celebration</li> </ul> <p><b>Year 2:</b> Continue Professional Learning sessions on language with more of an emphasis on co-planning and co-teaching using IWBs and moderated marking</p> <p><b>Year 3:</b> Develop demonstration classrooms with language and IWBs for other teachers in the FOS to visit</p>	<p><b>How will you know the goal has been met?</b></p> <ul style="list-style-type: none"> <li>EQAO scores for Language</li> <li>Report card data for Language</li> <li>Student reflections</li> <li>Teacher surveys</li> </ul>	
Professional Learning and Resources		
<p><b>What supports are necessary for schools and teachers to build capacity?</b></p> <ul style="list-style-type: none"> <li>Funding for Professional Learning sessions for teachers</li> <li>Co-teaching opportunities with FOS Literacy Coach</li> </ul>	<p><b>What resources are required for implementation?</b></p> <ul style="list-style-type: none"> <li>Monetary resources via FOS</li> </ul>	
Timelines and Responsibilities for Reviews and Celebration		
<p><b>Dates</b></p> <ul style="list-style-type: none"> <li>Nov. 25: Initial introduction to project</li> <li>Jan. 25: Professional Learning - Reading, Writing, and IWB</li> <li>Feb. 12: Professional Learning - Media Literacy and IWB</li> <li>Mar. 1: Mid-point Sharing Session</li> <li>Apr. 15: Professional Learning session - Oral and IWB</li> <li>May 25: Group Sharing and Celebration</li> </ul>	<p><b>Who will be responsible for the implementation?</b></p> <ul style="list-style-type: none"> <li>Two classroom teachers per project school</li> <li>Principal</li> <li>Literacy Coach</li> <li>ICT Instructional Leader</li> </ul>	
Curriculum and ICT Integration Reflection		
<p><b>Successes:</b></p> <ul style="list-style-type: none"> <li>Creation of IWB language lessons</li> <li>Increased use of IWB by students - greater engagement</li> </ul>	<p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>Encouraging teachers without an IWB to try interactive lessons</li> <li>Building capacity with teachers new to IWB technology</li> </ul>	<p><b>Next Time:</b></p> <ul style="list-style-type: none"> <li>Continued Professional Learning for Differentiated Instruction and ICT</li> </ul>

## Curriculum and ICT Integration: School Plan Example

### TDSB Priorities and Needs Assessment

#### Check areas considered in this planning?

- |                                   |  |
|-----------------------------------|--|
| <input type="checkbox"/> Literacy | <input checked="" type="checkbox"/> Numeracy           |
| <input type="checkbox"/> Pathways | <input type="checkbox"/> Community, Culture and Caring |

### Data Analysis

**What data determined the need?** (OSSLT, EQAO, Report Card, Student/Teacher Surveys, etc.)  
Grade 9 EQAO Math scores and Report Cards

### SMART Goals (Specific, Measurable, Attainable, Realistic, and Timely)

**Goal (Select from School Improvement Plan):** To improve MATH EQAO scores using Differentiated Instruction and ICT (Mimio, Moodle) through Professional Learning sessions, mentoring, and co-teaching.

**What will be the curricular focus?**  
Grade 9/10 Math Applied/Essential courses

#### What will be the ICT focus?

##### ICT Strands:

- Technology & Operations
- Research & Information Fluency
- Digital Citizenship
- Critical Thinking & Problem Solving
- Creativity & Innovation
- Communication & Collaboration

### Strategies, Action, and Success

**What is the plan to reach the goal?**  
We plan to utilize some funds to provide Professional Learning for our Math teachers on Differentiated Instruction and implementation of curriculum.  
  
Also, using differentiated instruction tools via ICT such as Mimio and Moodle, we hope to build a sense of engagement and increase student achievement.

**How will you know the goal has been met?**  
We will assess our goals via student reflections, responses, as well as EQAO math scores.

### Professional Learning and Resources

#### What supports are necessary for schools and teachers to build capacity?

- Funding for Professional Learning sessions
- Co-teach with Intermediate colleagues at FOS schools
- Co-teach Math Applied/ Essential courses to provide greater access to teachers within the classroom and colleague mentoring

#### What resources are required for implementation?

- Monetary resources via Ministry funds
- Monetary resources via FOS
- Teacher mentors via FOS and TDSB Instructional Leaders

### Timelines and Responsibilities for Reviews and Celebration

#### Dates

- Feb 22nd, 2010 - Initial meeting
- March 5th, 2010 - Professional Learning session
- March 13th, 2010 - Math Initiative Meeting
- March 22nd, 2010 - Math Department reflection on Professional Learning and implementation in the classroom

#### Who will be responsible for the implementation?

- Math Curriculum Leader
- ICT Lead
- Principal

### Curriculum and ICT Integration Reflection

#### Successes:

- Adoption by Math Department

#### Challenges:

- Some signs of engagement, but indirect and direct instances of effectiveness needed to be measured

#### Next Time:

- Continued Professional Learning for Differentiated Instruction and ICT



## Curriculum and ICT Integration: Unit Planning Template

### Curricular Connections

**Course/Program:**

**Assessment of the Culminating Activity/Performance Task**

**Overall Expectations:**

**Assessment of Learning - Culminating Activity:**

Curricular Assessment:	Learning Skills Assessment:	Assesment Tools and Strategies:	
<input type="checkbox"/> Knowledge and Understanding  <input type="checkbox"/> Thinking <input type="checkbox"/> Communication <input type="checkbox"/> Application	<input type="checkbox"/> Responsibility <input type="checkbox"/> Organization <input type="checkbox"/> Independent Work <input type="checkbox"/> Collaboration <input type="checkbox"/> Initiative <input type="checkbox"/> Self-regulation	<input type="checkbox"/> Checklist <input type="checkbox"/> Rubric <input type="checkbox"/> Rating Scale <input type="checkbox"/> Anedotal Comments <input type="checkbox"/> Oral Feedback <input type="checkbox"/> Marking Scheme	<input type="checkbox"/> Teacher <input type="checkbox"/> Self <input type="checkbox"/> Peer

### ICT Integration

**ICT Strands:**

- Technology and Operations
- Research & Information Fluency
- Digital Citizenship
- Critical Thinking & Problem Solving
- Creativity & Innovation
- Communication & Collaboration

**ICT Experience:** (See Curricular Connections by Grades)

**ICT Resources:** (Equipment booking and software check)

### Assessment for Learning - Student Activities/Tasks

Tasks	Achievement Chart Focus	Strategies	Assessment Tools	Elements of ICT Experience

### Assessment as Learning - Student Reflection Activities/Tasks

Tasks	Achievement Chart Focus	Strategies	ICT Integration	Possible Application/Software

### Curriculum and ICT Integration Reflection

<b>Successes:</b>	<b>Challenges:</b>	<b>Next Time:</b>
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### Student Reflections

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# Curriculum and ICT Integration: Unit Plan - Elementary Example

## Curricular Connections

**Course/Program:** Grade 5 – Heritage and Citizenship Strand, Early Civilizations and Language

### Assessment of the Culminating Activity/Performance Task

**Overall Expectations:**

**Social Studies:**

- identify and compare the ways in which people in various early civilizations met their physical and social needs, including how they interacted with and used the natural environment

**Language – Oral:**

- use speaking skills and strategies appropriately to communicate with different audiences for a variety of purposes;

**Language – Reading:**

- read and demonstrate an understanding of a variety of literary, graphic, and informational texts, using a range of strategies to construct meaning;

**Language – Writing:**

- draft and revise their writing, using a variety of informational, literary, and graphic forms and stylistic elements appropriate for the purpose and audience;

**Language – Media Studies**

- create a variety of media texts for different purposes and audiences, using appropriate forms, conventions, and techniques

### Assessment of Learning: Culminating Activity

Students will create a digital presentation to advertise their ancient civilization’s political, economic, and social organization.

**Curricular Assessment:**

- ✓ Knowledge and Understanding
- ✓ Thinking
- ✓ Communication
- ✓ Application

**Learning Skills Assessment:**

- ✓ Responsibility
- ✓ Organization
- ✓ Independent Work
- Collaboration
- ✓ Initiative
- Self-regulation

**Assessment Tools and Strategies:**

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>□ Checklist</li> <li>✓ Rubric</li> <li>□ Rating Scale</li> <li>✓ Anecdotal Comments</li> <li>✓ Oral Feedback</li> <li>□ Marking Scheme</li> </ul> | <ul style="list-style-type: none"> <li>✓ Teacher</li> <li>✓ Self</li> <li>✓ Peer</li> </ul> |
|--|---|

## ICT Integration

**ICT Strands:**

- ✓ Technology and Operations
- ✓ Research & Information Fluency
- ✓ Digital Citizenship
- ✓ Critical Thinking & Problem Solving
- ✓ Creativity & Innovation
- ✓ Communication & Collaboration

**ICT Experience:** (See Curricular Connections by Grades)

**ICT Experience – Digital Presentation**

Students will use the four-stage research process to investigate an inquiry question and create a podcast or digital presentation to share their learning in accordance with legal and ethical standards of digital citizenship. Afterwards, students will observe the upload of their creations to a media streaming site or other online forum.

**ICT Resources:** (Equipment booking and software check)

- Confirm partner’s schedule with Teacher-librarian
- Book extra lab time for the duration of the project
- Request necessary software from helpdesk
- Book digital cameras

## Assessment for Learning - Student Activities/Tasks

Tasks	Achievement Chart Focus	Strategies	Assessment Tools	Elements of ICT Experience
Ancient Civilization Research	K/U, T, C	Students develop an inquiry question and research information on their ancient civilization.  Afterward, they sort their information into a graphic organizer.	- oral and written (electronic or digital) feedback by teacher  - checklist – student and peer	<ul style="list-style-type: none"> <li>□ Search and read information using online databases, online encyclopedias, eBooks, and search engines available on the school library website and the Internet</li> <li>□ Organize and storyboard original work using word processing, mind mapping, or comic creation software</li> </ul>

