BROOKFIELD PUBLIC SCHOOLS

LIBRARY MEDIA AND INFORMATION AND TECHNOLOGY LITERACY FRAMEWORK

MARCH 2008

Philosophy

All students must be able to use information and technology effectively to live, learn and work successfully in an increasingly complex and technology-based society. The overarching goal of an information and technology literacy instructional program is to ensure that all students are independent, competent, responsible and confident users of information and technology and can apply related strategies for acquiring basic skills and content knowledge, communicating ideas, problem-solving and pursuing personal interests. To achieve this end, information and technology knowledge, strategies and skills shall be integrated throughout all curricula, K-12.

Program Goals

By the end of Grade 12, all students will be independent, competent, responsible, productive, and confident users of information and technology and able to apply related strategies for acquiring basic skills and content knowledge, collaborating with others, communicating ideas, solving problems and pursuing personal and aesthetic growth and will attain a level of information and technology literacy skills that are measurable and will enable them to:

- Communicate information and ideas, conduct research, organize data, and solve problems, and create original works;
- Demonstrate responsible, legal, and ethical use of information and technology;
- Use effective and efficient strategies to explore and use a wide range of information and technology resources to gain knowledge, deepen understanding, make informed decisions, and solve problems for educational, career and personal pursuits;
- Apply information and technology competencies to learning in the content areas;
- Locate, evaluate, interpret, and synthesize information from print and non-print sources;
- Use technology tools to enhance learning, increase productivity, and promote creativity;
- Use self-assessment strategies to reflect on one's own learning to determine that the skills, dispositions, and responsibilities are effective;
- Display curiosity by pursuing interests through multiple resources.

Hallmarks of Best Practice

I&TL Curriculum Based on State and National Standards

- Learning Resources and Information Technology Framework (now Information and Technology Literacy Framework)
- Information Power: Building Partnerships for Learning
- National Educational Technology Standards for Students (NETS)
- AASL Standards for the 21st-Century Learner

A Well-defined, but Integrated Curriculum

- Instruction integrated into and across content areas, K-12
- Developed by I&TL professionals in cooperation with other educators
- Instruction implemented by I&TL professionals working with classroom teachers
- Instruction is planned, systematic and ongoing for all students
- Formal alignment with content areas
- Focus is on student acquisition of I&TL skills and competencies
- Flexible access to I&TL facilities and resources

Collaboration

- Working with all teachers
- Working with all phases of the instructional process: planning, delivery, and assessment

Program/Curriculum Driven

- I&TL instructional program works because it has been embedded in the educational process
- I&TL professional in all schools
- Strong administrative support

Student Competency/Performance Assessed

- Grade-level benchmarks or performance standards have been defined

Essential Understandings

Students will define their information needs and identify effective courses of action to conduct research and solve problems.
Students will understand and demonstrate a command of information skills and strategies to locate and effectively use print and non-print resources to solve problems and conduct research.
Students will apply information from a variety of sources and formats using evaluative criteria to interpret, analyze, organize, and synthesize both print and non-print material
Students will use appropriate information and technology to create written, visual, oral, and multimedia products to communicate ideas, information or conclusions to others.
Students will operate and use computers and other technologies as tools for productivity, problem-solving and learning across the content areas.
Students will demonstrate the responsible, legal, and ethical use of information resources, computers and other technologies.
Students will assess the effectiveness of their information and technology choices for problem-solving and communication.
Students will display curiosity by pursuing interests through multiple resources.

Essential Questions

1. What do students need to know prior to using information and technology resources?

2. What are the learning skills and strategies that students need to successfully find information?

3. How do students evaluate and use information resources?

4. How do students use information and technology to express and communicate ideas?

5. What type of technological tools will students use?

6. What are student responsibilities regarding the use of information and technology?

7. How do students evaluate the process and the final product?

8. What are student responsibilities regarding their personal and aesthetic growth?

Content Standards

Content Standard 1: Definition and Identification of Information Needs
What do students need to know prior to using information and technology resources?