Assessment for Learning - Student Activities/Tasks				
Tasks	Achievement Chart Focus	Strategies	Assessment Tools	Elements of ICT Experience
Poster	T, C	Students create a poster to advertise their civilization's political, economic, and social organization	<ul style="list-style-type: none"> <li>- oral and written (electronic or digital) feedback by teacher</li> <li>- checklist – student and peer</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Digitally photograph and/or create digital images incorporating text using presentation software</li> <li><input type="checkbox"/> Export digital images using copyright-free image collections</li> <li><input type="checkbox"/> Use proper citations</li> <li><input type="checkbox"/> Select and apply Creative Commons licensing to original creations</li> </ul>
Literature Circle on an Ancient Civilization	All	Students read appropriate leveled books on ancient civilizations and share and explain information about facts, themes, and ideas.	<ul style="list-style-type: none"> <li>- oral and written (electronic or digital) feedback by teacher</li> <li>- oral and written feed back by</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Communicate online</li> <li><input type="checkbox"/> Contribute to and build upon, original ideas, theories and conclusions, in an online knowledge building community</li> </ul>
RAFT (Role, Audience, Format, Topic)	All	Students communicate in different formats to try and persuade others to join their civilizations.	<ul style="list-style-type: none"> <li>- oral and written (electronic or digital) feedback by teacher</li> <li>- checklist – student</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Create a podcast or digital presentation with voice narration (e.g., presentation, painting, drawing, movie creation, photo editing, audio recording software)</li> </ul>
Making Connections	All	Students synthesize their learning by using various graphic organizers to compare and contrast artifacts found in both ancient times and today that perform the same function.	<ul style="list-style-type: none"> <li>- oral and written (electronic or digital) feedback by teacher</li> <li>- checklist – student and peer</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Organize and storyboard original work using word processing, mind mapping, or comic creation software</li> </ul>
Assessment as Learning - Student Reflection Activities/Tasks				
Tasks	Achievement Chart Focus	Strategies	ICT Integration	Possible Application/Software
Time Traveller's Portfolio	All	Students reflect upon their learning throughout the unit. Afterwards, they select tasks to share and present as polished pieces in a portfolio.	Students may reflect electronically/digitally with written reflections, or audio/video recordings	Word Audacity Movie Maker Photoshop
Curriculum and ICT Integration Reflection				
<b>Successes:</b> <ul style="list-style-type: none"> <li>- choice for software use</li> <li>- creation and construction of original photos to suit the topic and POV (Point of View) presentation</li> </ul>		<b>Challenges:</b> <ul style="list-style-type: none"> <li>- number of different software choices</li> <li>- limited amount of cameras</li> </ul>		<b>Next Time:</b> <ul style="list-style-type: none"> <li>- group students by software choice to support each other</li> <li>- encourage those with digital cameras to bring them</li> </ul>
Student Reflections				
<ul style="list-style-type: none"> <li>• I like seeing my work on the Internet</li> <li>• This work let me be creative and I love comics</li> <li>• It was fun talking about our reading online. I find that way easier.</li> <li>• Typing fast is hard. I need to get better doing this.</li> </ul>				

# Curriculum and ICT Integration: Unit Plan - Secondary Example

## Curricular Connections

**Course/Program:** Career Studies – GLC 20

### Assessment of the Culminating Activity/Performance Task

**Overall Expectations:**

- identify and describe their interests, skills, characteristics and accomplishments to develop a personal profile, to be used for career development;
- identify and evaluate the personal management skills, and characteristics needed to succeed in school, document them in their portfolio, and demonstrate their use in a variety of settings;

**Specific Expectations:**

- demonstrate understanding of the purpose of self-assessment and the use of standardized assessment tools (e.g., aptitude and interest tests, skills inventories, learning styles inventories);
- describe their current interests, competencies, and characteristics using a variety of assessment tools to produce a personal profile, and identify occupations that are suited to their personal profile;
- analyse the essential skills they have developed through school and through their community experiences (e.g., reading text, computer use, working with others, numeracy), and explain how these skills relate to career development;
- describe and explain the importance of personal management skills (e.g., organization skills, problem solving), habits (e.g., maintaining a personal planner), and characteristics (e.g., adaptability) for success in career development;
- summarize and document their own personal management skills and habits, and evaluate their strengths in order to target areas for improvement;
- determine internal and external influences (e.g., previous successes, peer pressure, parental expectations, family responsibilities), that might limit or expand the range of educational and career opportunities they would consider;
- demonstrate and document effective use of personal management skills (e.g., being punctual, maintaining well-organized notes, completing assignments, studying for tests and examinations) for achieving success in school and in other settings;
- describe a variety of effective communication skills (e.g., active listening, non- verbal communication, giving and receiving feedback);
- demonstrate use of effective communication skills in a variety of situations in school, at home, and in the community (e.g., role play, information interviews, presentations, group work);

### Assessment of Learning - Culminating Activity

**Unit 1 - Personal Management:** In this unit, you have learned a great deal about yourself. Considering this information, how would you describe yourself to someone? Create a poem or song that describes YOU. Use the information you have discovered about yourself through the survey, quiz, interview, and checklists. Your summary should include the following: your name, communication style (strengths and/or weaknesses), personal management skills (strengths or weaknesses), essential skills you possess (school or employability skills), and any other information that you feel is important to know about you. This song or poem will be produced in audio recording software and submitted electronically.

**Curricular Assessment:**

- ✓ Knowledge and Understanding
- ✓ Thinking
- ✓ Communication
- ✓ Application

**Learning Skills Assessment:**

- Responsibility
- ✓ Organization
- ✓ Independent Work
- ✓ Collaboration
- Initiative
- ✓ Self-regulation

**Assessment Tools and Strategies:**

- |   |           |
|---|-----------|
| <input type="checkbox"/> Checklist      | ✓ Teacher |
| ✓ Rubric                                | ✓ Self    |
| <input type="checkbox"/> Rating Scale   | ✓ Peer    |
| ✓ Anecdotal Comments                    |           |
| ✓ Oral Feedback                         |           |
| <input type="checkbox"/> Marking Scheme |           |

## ICT Integration

**ICT Strands:**

- ✓ Technology and Operations
- Research & Information Fluency
- ✓ Digital Citizenship
- ✓ Critical Thinking & Problem Solving
- ✓ Creativity & Innovation
- ✓ Communication & Collaboration

**ICT Experience:** (See Curricular Connections by Grades)

**ICT Experience - Productivity**

Students will research and produce original work for a particular audience or purpose.

**ICT Resources:** (Equipment booking and software check)

- Cross-Curricular lab (10 periods)
- Headsets or microphones for recording
- Audacity, MS Word, Smart Ideas, SMART Notebook software

Assessment for Learning - Student Activities/Tasks				
Tasks	Achievement Chart Focus	Strategies	Assessment Tools	Elements of ICT Experience
Diagnostic - What do I know about me?	K, A	Students demonstrate what they know about their communication, team, employment, personal management skills, by completing an online survey.	<ul style="list-style-type: none"> <li>- oral and written (electronic or digital) feedback by teacher</li> <li>- checklist by student</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Read information (e.g., calendars, news items, curricular content, grades)</li> <li><input type="checkbox"/> Navigate the environment</li> </ul>
Communications	K, C, A	Students write a journal entry making connections between themselves and the curriculum. They retell a situation describing how they communicated in the past, what communication style they used, and how they would change today knowing what they learned about communication styles.	<ul style="list-style-type: none"> <li>- rubric</li> <li>- oral and written (electronic or digital) feedback by teacher</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Produce original work (e.g., word processing, spreadsheet, database software, online forums)</li> </ul>
Community Proposal	All	Students collaborate in teams to solve a community problem by creating a solution and persuading their peers that their proposal/ solution is the most effective.	<ul style="list-style-type: none"> <li>- rating scale by peers</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Collaborate to explain, interpret, hypothesize, and synthesize to determine a solution to an authentic problem</li> <li><input type="checkbox"/> Network with others locally and globally through safe, responsible, and respectful electronic communications</li> <li><input type="checkbox"/> Create a podcast, digital presentation, ePortfolio, or we page (e.g., presentation, painting and drawing, movie creation, photo editing, audio recording, web creation software)</li> </ul>
Interview	All	Students interview someone who knows them well to obtain further knowledge about their skills, strengths, talents. They compare and contrast what they know and learned about themselves and identify the impact on future plans in a letter to the interviewee.	<ul style="list-style-type: none"> <li>- rubric</li> <li>- oral and written (electronic or digital) feedback by teacher</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Organize research information using mind mapping software</li> <li><input type="checkbox"/> Produce original work (e.g., word processing, spreadsheet, database software, online forums)</li> </ul>
School Skills	All	Students complete quizzes that identify their time management, organizational, and stress management skills and make connections to their behaviour and response at school using graphic organizers.	<ul style="list-style-type: none"> <li>- oral and written (electronic or digital) feedback from peers</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in a simulation, game, or virtual world</li> <li><input type="checkbox"/> Organize and storyboard original work using word processing, mind mapping, or comic creation software</li> </ul>

Assessment for Learning - Student Activities/Tasks				
Tasks	Achievement Chart Focus	Strategies	Assessment Tools	Elements of ICT Experience
Making Connections - School and Work	T, A	Students collaborate within groups to build their knowledge about the connection of Essential Employability Skills and school skills.	- checklist - written feedback by teacher	<input type="checkbox"/> Collaborate in an online forum in order to discuss curriculum content and support peer learning (e.g., homework help, course notes, shared research) <input type="checkbox"/> Network with others locally and globally through safe, responsible, and respectful electronic communications

Assessment as Learning - Student Reflection Activities/Tasks				
Tasks	Achievement Chart Focus	Strategies	ICT Integration	Possible Application/Software
Self and Team Collaboration Assessment	C, A and Learning Skills-Collaboration	Students self assess their collaborative skills in the Community Proposal Activity as well as the team's success and challenges. They make reference to the curriculum and Learning Skills to support their response.	Choice – students will submit their reflection as an electronic log in text or audio form	Audacity Email MS Word
Self Assessment of School Skills	T, C, A	Students review the diagnostic survey given at the beginning of the unit. They synthesize their learning and write next steps to support future school activities and learning.	Students will analyze and communicate their results using a time line	Smart Ideas MS Word Smart Notebook

Curriculum and ICT Integration Reflection		
<b>Successes:</b> - Students were enthusiastic and ALL completed the culminating activity.	<b>Challenges:</b> - Some computers with sound difficulties, and therefore, students needed more time.  - One needs to manage noise level in the room for recording.	<b>Next Time:</b> - Group students with an ICT lead who can assist with the hardware and software questions.  - Students could record the interview and use portions within as they speak about their learning.

Student Reflections
<ul style="list-style-type: none"> <li>• I enjoyed recording my poem and submitting rather than typing it.</li> <li>• Taking the online quizzes were great - they helped me to discover more about myself.</li> <li>• I like sharing my opinions with others online and that we could use this to help each other with our work.</li> <li>• I found the self assessment quizzes to be insipid and vague.</li> </ul>

Adapted from the OERB, Ontario Educational Resource Bank: GLC 20, Unit 1 - Personal Management

**Learn**

**Learn a new ICT skill:**

- Review ICT Standards and Curricular Connections by grade to select an ICT Element(s) or ICT Experience
- Self assess using the ICT Skills Continuum by grade chart (pages 53 to 65)
- Determine the ICT training required
- Check for software both in the classroom and the lab. Request Enterprise Helpdesk for any installs
- Contact the teacher-librarian - some software is licensed for home installation and lesson preparation
- Explore <http://TDSBweb/program/ict> for upcoming learning sessions and resources
- Register on Key to Learn for software training and ICT demonstration classrooms
- Identify and access online resources
- Identify and contact peer support

**Plan**

**Plan integration of curriculum and ICT integration:**

- Attend demo classroom visit of ICT integration and complete the action plan including the ICT Element(s) or Experience selected
- Complete the Curriculum and ICT Integration Unit Plan on page 45
- Discuss the Curriculum and ICT Integration Unit Plan with colleagues
- Book school resources (book lab and equipment and complete software check)

**Teach**

**Teach curriculum with ICT:**

- Teach the curriculum integrating ICT as planned
- Reflect and record on the Curriculum and ICT Integration Unit Plan the successes, challenges, and next steps
  - Alter teaching strategies to move students from guided to independent learning with ICT integration
  - Assess and update ICT Skills Continuum by grade chart
- Repeat the above **Plan** and **Teach** stages of this ICT Element or ICT Experience in different curricular subjects or strands
- Self assess using the ICT Skills Continuum by grade chart and select the next curriculum and ICT integration

**Share**

**Share the curriculum and ICT experience:**

- Share your Curriculum and ICT Integration Unit Plan and student exemplars with colleagues
- Share and collaborate best practice and experiences in an online forum
- Share your Curriculum and ICT Integration Unit Plan and student exemplars on the ICT Standards website: [www.tdsb.on.ca/ictstandards](http://www.tdsb.on.ca/ictstandards)
- Mentor colleagues interested in curriculum and ICT integration

## Curriculum and ICT Integration: Software

Below is a list of software available through OSAPAC - Ontario Software Acquisition Program and Committee - [www.osapac.org](http://www.osapac.org), TDSB, or open source on the Internet. The list identifies the software purpose and supporting titles. Visit the ICT Standards website, [www.tdsb.on.ca/ictstandards](http://www.tdsb.on.ca/ictstandards), for the most-current software list with links to sites providing support and resource materials.

### Assistive Technology

- Clicker 5
- Co-Writer/Write Outloud
- Dragon Naturally Speaking
- Read and Write Gold

### Audio Collection - Copyright-free

- Freeplaymusic
- Jamendo
- Naxos Music Library

### Audio Recording

- Audacity
- Voice Thread

### Comic Creation

- BitStrips for Schools
- Comic Life

### Database

- FileMaker

### Digital Citizenship

- Access Canada
- Creative Commons
- Passport to the Internet
- Reality Check
- WIPO - World Intellectual Property Organization

### Digital Image Collection - Copyright-free

- Canadian Clip Art Collection
- Creative Commons
- Flickr
- Pics 4 Learning

### Drawing and Painting

- Corel Draw
- KidPix
- MS Paint

### eMail

- MS Outlook Webmail

### Gaming

- Alice
- Education Arcade
- Futurelab
- Game Maker: YoYo Games
- GamesParentsTeacher.com
- History.com
- Simple

### Graphing and Spreadsheet

- Appleworks
- Corel Draw
- MS Excel

### Interactive Response Technology (Clickers)

- ActivExpression
- e-Instruction
- SMART Response

### Interactive White Board

- ActivInspire
- Mimio Studio
- SMART Notebook

### Mind Mapping

- Comic Life
- SMART Ideas

### Movie Creation

- Adobe Premier
- Frames 4
- iMovie
- MovieMaker
- Photostory

### Music Creation

- Band in a Box
- Finale
- GarageBand
- Music ACE

### Online Forum

- Academic Workspace
- Adobe Connect
- Blog
- Twitter
- Video and Web-conferencing
- Wiki

### Online Productivity

- Google Docs
- Writeboard
- ZohoWriter

### Online Resources

- School library website:
  - Ebsco
  - Gale
  - GIC
  - Novelist
  - Naxos
  - Canadian Encyclopedia
  - Grolier

### Online Survey

- Academic Workspace
- SnapSurveys
- SurveyMonkey
- Zoomerang

### Photo Editing

- Adobe Photoshop

### Presentation

- ActivInspire
- Mimio Studio
- MS PowerPoint
- Prezi
- SMART Notebook

### Programming

- Alice
- HTML
- Java
- Scratch
- Turing
- Visual Basic

### Publishing

- MS Publisher

### Simulation

- CDX
- Edison and Tina Pro
- Gizmos: Math and Science
- GoVenture
- Media Awareness
- Passport to the Internet
- PeaceMaker
- SimCity
- Spore

### Simulation Creation

- ActivInspire
- Alice
- Flash
- Frames 4
- Java
- Scratch
- SMART Notebook

### Video Streaming and Sharing

- Learn 360 - OSAPAC
- National Film Board (NFB)
- TeacherTube/YouTube

### Virtual Worlds

- Jumpstart
- Mokitown
- SecretBuilders
- Poptropica
- Whyville







### Web Creation

- Adobe Creative Suite
- Dreamweaver
- HTML

### Word Processing







- AppleWorks
- Corel WordPerfect
- MS Word



 <h2>Technology Operations &amp; Concepts</h2> <p><b>Fundamental Skills</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Identify and demonstrate how to turn on a computer, log in and out of the TDSB network, open and close software programs</li> <li><input type="checkbox"/> Identify common computer hardware (i.e. monitor, system unit, keyboard, mouse, printer, speaker, microphone, webcam)</li> <li><input type="checkbox"/> Use mouse to click, double-click and highlight text</li> <li><input type="checkbox"/> Observe and participate in a modelled Internet navigation and webpage deconstruction             <ul style="list-style-type: none"> <li><input type="checkbox"/> Launch web browser</li> <li><input type="checkbox"/> Access web pages via hyperlinks and book marks</li> <li><input type="checkbox"/> Identify the conventions of a webpage (e.g., title, graphics, links, menu/navigation)</li> </ul> </li> </ul> <p><b>Digital Tools</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)</li> </ul>	 <h2>Research &amp; Information Fluency</h2> <p><b>Research &amp; Information Processing</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in teacher-led picture information searches using online databases and encyclopedias available on the school library website</li> </ul> <p><b>Ethical Use of Information</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper citations</li> </ul>
 <h2>Critical Thinking &amp; Problem Solving</h2> <p><b>Project Management</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Observe the input of information into a digital graphic organizer (e.g., mind mapping software)</li> </ul> <p><b>Technology Selection</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Observe and identify appropriate technologies for a specific purpose</li> </ul> <p><b>Digital Simulation and Gaming</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Observe and participate in a simulation and/or a game</li> <li><input type="checkbox"/> Observe and participate in the design of a simulation and/or a game</li> </ul>	 <h2>Communication &amp; Collaboration</h2> <p><b>Online Collaboration</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Contribute to modelled and shared online communications</li> </ul> <p><b>Online Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Read information posted (e.g., calendars, news items)</li> </ul>
 <h2>Digital Citizenship</h2> <p><b>Digital Rights &amp; Responsibilities</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Identify Creative Commons licensing icons</li> </ul> <p><b>Digital Etiquette &amp; Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Observe safe, responsible, and respectful electronic communications</li> </ul> <p><b>Digital Health</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper keyboard posture and ergonomically safe practices</li> </ul> <p><b>Digital Access</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use assistive technologies to support student learning</li> </ul>	 <h2>Creativity &amp; Innovation</h2> <p><b>Creative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Digitally photograph and/or create digital images (e.g., drawing, painting software)</li> <li><input type="checkbox"/> Contribute to a class podcast or digital presentation with voice narration (e.g., presentation, movie creation, audio recording software)</li> <li><input type="checkbox"/> Observe the upload of creations to a media streaming site</li> </ul> <p><b>Innovative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds)</li> </ul>







# ICT Skills Continuum: Grade 1 - Look Fors

Grade 1

 <h2>Technology Operations &amp; Concepts</h2> <p><b>Fundamental Skills</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Identify and demonstrate how to turn on a computer, log in and out of the TDSB network, open and close software programs</li> <li><input type="checkbox"/> Identify common computer hardware (i.e., monitor, system unit, keyboard, mouse, printer, speaker, microphone, webcam)</li> <li><input type="checkbox"/> Use mouse to click, double-click and highlight text</li> <li><input type="checkbox"/> Observe and participate in a modelled Internet exploration and webpage deconstruction             <ul style="list-style-type: none"> <li>o Launch web browser</li> <li>o Access webpage via hyperlinks and book marks</li> <li>o Use back button and scroll bar for navigation</li> <li>o Identify the conventions of a webpage (e.g., title, graphics, links, menu/navigation, video)</li> </ul> </li> </ul> <p><b>Digital Tools</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)</li> </ul>	 <h2>Research &amp; Information Fluency</h2> <p><b>Research &amp; Information Processing</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in teacher-led picture and text information searches using online databases and encyclopedias available on the school library website</li> </ul> <p><b>Ethical Use of Information</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper citations</li> </ul>
 <h2>Critical Thinking &amp; Problem Solving</h2> <p><b>Project Management</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Observe the input of information into a digital graphic organizer (e.g., mind mapping software)</li> </ul> <p><b>Technology Selection</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Observe and identify appropriate technologies for a specific purpose</li> </ul> <p><b>Digital Simulation and Gaming</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Observe and participate in a simulation and/or a game</li> <li><input type="checkbox"/> Observe and participate in the design of a simulation and/or a game</li> </ul>	 <h2>Communication &amp; Collaboration</h2> <p><b>Online Collaboration</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Contribute to modelled, shared and guided online communications</li> <li><input type="checkbox"/> Contribute to modelled, shared and guided writing in online forums</li> </ul> <p><b>Online Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Read information posted (e.g., calendars, news items)</li> </ul>
 <h2>Digital Citizenship</h2> <p><b>Digital Rights &amp; Responsibilities</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Identify Creative Commons licensing icons</li> </ul> <p><b>Digital Etiquette &amp; Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Observe safe, responsible, and respectful electronic communications</li> </ul> <p><b>Digital Health</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper keyboard posture and ergonomically safe practices</li> </ul> <p><b>Digital Access</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use assistive technologies to support student learning</li> </ul>	 <h2>Creativity &amp; Innovation</h2> <p><b>Creative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Digitally photograph and/or create digital images (e.g., drawing, painting software)</li> <li><input type="checkbox"/> Contribute to a class podcast or digital presentation with voice narration (e.g., presentation, movie creation, audio recording software)</li> <li><input type="checkbox"/> Observe the upload of creations to a media streaming site</li> </ul> <p><b>Innovative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds)</li> </ul>