	By Grade 4	By Grade 8	By Grade 12
Students will define their information needs and identify effective courses of action to conduct research and solve problems.	1.1 Clearly restate the scope and criteria of a task (such as time line, length, audience and presentation mode) with minimal prompting	1.6 Clearly restate the scope and criteria for a given task	1.11 Clearly state the scope and criteria for a given task and demonstrate the ability to communicate them to others
	1.2 Identify existing knowledge and, with assistance, list areas where more information is needed	1.7 Identify and discuss existing knowledge concerning a given task, and list areas where more information is needed	1.12 Identify and discuss existing knowledge concerning a given task, and list areas where more information is needed
	1.3 Understand an essential question related to a topic of interest or assignment	1.8 Frame an essential question using given information, and pose additional questions related to completion of the task	1.13 Develop essential questions related to a topic and formulate a research hypothesis related to the topic
	1.4 Identify, locate, and use appropriate print, non-print and/or digital resources available through the school library media center, with assistance	1.9 Identify, locate, and use an array of print and non-print resources available through the library media center and access resources outside the school	1.14 Identify, locate, and use print, non-print and digital resources within and outside the school
	1.5 Describe a course of action for addressing an essential question and completing the task	1.10 Determine an appropriate course of action for addressing the essential question	1.15 Determine a course of action that demonstrates the selection of appropriate strategies and resources for accomplishing a task

Content Standard 2: Information Strategies
What are the learning skills and strategies that students need to successfully find information?

	By Grade 4	By Grade 8	By Grade 12
Students will understand and demonstrate information skills and strategies to locate and effectively use print and non-print resources to solve problems and conduct research.	2.1 Use the online catalog to identify materials by author, title or subject, including cross references, and locate resources in appropriate areas of the library media center (e.g., easy section or reference)	2.11 Use additional features of online catalog records and demonstrate the ability to locate information from all areas of the library media center, such as fiction, nonfiction and reference	2.21 Apply principles of information systems organization to a variety of print and non-print resources
	2.2 Use menus, icons, and links to access and use digital media to conduct basic research	2.12 Demonstrate the ability to navigate through a variety of software menus to access information for research, publication and communication	2.22 Use online information resources to meet the needs for research, publications, and communications
	2.3 Locate and use table of contents and indexes in nonfiction materials	2.13 Describe the variety of ways indexes and tables are used as organizers for information systems	2.23 Access specific information from print and non-print resources by using internal organizers (e.g., indexes, cross-references)
	2.4 Identify print and non-print characteristics, organizing features (e.g., table of contents, index), and purposes	2.14 Use additional organizing features of print and non-print (e.g., menus, bibliographies and hyperlinks) to locate and use information	2.24 Plan and design methods to collect reliable data for particular purposes and audiences, using advanced reference materials, indexes, dictionaries and abstracts
	2.5 Display emotional resilience by persisting in information searching despite challenges	2.15 Display persistence by continuing to pursue information to gain a broad perspective	2.25 Demonstrate adaptability by changing the inquiry focus, questions, resources, or strategies when necessary

Content Standard 2: Information Strategies (continued)
What are the learning skills and strategies that students need to successfully find information?

	2.6 Select appropriate resources from a variety of media formats, understanding that information is stored and accessed in different ways	2.16 Search, find, sort, and evaluate database information from computers, and on-line resources and know how to apply specific features of different search engines	2.26 Determine the best tool for locating information and use key word descriptors and Boolean logic to perform advanced on-line searches (e.g., field searches)
	2.7 Identify and use print and non-print reference sources (atlases, almanacs, encyclopedias, dictionaries, etc.)	2.17 Select and use appropriate resources and/or equipment to accomplish a given task	2.27 Use the full range of print and non-print resources within the school or district
	2.8 Use information presented graphically, orally, textually and visually(e.g., pictures, captions, diagrams or labels)	2.18 Demonstrate ability to take notes, print out or record selected information from a wide range of sources of information presented in any format.	2.28 Demonstrate the ability to solve problems by collecting, analyzing and interpreting data
	2.9 Identify and begin using age-appropriate search engines and directories	2.19 Demonstrate the ability to identify and use a variety of features to locate information using an Internet search engine or directory	2.29 Select appropriate search engines or directories related to a specific task
	2.10 Identify key words for searching for information with assistance.	2.20 Identify key words for searching information with minimal assistance	2.30 Identify key words for searching information independently

Content Standard 3: Information Processing
How do students evaluate and use information resources?