# ICT Skills Continuum: Grade 2 - Look Fors

Grade 2

 <h2>Technology Operations &amp; Concepts</h2> <p><b>Fundamental Skills</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Independently turn on a computer, log in and out of the TDSB network, open and close software programs</li> <li><input type="checkbox"/> Identify and demonstrate the difference between computer software and hardware</li> <li><input type="checkbox"/> Use mouse to click, double-click and highlight text</li> <li><input type="checkbox"/> Participate in shared, guided, and independent Internet exploration and webpage deconstruction             <ul style="list-style-type: none"> <li>o Launch web browser</li> <li>o Access web pages via hyperlinks and bookmarks</li> <li>o Use back button and scroll bar for navigation</li> <li>o Input simple URLs (e.g., <a href="http://www.cbc.ca">www.cbc.ca</a>)</li> <li>o Identify the conventions of a webpage (e.g., title, graphics, links, menu/navigation, video, pop ups)</li> </ul> </li> </ul> <p><b>Digital Tools</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)</li> </ul>	 <h2>Research &amp; Information Fluency</h2> <p><b>Research &amp; Information Processing</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in modelled, shared, guided, and independent information searches using online databases and encyclopedias available on the school library website</li> </ul> <p><b>Ethical Use of Information</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper citations</li> </ul>
 <h2>Critical Thinking &amp; Problem Solving</h2> <p><b>Project Management</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in shared, guided, and independent inputting of information into a teacher-created digital graphic organizer (e.g., mind mapping software)</li> </ul> <p><b>Technology Selection</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Observe and identify appropriate technologies for a specific purpose</li> </ul> <p><b>Digital Simulation and Gaming</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Observe and participate in a simulation and/or a game</li> <li><input type="checkbox"/> Observe and participate in the design of a simulation and/or a game</li> </ul>	 <h2>Communication &amp; Collaboration</h2> <p><b>Online Collaboration</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Contribute to shared, guided and independent online communications</li> <li><input type="checkbox"/> Contribute to shared, guided and independent online writing in online forums</li> </ul> <p><b>Online Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Read information posted (e.g., calendars, news items)</li> </ul>
 <h2>Digital Citizenship</h2> <p><b>Digital Rights &amp; Responsibilities</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Identify Creative Commons licensing icons</li> </ul> <p><b>Digital Etiquette &amp; Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Network with others locally and globally through safe, responsible, and respectful electronic communications</li> </ul> <p><b>Digital Health</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper keyboard posture and ergonomically safe practices</li> </ul> <p><b>Digital Access</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use assistive technologies to support student learning</li> </ul>	 <h2>Creativity &amp; Innovation</h2> <p><b>Creative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Digitally photograph and/or create digital images incorporating text (e.g., drawing, painting software)</li> <li><input type="checkbox"/> Create a podcast or digital presentation with voice narration (e.g., presentation, audio recording software)</li> <li><input type="checkbox"/> Observe the upload of creations to a media streaming site</li> </ul> <p><b>Innovative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds)</li> </ul>







# ICT Skills Continuum: Grade 3 - Look Fors

Grade 3







 <h2>Technology Operations &amp; Concepts</h2> <p><b>Fundamental Skills</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Understand and use proper keyboarding technique</li> <li><input type="checkbox"/> Independently launch the Internet for exploration with bookmarks, links, and URLs</li> <li><input type="checkbox"/> Operate the web browser toolbar (e.g., stop, refresh, URL, address field)</li> <li><input type="checkbox"/> Identify the conventions of a webpage (e.g., title, graphics, links, menu/navigation, video, pop ups)</li> <li><input type="checkbox"/> Publish original work using word processing software             <ul style="list-style-type: none"> <li><input type="checkbox"/> change font, style, size, colour, effects</li> <li><input type="checkbox"/> adjust text alignment (e.g., left, centre, right)</li> <li><input type="checkbox"/> highlight text</li> <li><input type="checkbox"/> use text boxes</li> <li><input type="checkbox"/> insert images</li> <li><input type="checkbox"/> insert columns</li> </ul> </li> <li><input type="checkbox"/> Input data into a spreadsheet             <ul style="list-style-type: none"> <li><input type="checkbox"/> change font, style, size, colour, effects</li> <li><input type="checkbox"/> adjust text alignment (e.g., left, centre, right)</li> <li><input type="checkbox"/> create pie charts</li> </ul> </li> </ul> <p><b>Digital Tools</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)</li> </ul>	 <h2>Research &amp; Information Fluency</h2> <p><b>Research &amp; Information Processing</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Search and read credible information using online databases, online encyclopedias, eBooks, and search engines available on the school library website and the Internet</li> <li><input type="checkbox"/> Note take to support an inquiry question</li> <li><input type="checkbox"/> Participate in teacher-led evaluation of online information</li> <li><input type="checkbox"/> Sort sources according to research type (e.g., text, graphic, audio, video)</li> <li><input type="checkbox"/> Decide which sources support an inquiry question</li> </ul> <p><b>Ethical Use of Information</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Export digital images using copyright-free image collections</li> <li><input type="checkbox"/> Use proper citations</li> </ul>
 <h2>Critical Thinking &amp; Problem Solving</h2> <p><b>Project Management</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in guided and independent inputting of information into a teacher-created digital graphic organizer</li> <li><input type="checkbox"/> Organize and storyboard original work using mind mapping software</li> <li><input type="checkbox"/> Participate in modelled data analysis using spreadsheet software</li> </ul> <p><b>Technology Selection</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Observe and identify appropriate technologies for a specific purpose</li> </ul> <p><b>Digital Simulation and Gaming</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in a simulation and/or a game</li> <li><input type="checkbox"/> Observe and participate in the design of a simulation and/or a game</li> </ul>	 <h2>Communication &amp; Collaboration</h2> <p><b>Online Collaboration</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Independently communicate online</li> <li><input type="checkbox"/> Deconstruct and analyze the elements of effective communication in online forums</li> </ul> <p><b>Online Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Read information posted (e.g., calendars, news items)</li> <li><input type="checkbox"/> Navigate the environment</li> <li><input type="checkbox"/> Download curriculum materials</li> </ul>
 <h2>Digital Citizenship</h2> <p><b>Digital Rights &amp; Responsibilities</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Observe a teacher-led email seeking permission to use digital images, music, and/or video</li> <li><input type="checkbox"/> Select and apply Creative Commons licensing to original creations</li> </ul> <p><b>Digital Etiquette &amp; Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Network with others locally and globally through safe, responsible, and respectful electronic communications</li> </ul> <p><b>Digital Health</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper keyboard posture and ergonomically safe practices</li> </ul> <p><b>Digital Access</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use assistive technologies to support student learning</li> </ul>	 <h2>Creativity &amp; Innovation</h2> <p><b>Creative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Digitally photograph and/or create digital images incorporating text using presentation software</li> <li><input type="checkbox"/> Create a podcast or digital presentation with voice narration (e.g., presentation, painting, drawing, movie creation, photo editing, audio recording software)</li> <li><input type="checkbox"/> Observe the upload of creations to a media streaming site</li> </ul> <p><b>Innovative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds)</li> </ul>

# ICT Skills Continuum: Grade 4 - Look Fors

Grade 4







 <h2>Technology Operations &amp; Concepts</h2> <p><b>Fundamental Skills</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Keyboard using proper technique</li> <li><input type="checkbox"/> Launch the Internet for exploration with bookmarks, tags, links, and URLs</li> <li><input type="checkbox"/> Operate the web browser toolbar (e.g., stop, refresh, URL, address field)</li> <li><input type="checkbox"/> Identify the conventions of a webpage (e.g., title, graphics, links, menu/navigation, video, pop ups)</li> <li><input type="checkbox"/> Publish original work using word processing software             <ul style="list-style-type: none"> <li><input type="checkbox"/> change font, style, size, colour, effects</li> <li><input type="checkbox"/> adjust text alignment (e.g., left, centre, right)</li> <li><input type="checkbox"/> highlight text</li> <li><input type="checkbox"/> use text boxes</li> <li><input type="checkbox"/> insert images</li> <li><input type="checkbox"/> insert columns</li> <li><input type="checkbox"/> incorporate bulleted and numbered lists</li> <li><input type="checkbox"/> insert hyperlinks</li> </ul> </li> <li><input type="checkbox"/> Input data into a spreadsheet             <ul style="list-style-type: none"> <li><input type="checkbox"/> change font, style, size, colour, effects</li> <li><input type="checkbox"/> adjust text alignment (e.g., left, centre, right)</li> <li><input type="checkbox"/> create pie charts and bar graphs</li> </ul> </li> </ul> <p><b>Digital Tools</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)</li> </ul>	 <h2>Research &amp; Information Fluency</h2> <p><b>Research &amp; Information Processing</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Search and read information using online databases, online encyclopedias, eBooks, and search engines available on the school library website and the Internet</li> <li><input type="checkbox"/> Note take to support an inquiry question</li> <li><input type="checkbox"/> Participate in shared, guided, and independent evaluation of online information</li> <li><input type="checkbox"/> Sort sources according to research type (e.g., text, graphic, audio, video)</li> <li><input type="checkbox"/> Decide which sources support an inquiry question</li> </ul> <p><b>Ethical Use of Information</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Export digital images using copyright-free image collections</li> <li><input type="checkbox"/> Use proper citations</li> </ul>
 <h2>Critical Thinking &amp; Problem Solving</h2> <p><b>Project Management</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Independently input information into digital graphic organizer using mind mapping software</li> <li><input type="checkbox"/> Organize and storyboard original work using word processing, mind mapping, or comic creation software</li> <li><input type="checkbox"/> Participate in shared, guided, and independent data analysis using spreadsheet software</li> </ul> <p><b>Technology Selection</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Observe and identify appropriate technologies for a specific purpose</li> </ul> <p><b>Digital Simulation and Gaming</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in a simulation and/or a game</li> <li><input type="checkbox"/> Observe and participate in the design of a simulation, game and/or robot</li> </ul>	 <h2>Communication &amp; Collaboration</h2> <p><b>Online Collaboration</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Communicate online</li> <li><input type="checkbox"/> Contribute to and build upon, original ideas, theories and conclusions, in an online knowledge building community</li> </ul> <p><b>Online Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Read information (e.g., calendars, news items, curricular content, grades)</li> <li><input type="checkbox"/> Navigate the environment</li> <li><input type="checkbox"/> Download or link curricular materials</li> <li><input type="checkbox"/> Submit curricular work</li> <li><input type="checkbox"/> Participate in group forums</li> </ul>
 <h2>Digital Citizenship</h2> <p><b>Digital Rights &amp; Responsibilities</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in a shared and guided email activity seeking permission to use digital images, music, and/or video</li> <li><input type="checkbox"/> Select and apply Creative Commons licensing to original creations</li> </ul> <p><b>Digital Etiquette &amp; Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Network with others locally and globally through safe, responsible, and respectful electronic communications</li> </ul> <p><b>Digital Health</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper keyboard posture and ergonomically safe practices</li> </ul> <p><b>Digital Access</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use assistive technologies to support student learning</li> </ul>	 <h2>Creativity &amp; Innovation</h2> <p><b>Creative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Digitally photograph and/or create digital images incorporating text using presentation software</li> <li><input type="checkbox"/> Create a podcast or digital presentation with voice narration (e.g., presentation, painting, drawing, movie creation, photo editing, audio recording software)</li> <li><input type="checkbox"/> Observe the upload of creations to a media streaming site</li> </ul> <p><b>Innovative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds)</li> </ul>

# ICT Skills Continuum: Grade 5 - Look Fors

 <h2>Technology Operations &amp; Concepts</h2> <p><b>Fundamental Skills</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Keyboard using proper technique</li> <li><input type="checkbox"/> Launch the Internet for exploration with bookmarks, tags, links, and URLs</li> <li><input type="checkbox"/> Operate the web browser toolbar (e.g., stop, refresh, URL, address field)</li> <li><input type="checkbox"/> Identify the conventions of a webpage (e.g., title, graphics, links, menu/navigation, video, pop ups)</li> <li><input type="checkbox"/> Publish original work using word processing software             <ul style="list-style-type: none"> <li><input type="checkbox"/> change font, style, size, colour, effects</li> <li><input type="checkbox"/> adjust text alignment (left, centre, right)</li> <li><input type="checkbox"/> highlight text</li> <li><input type="checkbox"/> use text boxes</li> <li><input type="checkbox"/> insert images</li> <li><input type="checkbox"/> insert columns</li> <li><input type="checkbox"/> incorporate bulleted and numbered lists</li> <li><input type="checkbox"/> insert hyperlinks</li> <li><input type="checkbox"/> incorporate Word Art</li> </ul> </li> <li><input type="checkbox"/> Input data into a spreadsheet             <ul style="list-style-type: none"> <li><input type="checkbox"/> change font, style, size, colour, effects</li> <li><input type="checkbox"/> adjust text alignment (left, center, right)</li> <li><input type="checkbox"/> create pie charts, bar graphs, and line graphs</li> <li><input type="checkbox"/> use formulas to do addition and subtraction</li> </ul> </li> </ul> <p><b>Digital Tools</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)</li> </ul>	 <h2>Research &amp; Information Fluency</h2> <p><b>Research &amp; Information Processing</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Search and read information using online databases, online encyclopedias, eBooks, and search engines available on the school library website and the Internet</li> <li><input type="checkbox"/> Note take to support an inquiry question</li> <li><input type="checkbox"/> Participate in guided and independent evaluations of online information</li> <li><input type="checkbox"/> Sort sources according to research type (e.g., text, graphic, audio, video)</li> <li><input type="checkbox"/> Decide which sources support an inquiry question</li> </ul> <p><b>Ethical Use of Information</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Export digital images using copyright-free image collections</li> <li><input type="checkbox"/> Use proper citations</li> </ul>
 <h2>Critical Thinking &amp; Problem Solving</h2> <p><b>Project Management</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Record and organize research information using mind mapping software</li> <li><input type="checkbox"/> Organize and storyboard original work using word processing, mind mapping, or comic creation software</li> <li><input type="checkbox"/> Participate in guided and independent data analyze using spreadsheets</li> </ul> <p><b>Technology Selection</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Observe and identify appropriate technologies for a specific purpose</li> </ul> <p><b>Digital Simulation and Gaming</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in a simulation and/or a game</li> <li><input type="checkbox"/> Observe and participate in the design of a simulation, game and/or robot</li> </ul>	 <h2>Communication &amp; Collaboration</h2> <p><b>Online Collaboration</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Communicate online</li> <li><input type="checkbox"/> Collaborate in a class online forum; include hyperlinks to external websites</li> </ul> <p><b>Online Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Read information (e.g., calendars, news items, curricular content, grades)</li> <li><input type="checkbox"/> Navigate the environment</li> <li><input type="checkbox"/> Download or link curricular materials</li> <li><input type="checkbox"/> Submit curricular work</li> <li><input type="checkbox"/> Participate in group forums</li> </ul>
 <h2>Digital Citizenship</h2> <p><b>Digital Rights &amp; Responsibilities</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Email seeking permission to use digital images, music, and/or video</li> <li><input type="checkbox"/> Select and apply Creative Commons licensing to original creations</li> <li><input type="checkbox"/> Insert copyright-free audio clips into an audio creation</li> </ul> <p><b>Digital Etiquette &amp; Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Network with others locally and globally through safe, responsible, and respectful electronic communications</li> </ul> <p><b>Digital Health</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper keyboard posture and ergonomically safe practices</li> </ul> <p><b>Digital Access</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use assistive technologies to support student learning</li> </ul>	 <h2>Creativity &amp; Innovation</h2> <p><b>Creative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Digitally photograph and/or create digital images incorporating text using presentation software</li> <li><input type="checkbox"/> Create a podcast or digital presentation with voice narration (e.g., presentation, painting, drawing, movie creation, photo editing, audio recording software)</li> <li><input type="checkbox"/> Observe the upload of creations to a media streaming site</li> </ul> <p><b>Innovative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds, music creation)</li> </ul>







Grade 5

# ICT Skills Continuum: Grade 6 - Look Fors

 <h2>Technology Operations &amp; Concepts</h2> <p><b>Fundamental Skills</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Keyboard using proper technique</li> <li><input type="checkbox"/> Deconstruct an existing online resource available on the school library website and the Internet</li> <li><input type="checkbox"/> Publish original work using word processing software             <ul style="list-style-type: none"> <li><input type="checkbox"/> incorporate Auto Shapes</li> </ul> </li> <li><input type="checkbox"/> Input data using spreadsheet software             <ul style="list-style-type: none"> <li><input type="checkbox"/> change font, style, size, colour, effects</li> <li><input type="checkbox"/> adjust text alignment (left, centre, right)</li> <li><input type="checkbox"/> create pie charts, bar graphs, and line graphs</li> <li><input type="checkbox"/> use formulas to do addition, subtraction, multiplication and division</li> </ul> </li> </ul> <p><b>Digital Tools</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, hand-held devices, GPS – Global Position Systems)</li> </ul>	 <h2>Research &amp; Information Fluency</h2> <p><b>Research &amp; Information Processing</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Search and read information using online databases, online encyclopedias, eBooks, and search engines available on the school library website and the Internet</li> <li><input type="checkbox"/> Note take to support an inquiry question</li> <li><input type="checkbox"/> Evaluate online information and obtain feedback from teacher</li> <li><input type="checkbox"/> Sort sources according to research type (e.g., text, graphic, audio, video)</li> <li><input type="checkbox"/> Decide which sources support an inquiry question</li> </ul> <p><b>Ethical Use of Information</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Export digital images using copyright-free image collections</li> <li><input type="checkbox"/> Apply and use proper citations using citation builder sites</li> </ul>
 <h2>Critical Thinking &amp; Problem Solving</h2> <p><b>Project Management</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Organize research information with mind mapping software</li> <li><input type="checkbox"/> Organize and storyboard original work using word processing, mind mapping, or comic creation software</li> <li><input type="checkbox"/> Analyze data using spreadsheet software</li> </ul> <p><b>Technology Selection</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Select appropriate technologies for a specific purpose</li> </ul> <p><b>Digital Simulation and Gaming</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in a simulation and/or game</li> <li><input type="checkbox"/> Observe and participate in the design of a simulation, game, and/or robot</li> </ul>	 <h2>Communication &amp; Collaboration</h2> <p><b>Online Collaboration</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Communicate online</li> <li><input type="checkbox"/> Collaborate in an online forum; include hyperlinks to external websites and postings within the online forum</li> </ul> <p><b>Online Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Read information (e.g., calendars, news items, curricular content, grades)</li> <li><input type="checkbox"/> Navigate the environment</li> <li><input type="checkbox"/> Download or link curricular materials</li> <li><input type="checkbox"/> Submit curricular work</li> <li><input type="checkbox"/> Participate in group forums</li> </ul>
 <h2>Digital Citizenship</h2> <p><b>Digital Rights &amp; Responsibilities</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Understand and apply the importance of intellectual property in a digital environment and seek permission to use digital images, music, and/or video</li> <li><input type="checkbox"/> Mash digital images using photo editing software in accordance with legal and ethical standards of digital citizenship</li> <li><input type="checkbox"/> Apply Creative Commons licensing to original creations</li> <li><input type="checkbox"/> Insert copyright-free audio clips into an audio creation</li> </ul> <p><b>Digital Etiquette &amp; Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Network with others locally and globally through safe, responsible, and respectful electronic communications</li> </ul> <p><b>Digital Health</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper keyboard posture and ergonomically safe practices</li> </ul> <p><b>Digital Access</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use assistive technologies to support student learning</li> </ul>	 <h2>Creativity &amp; Innovation</h2> <p><b>Creative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Digitally photograph and/or create digital images incorporating text using presentation software</li> <li><input type="checkbox"/> Create a podcast, ePortfolio, or digital presentation (e.g., presentation, painting, drawing, movie creation, photo editing, audio recording software)</li> <li><input type="checkbox"/> Observe the upload of creations to a media streaming site</li> </ul> <p><b>Innovative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds, music creation)</li> </ul>

Grade 6







# ICT Skills Continuum: Grade 7 - Look Fors

 <h2>Technology Operations &amp; Concepts</h2> <p><b>Fundamental Skills</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Keyboard using proper technique</li> <li><input type="checkbox"/> Deconstruct an existing online resource available on the school library website and the Internet</li> <li><input type="checkbox"/> Publish original work using word processing software             <ul style="list-style-type: none"> <li><input type="checkbox"/> incorporate Auto Shapes</li> <li><input type="checkbox"/> insert tables</li> </ul> </li> <li><input type="checkbox"/> Use database software to create and enter information for a curricular purpose</li> </ul> <p><b>Digital Tools</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, hand-held devices, GPS – Global Position Systems)</li> </ul>	 <h2>Research &amp; Information Fluency</h2> <p><b>Research &amp; Information Processing</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Search and read information using online databases, online encyclopedias, eBooks, and search engines available on the school library website and the Internet</li> <li><input type="checkbox"/> Note take to support an inquiry question</li> <li><input type="checkbox"/> Evaluate online information and obtain feedback from teacher</li> <li><input type="checkbox"/> Sort sources according to research type (e.g., text, graphic, audio, video)</li> <li><input type="checkbox"/> Decide which sources support an inquiry question</li> </ul> <p><b>Ethical Use of Information</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Export digital images using copyright-free image collections</li> <li><input type="checkbox"/> Apply and use proper citations using citation builder sites</li> </ul>
 <h2>Critical Thinking &amp; Problem Solving</h2> <p><b>Project Management</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Organize research information using mind mapping software</li> <li><input type="checkbox"/> Organize and storyboard original work using word processing, mind mapping, or comic creation software</li> <li><input type="checkbox"/> Analyze data using spreadsheet software</li> </ul> <p><b>Technology Selection</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Select appropriate technologies for a specific purpose</li> </ul> <p><b>Digital Simulation and Gaming</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in a simulation and/or game</li> <li><input type="checkbox"/> Observe and participate in the design of a simulation, game, and/or robot</li> </ul>	 <h2>Communication &amp; Collaboration</h2> <p><b>Online Collaboration</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Communicate online</li> <li><input type="checkbox"/> Collaborate in an online forum with students from other schools in the local community; include hyperlinks to external websites and postings within the online forum</li> </ul> <p><b>Online Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Read information (e.g., calendars, news items, curricular content, grades)</li> <li><input type="checkbox"/> Navigate the environment</li> <li><input type="checkbox"/> Download or link curricular materials</li> <li><input type="checkbox"/> Submit curricular work</li> <li><input type="checkbox"/> Participate in group forums</li> </ul>
 <h2>Digital Citizenship</h2> <p><b>Digital Rights &amp; Responsibilities</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Understand and apply the importance of intellectual property in a digital environment and seek permission to use digital images, music, and/or video</li> <li><input type="checkbox"/> Mash digital images using photo editing software in accordance with legal and ethical standards of digital citizenship</li> <li><input type="checkbox"/> Apply Creative Commons licensing to original creations</li> <li><input type="checkbox"/> Insert copyright-free audio clips into an audio creation</li> </ul> <p><b>Digital Etiquette &amp; Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Network with others locally and globally through safe, responsible, and respectful electronic communications</li> </ul> <p><b>Digital Health</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper keyboard posture and ergonomically safe practices</li> </ul> <p><b>Digital Access</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use assistive technologies to support student learning</li> </ul>	 <h2>Creativity &amp; Innovation</h2> <p><b>Creative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Digitally photograph and/or create digital images incorporating text using presentation software</li> <li><input type="checkbox"/> Create a podcast, ePortfolio, or digital presentation (e.g., presentation, painting and drawing, movie creation, photo editing, audio recording software)</li> <li><input type="checkbox"/> Observe the upload of creations to a media streaming site</li> </ul> <p><b>Innovative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds, music creation)</li> </ul>

Grade 7









# ICT Skills Continuum: Grade 8 - Look Fors







 <h2>Technology Operations &amp; Concepts</h2> <p><b>Fundamental Skills</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Keyboard using proper technique</li> <li><input type="checkbox"/> Deconstruct an existing online resource available on the school library website and the Internet</li> <li><input type="checkbox"/> Produce original work incorporating (e.g., word processing, online forum)             <ul style="list-style-type: none"> <li><input type="checkbox"/> incorporate Auto Shapes</li> <li><input type="checkbox"/> insert tables</li> <li><input type="checkbox"/> insert headers and footers</li> </ul> </li> <li><input type="checkbox"/> Use database software to create and enter information for a curricular purpose</li> </ul> <p><b>Digital Tools</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices, GPS – Global Position Systems)</li> </ul>	 <h2>Research &amp; Information Fluency</h2> <p><b>Research &amp; Information Processing</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Search and read information using online databases, online encyclopedias, eBooks, and search engines available on the school library website and the Internet</li> <li><input type="checkbox"/> Note take to support an inquiry question</li> <li><input type="checkbox"/> Evaluate online information and obtain feedback from teacher</li> <li><input type="checkbox"/> Sort sources according to research type (e.g., text, graphic, audio, video)</li> <li><input type="checkbox"/> Decide which sources support an inquiry question</li> </ul> <p><b>Ethical Use of Information</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Export digital images using copyright-free image collections</li> <li><input type="checkbox"/> Apply and use proper citations using citation builder sites</li> </ul>
 <h2>Critical Thinking &amp; Problem Solving</h2> <p><b>Project Management</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Organize research information using mind mapping software</li> <li><input type="checkbox"/> Organize and storyboard original work using word processing, mind mapping, or comic creation software</li> <li><input type="checkbox"/> Analyze data using spreadsheet software</li> <li><input type="checkbox"/> Retrieve and analyze information using database software for a curricular purpose</li> </ul> <p><b>Technology Selection</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Select appropriate technologies for a specific purpose</li> </ul> <p><b>Digital Simulation and Gaming</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in a simulation and/or game</li> <li><input type="checkbox"/> Observe and participate in the design of a simulation, game, and/or robot</li> </ul>	 <h2>Communication &amp; Collaboration</h2> <p><b>Online Collaboration</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Communicate online</li> <li><input type="checkbox"/> Collaborate using online productivity tools</li> <li><input type="checkbox"/> Collaborate in an online forum with students from other districts or countries; include hyperlinks to external websites and postings within the online forum</li> </ul> <p><b>Online Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Read information (e.g., calendars, news items, curricular content, grades)</li> <li><input type="checkbox"/> Navigate the environment</li> <li><input type="checkbox"/> Download or link curricular materials</li> <li><input type="checkbox"/> Submit curricular work</li> <li><input type="checkbox"/> Participate in group forums</li> </ul>
 <h2>Digital Citizenship</h2> <p><b>Digital Rights &amp; Responsibilities</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Understand and demonstrate the importance of intellectual property in a digital environment and seek permission to use digital images, music, and/or video</li> <li><input type="checkbox"/> Mash digital images using photo editing software in accordance with legal and ethical standards of digital citizenship</li> <li><input type="checkbox"/> Apply Creative Commons licensing to original creations</li> <li><input type="checkbox"/> Insert copyright-free audio clips into an audio creation</li> </ul> <p><b>Digital Etiquette &amp; Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Network with others locally and globally through safe, responsible, and respectful electronic communications</li> </ul> <p><b>Digital Health</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper keyboard posture and ergonomically safe practices</li> </ul> <p><b>Digital Access</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use assistive technologies to support student learning</li> </ul>	 <h2>Creativity &amp; Innovation</h2> <p><b>Creative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Digitally photograph and/or create digital images incorporating using presentation software</li> <li><input type="checkbox"/> Create a podcast, digital presentation, ePortfolio, or webpage (e.g., presentation, painting and drawing, movie creation, photo editing, audio recording, web creation software)</li> <li><input type="checkbox"/> Observe the upload of creations to a media streaming site</li> </ul> <p><b>Innovative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds, music creation)</li> </ul>

Grade 8







# ICT Skills Continuum: *Grade 9 - Look Fors*

	<b>Technology Operations &amp; Concepts</b>	
<p><b>Fundamental Skills</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Locate and organize personal resources (e.g., folders, links)</li> <li><input type="checkbox"/> Manage project files using folders and appropriate naming conventions</li> <li><input type="checkbox"/> Produce original work incorporating (e.g., word processing, spreadsheet, database software, online forums)             <ul style="list-style-type: none"> <li><input type="checkbox"/> images</li> <li><input type="checkbox"/> tables</li> <li><input type="checkbox"/> columns</li> <li><input type="checkbox"/> table of contents</li> </ul> </li> </ul> <p><b>Digital Tools</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices, GPS – Global Position Systems)</li> </ul>	<p><b>Research &amp; Information Processing</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Perform information searches using teacher or librarian selected online resources available on the school library website, the Internet, and other primary sources</li> <li><input type="checkbox"/> Note take to support an inquiry question</li> <li><input type="checkbox"/> Create an electronic log for search strategies and bibliographic information (e.g., word processing, spreadsheet, database software, online forums)</li> <li><input type="checkbox"/> Evaluate the validity of online information and share with the teacher for feedback</li> <li><input type="checkbox"/> Decide which sources support an inquiry question</li> </ul> <p><b>Ethical Use of Information</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Export digital images using copyright-free image collections</li> <li><input type="checkbox"/> Apply and use proper citations using citation builder sites</li> </ul>	
	<b>Critical Thinking &amp; Problem Solving</b>	
<p><b>Project Management</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Organize research information using mind mapping software</li> <li><input type="checkbox"/> Organize and storyboard original work using word processing, mind mapping, or comic creation software</li> <li><input type="checkbox"/> Design and organize project duties and timelines and share with an instructor</li> </ul> <p><b>Technology Selection</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Select and combine appropriate technologies for a specific purpose</li> </ul> <p><b>Digital Simulation and Gaming</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in a simulation, game, or virtual world</li> <li><input type="checkbox"/> Deconstruct interactive learning resources and share with peers</li> <li><input type="checkbox"/> Observe and participate in the design of a simulation, game, and/or robot</li> </ul>	<p><b>Communication &amp; Collaboration</b></p> <p><b>Online Collaboration</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Collaborate in an online forum in order to discuss curriculum content and support peer learning (e.g., homework help, course notes, shared research)</li> <li><input type="checkbox"/> Collaborate to explain, interpret, hypothesize, and synthesize to determine a solution to an authentic problem</li> <li><input type="checkbox"/> Create and manage an online forum (e.g., membership, privacy settings, layouts)</li> <li><input type="checkbox"/> Collaborate using online productivity tools</li> </ul> <p><b>Online Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Read information (e.g., calendars, news items, curricular content, grades)</li> <li><input type="checkbox"/> Navigate the environment</li> <li><input type="checkbox"/> Download or link curricular materials</li> <li><input type="checkbox"/> Submit curricular work</li> <li><input type="checkbox"/> Participate in group forums</li> </ul>	
	<b>Digital Citizenship</b>	
<p><b>Digital Rights &amp; Responsibilities</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Understand and apply the importance of intellectual property in a digital environment and seek permission to use digital images, music, and/or video</li> <li><input type="checkbox"/> Create or manipulate digital music in accordance with legal and ethical standards of digital citizenship using music creation software</li> <li><input type="checkbox"/> Mash digital images using photo editing software in accordance with legal and ethical standards of digital citizenship</li> <li><input type="checkbox"/> Apply Creative Commons licensing to original creations</li> </ul> <p><b>Digital Etiquette &amp; Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Network with others locally and globally through safe, responsible, and respectful electronic communications</li> </ul> <p><b>Digital Health</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper keyboard posture and ergonomically safe practices</li> </ul> <p><b>Digital Access</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use assistive technologies to support student learning</li> </ul>	<p><b>Creativity &amp; Innovation</b></p> <p><b>Creative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Digitally photograph and/or create digital images incorporating text using presentation software</li> <li><input type="checkbox"/> Create a podcast, digital presentation, ePortfolio, or webpage (e.g., presentation, painting, drawing, movie creation, photo editing, audio recording, web creation software)</li> <li><input type="checkbox"/> Upload creations to media streaming sites that are age appropriate</li> </ul> <p><b>Innovative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds, music creation)</li> <li><input type="checkbox"/> Invent a digital learning resource or simulation such as a game, picture book, adventure choice, terminology rolodex (e.g., presentation, animation, simulation creation, mind mapping, programming software)</li> </ul>	

# ICT Skills Continuum: Grade 10 - Look Fors

 <h2>Technology Operations &amp; Concepts</h2> <p><b>Fundamental Skills</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Locate and organize personal resources (e.g., folders, links)</li> <li><input type="checkbox"/> Manage project files using folders and appropriate naming conventions</li> <li><input type="checkbox"/> Produce original work incorporating (e.g., word processing, spreadsheet, database software, online forums) <ul style="list-style-type: none"> <li><input type="checkbox"/> images</li> <li><input type="checkbox"/> tables</li> <li><input type="checkbox"/> columns</li> <li><input type="checkbox"/> table of contents</li> <li><input type="checkbox"/> track changes</li> </ul> </li> <li><input type="checkbox"/> Edit using text or audio comments (e.g., commenting, track changes, voice recording)</li> </ul> <p><b>Digital Tools</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices, GPS – Global Position Systems)</li> </ul>	 <h2>Research &amp; Information Fluency</h2> <p><b>Research &amp; Information Processing</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Perform information searches using online databases, encyclopedias, search engines, and eBooks available on the school library website, the Internet, and other primary sources</li> <li><input type="checkbox"/> Note take to support an inquiry question</li> <li><input type="checkbox"/> Create an electronic log for search strategies and bibliographic information (e.g., word processing, spreadsheet, database software, online forums)</li> <li><input type="checkbox"/> Evaluate the validity of online information and share with a partner</li> <li><input type="checkbox"/> Decide which sources support an inquiry question</li> </ul> <p><b>Ethical Use of Information</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Export digital images using copyright-free image collections</li> <li><input type="checkbox"/> Apply and use proper citations using citation builder sites</li> </ul>
 <h2>Critical Thinking &amp; Problem Solving</h2> <p><b>Project Management</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Organize research information using mind mapping software</li> <li><input type="checkbox"/> Organize and storyboard original work using word processing, mind mapping, or comic creation software</li> <li><input type="checkbox"/> Design and organize project duties and timelines and share with a partner</li> </ul> <p><b>Technology Selection</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Select and combine appropriate technologies for a specific purpose</li> </ul> <p><b>Digital Simulation and Gaming</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in a simulation, game, or virtual world</li> <li><input type="checkbox"/> Deconstruct interactive learning resources and share with peers</li> <li><input type="checkbox"/> Observe and participate in the design of a simulation, game, and/or robot</li> </ul>	 <h2>Communication &amp; Collaboration</h2> <p><b>Online Collaboration</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Collaborate in an online forum in order to discuss curriculum content and support peer learning (e.g., homework help, course notes, shared research)</li> <li><input type="checkbox"/> Collaborate to explain, interpret, hypothesize, and synthesize to determine a solution to an authentic problem</li> <li><input type="checkbox"/> Create and manage an online forum (e.g., membership, privacy settings, layouts)</li> <li><input type="checkbox"/> Collaborate using online productivity tools</li> </ul> <p><b>Online Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Read information (e.g., calendars, news items, curricular content, grades)</li> <li><input type="checkbox"/> Navigate the environment</li> <li><input type="checkbox"/> Download or link curricular materials</li> <li><input type="checkbox"/> Submit curricular work</li> <li><input type="checkbox"/> Participate in group forums</li> </ul>
 <h2>Digital Citizenship</h2> <p><b>Digital Rights &amp; Responsibilities</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Understand and demonstrate the importance of intellectual property in a digital environment and seek permission to use digital images, music, and /or video</li> <li><input type="checkbox"/> Create or manipulate digital music in accordance with legal and ethical standards of digital citizenship using music creation software</li> <li><input type="checkbox"/> Mash digital images using photo editing software in accordance with legal and ethical standards of digital citizenship</li> <li><input type="checkbox"/> Apply Creative Commons licensing to original creations</li> </ul> <p><b>Digital Etiquette &amp; Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Network with others locally and globally through safe, responsible, and respectful electronic communications</li> </ul> <p><b>Digital Health</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper keyboard posture and ergonomically safe practices</li> </ul> <p><b>Digital Access</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use assistive technologies to support student learning</li> </ul>	 <h2>Creativity &amp; Innovation</h2> <p><b>Creative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Digitally photograph and/or create digital images incorporating text using presentation software</li> <li><input type="checkbox"/> Create a podcast, digital presentation, ePortfolio, or webpage (e.g., presentation, painting and drawing, movie creation, photo editing, audio recording, web creation software)</li> <li><input type="checkbox"/> Upload creations to media streaming sites that are age appropriate</li> </ul> <p><b>Innovative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds, music creation)</li> <li><input type="checkbox"/> Invent a digital learning resource or simulation such as a game, picture book, adventure choice, terminology rolodex (e.g., presentation, animation, simulation creation, mind mapping, programming software)</li> </ul>

# ICT Skills Continuum: Grade 11 - Look Fors

 <h2>Technology Operations &amp; Concepts</h2> <p><b>Fundamental Skills</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Locate and organize personal resources (e.g., folders, links)</li> <li><input type="checkbox"/> Manage project files using folders and appropriate naming conventions</li> <li><input type="checkbox"/> Produce original work incorporating (e.g., word processing, spreadsheet, database software, online forums) <ul style="list-style-type: none"> <li><input type="checkbox"/> images</li> <li><input type="checkbox"/> tables</li> <li><input type="checkbox"/> columns</li> <li><input type="checkbox"/> table of contents</li> <li><input type="checkbox"/> track changes</li> <li><input type="checkbox"/> mail merge</li> </ul> </li> <li><input type="checkbox"/> Edit using text or audio comments (e.g., commenting, track changes, voice recording)</li> </ul> <p><b>Digital Tools</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices, GPS – Global Position Systems)</li> </ul>	 <h2>Research &amp; Information Fluency</h2> <p><b>Research &amp; Information Processing</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Perform more sophisticated information searches using online databases, online encyclopedias, search engines, and eBooks available on the school library website, the Internet, and other primary sources</li> <li><input type="checkbox"/> Note take to support an inquiry question</li> <li><input type="checkbox"/> Create an electronic log for search strategies and bibliographic information (e.g., word processing, spreadsheet, database software, online forums)</li> <li><input type="checkbox"/> Evaluate the validity of online information and share with a partner</li> <li><input type="checkbox"/> Decide which sources support an inquiry question</li> </ul> <p><b>Ethical Use of Information</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Export digital images using copyright-free image collections</li> <li><input type="checkbox"/> Apply and use proper citations using citation builder sites</li> </ul>
 <h2>Critical Thinking &amp; Problem Solving</h2> <p><b>Project Management</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Organize research information using mind mapping software</li> <li><input type="checkbox"/> Organize and storyboard original work using word processing, mind mapping, or comic creation software</li> <li><input type="checkbox"/> Design and organize project duties and timelines in an online forum</li> </ul> <p><b>Technology Selection</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Select and combine appropriate technologies for a specific purpose</li> </ul> <p><b>Digital Simulation and Gaming</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in a digital simulation, game, or virtual world</li> <li><input type="checkbox"/> Deconstruct interactive learning resources and share with peers</li> <li><input type="checkbox"/> Observe and participate in the design of a simulation, game, and/or robot</li> </ul>	 <h2>Communication &amp; Collaboration</h2> <p><b>Online Collaboration</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Collaborate in an online forum in order to discuss curriculum content and support peer learning (e.g., homework help, course notes, shared research)</li> <li><input type="checkbox"/> Collaborate to explain, interpret, hypothesize, and synthesize to determine a solution to an authentic problem</li> <li><input type="checkbox"/> Create and manage an online forum (e.g., membership, privacy settings, layouts)</li> <li><input type="checkbox"/> Collaborate using online productivity tools</li> </ul> <p><b>Online Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Read information (e.g., calendars, news items, curricular content, grades)</li> <li><input type="checkbox"/> Navigate the environment</li> <li><input type="checkbox"/> Download or link curricular materials</li> <li><input type="checkbox"/> Submit curricular work</li> <li><input type="checkbox"/> Participate in group forums</li> </ul>
 <h2>Digital Citizenship</h2> <p><b>Digital Rights &amp; Responsibilities</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Understand and demonstrate the importance of intellectual property in a digital environment and seek permission to use digital images, music, and/or video</li> <li><input type="checkbox"/> Create or manipulate digital music in accordance with legal and ethical standards of digital citizenship using music creation software</li> <li><input type="checkbox"/> Mash digital images using photo editing software in accordance with legal and ethical standards of digital citizenship</li> <li><input type="checkbox"/> Apply Creative Commons licensing to original creations</li> </ul> <p><b>Digital Etiquette &amp; Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Network with others locally and globally through safe, responsible, and respectful electronic communications</li> </ul> <p><b>Digital Health</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper keyboard posture and ergonomically safe practices</li> </ul> <p><b>Digital Access</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use assistive technologies to support student learning</li> </ul>	 <h2>Creativity &amp; Innovation</h2> <p><b>Creative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Digitally photograph and/or create digital images incorporating text using presentation software</li> <li><input type="checkbox"/> Create a serial podcast, digital presentation, ePortfolio, or website (e.g., presentation, painting and drawing, movie creation, photo editing, audio recording, web creation software)</li> <li><input type="checkbox"/> Upload creations to media streaming sites that are age appropriate</li> </ul> <p><b>Innovative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds, music creation)</li> <li><input type="checkbox"/> Invent a digital learning resource or simulation such as a game, picture book, adventure choice, terminology rolodex (e.g., presentation, animation, simulation creation, mind mapping, programming software)</li> </ul>

# ICT Skills Continuum: Grade 12 - Look Fors

	<h2>Technology Operations &amp; Concepts</h2>	<h2>Research &amp; Information Fluency</h2>	
	<p><b>Fundamental Skills</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Locate and organize personal resources (e.g., folders, links)</li> <li><input type="checkbox"/> Manage project files using folders and appropriate naming conventions</li> <li><input type="checkbox"/> Publish work online incorporating (e.g., word processing, spreadsheet, database software, online forums)                             <ul style="list-style-type: none"> <li><input type="checkbox"/> images</li> <li><input type="checkbox"/> tables</li> <li><input type="checkbox"/> columns</li> <li><input type="checkbox"/> table of contents</li> <li><input type="checkbox"/> track changes</li> <li><input type="checkbox"/> mail merge</li> <li><input type="checkbox"/> pagination</li> </ul> </li> <li><input type="checkbox"/> Edit using text or audio comments (e.g., commenting, track changes, voice recording)</li> </ul> <p><b>Digital Tools</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices, GPS – Global Position Systems)</li> </ul>	<p><b>Research &amp; Information Processing</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Perform sophisticated information searches, including peer-reviewed materials, using online databases, online encyclopedias, search engines, and eBooks available on the school library website, the Internet, and other primary sources</li> <li><input type="checkbox"/> Note take to support an inquiry question</li> <li><input type="checkbox"/> Create an electronic log for search strategies and bibliographic information (e.g., word processing, operating system, spreadsheet, database software, online forums)</li> <li><input type="checkbox"/> Evaluate the validity of online information</li> <li><input type="checkbox"/> Decide which sources support an inquiry question</li> </ul> <p><b>Ethical Use of Information</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Export digital images using copyright-free image collections</li> <li><input type="checkbox"/> Apply and use proper citations using citation builder sites</li> </ul>	
	<h2>Critical Thinking &amp; Problem Solving</h2> <p><b>Project Management</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Organize research information using mind mapping software</li> <li><input type="checkbox"/> Organize and storyboard original work using word processing, mind mapping, or comic creation software</li> <li><input type="checkbox"/> Design and organize project duties and timelines in an online forum</li> </ul> <p><b>Technology Selection</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Select and combine appropriate technologies for a specific purpose</li> </ul> <p><b>Digital Simulation and Gaming</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in a simulation, game or virtual world</li> <li><input type="checkbox"/> Deconstruct interactive learning resources and share with peers</li> <li><input type="checkbox"/> Observe and participate in the design of a simulation, game, and/or robot</li> </ul>	<h2>Communication &amp; Collaboration</h2> <p><b>Online Collaboration</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Collaborate in an online forum in order to discuss curriculum content and support peer learning (e.g., homework help, course notes, shared research)</li> <li><input type="checkbox"/> Collaborate to explain, interpret, hypothesize, and synthesize to determine a solution to an authentic problem</li> <li><input type="checkbox"/> Create and manage an online forum (e.g., membership, privacy settings, layouts)</li> <li><input type="checkbox"/> Collaborate using online productivity tools</li> </ul> <p><b>Online Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Read information (e.g., calendars, news items, curricular content, grades)</li> <li><input type="checkbox"/> Navigate the environment</li> <li><input type="checkbox"/> Download or link curricular materials</li> <li><input type="checkbox"/> Submit curricular work</li> <li><input type="checkbox"/> Participate in group forums</li> </ul>	
	<h2>Digital Citizenship</h2> <p><b>Digital Rights &amp; Responsibilities</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Understand and demonstrate the importance of intellectual property in a digital environment and seek permission to use digital images, music, and/or video</li> <li><input type="checkbox"/> Create or manipulate digital music in accordance with legal and ethical standards of digital citizenship using music creation software</li> <li><input type="checkbox"/> Mash digital images using photo editing software in accordance with legal and ethical standards of digital citizenship</li> <li><input type="checkbox"/> Apply Creative Commons licensing to original creations</li> </ul> <p><b>Digital Etiquette &amp; Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Network with others locally and globally through safe, responsible, and respectful electronic communications</li> </ul> <p><b>Digital Health</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use proper keyboard posture and ergonomically safe practices</li> </ul> <p><b>Digital Access</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use assistive technologies to support student learning</li> </ul>	<h2>Creativity &amp; Innovation</h2> <p><b>Creative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Digitally photograph and/or create digital images incorporating text using presentation software</li> <li><input type="checkbox"/> Create a serial podcast, digital presentation, ePortfolio, or website (e.g., presentation, painting and drawing, movie creation, photo editing, audio recording, web creation software)</li> <li><input type="checkbox"/> Upload creations to media streaming sites that are age appropriate</li> </ul> <p><b>Innovative Work</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds, music creation)</li> <li><input type="checkbox"/> Invent a digital learning resource or simulation such as a game, picture book, adventure choice, terminology rolodex (e.g., presentation, animation, simulation creation, mind mapping, programming software)</li> </ul>	

## ICT Standards: *Glossary*

**Academic Workspace** A website that allows communication and collaboration among students, teachers, administrators, and school staff by the means of email, instant messaging, file storage, shared workspaces, and secure electronic assignment workflow.

**Achievement Chart** The Ontario Curriculum standard to guide teachers with assessment and evaluation of student work according to categories and levels of performance.

**Animation** The use of a computer to present, either continuously or in rapid succession, pictures on electronic devices, graphically representing motion by a sequences of images.

**Audacity** A free, open-source, audio recording software program that can be used on both Windows and MacIntosh machines.

**Blog** Two words blended together - web and log. It is an interactive method of online communication with the ability to enter text, links, images, and video.

**Bookmark** A stored web location for quick retrieval at a later date. Web browsers electronic references, large text databases and help systems provide bookmarks that identify a URL users want to revisit in the future.

**Citation Builder** Sites that credit the information used, by formatting into proper bibliographical or footnote structure (e.g., Son of the Citation Machine at <http://citationmachine.net/> and EasyBib at <http://www.easybib.com/>).

**Concept-Map** A graphical form showing the relationships among concepts or organization of knowledge in a diagram.

**Copyright-Free** An expression used by authors whose works can be used freely regardless of copyright. It is different from public domain.

**Creative Commons** An organization that has defined an alternative to copyright by filling in the gap between full copyright, in which no use is permitted without permission, and public domain, where permission is not required at all. Creative Commons' licenses allow the copy and distribution of the work under specific conditions as identified by the author from a list of options.

**Creative Commons Licensing** Creators can select specific licenses to apply to their work which allows others to use accordingly.

**Database** A collection of data organised for ease and speed of search and retrieval.

**Digital Citizenship, Standards of** Digital citizenship can be defined as the norms of appropriate, responsible behaviour with regard to technology use and contains all but not only the following standards: Digital etiquette, communication, literacy, access, commerce, law, rights & responsibility, health & wellness, and safety & security.

**Digital Literacy** The ability to understand, apply, analyse, evaluate, and create information using digital tools.

**Digital Portfolio** See ePortfolio

**Digital Presentation** Of or relating to an application that can combine text, graphics, full-motion video, and sound into an integrated package.

**Digital Probes** A transducer that converts physical measurements into electrical signals using various measuring systems within the probe structure (e.g., digital thermometers, digital multimeters).

## ICT Standards: *Glossary*

**Digital Sensor** Sensors help translate physical world attributes into values that the computer can use. Digital sensors generate what is called a 'Discrete Signal'. This means that there is a range of values that the sensor can output, but the value must increase in steps. There is a known relationship between any value and the values preceding and following it. "An interesting way to think about this is an Analog Signal works like a tuner on an older radio. You can turn it up or down in a continuous motion. You can fine tune it by turning the knob ever so slightly. However, Digital 'Discrete Signals' typically have a stair step appearance. If you consider a television sets tuner, it allows you to change channels in steps."

**Download** The process to transfer data or programs from a server or host computer to one's own computer or device.

**eBook** A book whose contents are in an electronic format.

**eCommerce** Electronic commerce, as in transactions over the Internet.

**eLearning** An umbrella term for providing computer instruction (courseware) online over the public Internet, private distance learning networks or in-house via an intranet.

**ePortfolio** Known as an ePortfolio or digital portfolio, an ePortfolio is a collection of electronic evidence assembled and managed by a user. Electronic evidence may include text, electronic files, images, multimedia, entries, and hyperlinks. ePortfolios are both demonstrations of the user's abilities and platforms for self-expression.

**Four-stage Research Model** A dynamic process of learning that contains four complex stages: exploring, investigating, processing and creating.

**Gizmos** Interactive online simulations for math and science education in grades K -12.

**GPS Global Positions** A system of satellites, computers, and receivers that is able to determine the latitude and longitude of a receiver on Earth by calculating the time difference for signals from different satellites to reach the receiver.

**Handheld Devices** A mobile device (also known as cell phone device, handheld device, handheld computer, "Palmtop" or simply handheld) is a pocket-sized computing device, typically having a display screen with touch input or a miniature keyboard. In the case of the personal digital assistant (PDA) the input and output are combined into a touch-screen interface.

**Hyperlink** The process to link or follow hypertext in an electronic document or file. It is text or object that links to a URL when it is selected.

**Interactive Learning Resource** A digital resource used to support learning, where students interact by reading, keying answers, moving images, and/or selecting choices.

**LEGO Crickets** Crickets are small programmable devices that can make things spin, light up, and play music. Crickets are based on more than a decade of NSF-funded educational research. Lifelong Kindergarten researchers collaborated with the LEGO Company to create the first "programmable bricks," squeezing computational power into LEGO bricks.

**Multimedia** See Digital Presentation.

**OERB Ontario Education Resource Bank** An Ontario Curriculum online database where teachers and students can obtain materials developed for classroom use in grades K – 12. Such materials include lesson plans, worksheets, demonstrations, interactive learning resources, policy documents, activity descriptions, guides, exercises, experiments, indexes, modules, and complete courses. Teachers may upload and share their self-developed curriculum materials. Accessible at: <http://resources.elearningontario.ca/>

## ICT Standards: *Glossary*

**OERB Interactive Learning Resources** Objects in the OERB, usually digital and web-based, that can be used and re-used to support learning. Learning objects offer a new conceptualization of the learning process: rather than the traditional “several hour chunk”, they provide smaller, self-contained, re-usable units of learning. At their core, however, will be instructional content, practice, and assessment.

**Online Database** A database accessible from a network, including from the Internet. The content is accessed through a proprietary search.

**Online Encyclopedia** A large database of useful information, accessible via World Wide Web.

**Online Forum** An Internet forum or message board used for online discussion. From a technological standpoint, forums or boards are web applications managing user-generated content. (e.g., Academic Workspace, Twitter, Blogger, Wikispaces)

**Online Knowledge Building Community** A group of people that primarily interact via communication media such as newsletters, telephone, email, internet social network service or instant messages rather than face to face, and whose primary goal is knowledge creation rather than the construction of specific products or the completion of tasks.

**Online Video Sharing Site** A site for sharing user-generated videos, as well as professional clips (e.g., YouTube, TeacherTube).

**Online Productivity Software** Productivity software, word processing, spreadsheet, etc., available for online use by individuals who may choose to grant access and editing rights to others for group production.

**Operating System** An operating system (OS) is an interface between the hardware and user. It is responsible for the management and coordination of activities, sharing of resources, and is the host for software applications.

**Peer-To-Peer Postings** Within peer-to-peer postings, commonly abbreviated P2P, participants make a portion of their message directly available to other network participants, without the need for central coordination instances. Peers are both suppliers and consumers of resources, in contrast to the traditional client-server model where only servers supply and clients consume.

**Podcast** A series of digital media files (either audio or video) that are released episodically and downloaded through web syndication.

**RSS** RSS (most commonly translated as “Really Simple Syndication” but sometimes “Rich Site Summary”) is a family of web feed formats used to publish frequently updated works—such as blog entries, news headlines, audio, and video—in a standardized format. An RSS document (which is called a “feed”, “web feed”, or “channel”) includes full or summarized text, plus metadata such as publishing dates and authorship.

**School Library Website** An online site where staff and students begin for library research at home and at school. The school library website contains quality web links, full-text databases, reference sources, and research tools that are carefully selected to help with projects, research, and homework.

**Search Engine** A tool designed to search for information on the World Wide Web. The search results are usually presented in a list and are commonly called hits. The information may consist of web pages, images, information and other types of files.

**Simulation** The imitation of some real thing, state of affairs, or process. The act of simulating generally entails representing certain key characteristics or behaviours of a selected physical or abstract system.



## ICT Standards: *Glossary*

**Social Network** An online social structure that allows individuals or organizations to be part of a virtual community. (e.g., Facebook, Twitter, Academic Workspace)

**Spreadsheet** A computer application that simulates a paper worksheet. It displays multiple cells that together make up a grid consisting of rows and columns, each cell containing alphanumeric text, numeric values, or formulas used for financial information.

**TDSB Network** Online systems and resources provided by TDSB for use by employees and students. Online resources include all material that is accessed through a computer or telecommunications network.

**Threaded Discussion, Online** An electronic discussion (such as one via e-mail, e-mail list, bulletin board, newsgroup, or Internet forum) in which the software aids the user by visually grouping messages. Messages are usually grouped visually in a hierarchy by topic. A set of messages grouped in this way is called a topic thread or simply "thread".

**Upload** The sending of data from a local system to a remote system, such as a server, with the intent that the remote system should save a copy of whatever is being transferred, or initiate such a process.

**Video Conference** A set of interactive telecommunication technologies which allow two or more locations to interact via two-way video and audio transmissions simultaneously.

**Virtual World** A computer-based simulated environment intended for its users to inhabit and interact via avatars. These avatars are usually depicted as textual, two-dimensional, or three-dimensional graphical representations, although other forms are possible (e.g., auditory and touch sensations).

**Voice Recognition Software** Speech recognition, also known as automatic speech recognition or computer speech recognition, converts spoken words to text. The term "voice recognition" is sometimes used to refer to speech recognition where the recognition system is trained to a particular speaker.

**Web Conference** Used to conduct live meetings, training, or presentations over the Internet. In a web conference, each participant sits at his or her own computer and is connected to other participants via the internet. This can be either a downloaded application on each of the attendees' computers or a web-based application where the attendees access the meeting by clicking on a link distributed by e-mail to enter the conference.

**Weblog** see Blog.

**Wiki** A website that allows the easy creation and editing of any number of interlinked web pages via a web browser using a simplified markup language or a WYSIWYG text editor. These are typically powered by wiki software and are often used to create collaborative websites, to power community websites, for personal note taking, in corporate intranets, and in knowledge management systems.

**Word Processing** Creation of documents using a word processor, a computer application used for the production (including composition, editing, formatting, and possibly printing) of any sort of printable material.

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