	By Grade 4	By Grade 8	By Grade 12
Students will apply information from a variety of sources and formats using evaluative criteria to interpret, analyze, organize, and synthesize both print and non-print material	3.1 Identify appropriate sources of information for a specific purpose	3.5 Develop and apply more complex criteria for aligning resources with a specific need and presentation	3.9 Develop and use personal and established criteria for selecting materials of appropriate breadth and depth of detail, format, illustrations, special features, level, content, purpose and intended audience
	3.2 Use criteria to judge the relevance, credibility and completeness of both print and non-print information	3.6 Apply evaluative criteria to discern stereotypes, biases and propaganda techniques in print and non-print resources	3.10 Demonstrate ability to identify and compare sources of information and apply multiple evaluative criteria, including purpose, point of view, biases and stereotypes, accuracy, continuity and currency
	3.3 Organize, analyze, and synthesize information into related categories with assistance.	3.7 Organize, analyze, and synthesize information to draw meaningful conclusions and determine an appropriate format for presentation	3.11 Organize, analyze and synthesize information to draw meaningful conclusions through written, oral, numeric and visual communications.
	3.4 Use strategies to draw conclusions from information and apply knowledge to curricular areas, real world situations, and further investigations	3.8 Use strategies to draw conclusions from information and apply knowledge to curricular areas, real world situations, and further investigations in order to construct new understandings and create new knowledge	3.12 Use strategies to draw conclusions from information and apply knowledge to curricular areas, real world situations, and further investigations in order to construct new understandings and create new knowledge

Content Standard 4: Application
How do students use information and technology to express and communicate ideas?

	By Grade 4	By Grade 8	By Grade 12
Students will use appropriate information and technology to create written, visual, oral and multimedia products to communicate ideas, information or conclusions to others.	4.1 Select and use appropriate software and hardware to organize, analyze, interpret information, and present conclusions	4.3 Create databases, spreadsheets and a variety of multimedia products to organize, analyze and interpret information	4.5 Use a variety of applications to organize, analyze, communicate, and interpret information
	4.2 Use appropriate technologies and formats to clearly present information gathered from a variety of print and non-print resources	4.3 Use appropriate technologies and formats to clearly present information gathered from a variety of print and non-print resources	4.6 Use appropriate technologies and formats to clearly present information gathered from a variety of print and non-print resources to a variety of audiences

Content Standard 5: Technology Use
What type of technological tools will students use?

	By Grade 4	By Grade 8	By Grade 12
Students will operate and use computers and other technologies as tools for productivity, problem solving and learning across the content areas.	5.1 Use basic operational features of school hardware (accessing programs, input devices, printing, output devices, keyboard, etc.)	5.10 Operate school hardware and demonstrate the ability to use the school network to access and utilize school software, independently	5.19 Operate school hardware and demonstrate ability to understand and use capabilities of the school network and software, independently
	5.2 Use content-specific technology tools and software	5.11 Use content-specific technology tools and software	5.20 Use content-specific tools and software
	5.3 Demonstrate the ability to use basic features (entering information/data, editing, calculating, manipulating text, sound and graphics, saving files) of personal productivity software	5.12 Demonstrate the ability to independently use personal productivity software and multimedia to create products in a wide range of formats (newsletters, budgets, brochures, imported graphics, web pages, digital movies, etc.)	5.21 Produce a wide range of products using the advanced features of personal productivity software
	5.4 Work cooperatively with peers and others when using computers and other technologies.	5.13 Demonstrate the use of technological resources to help plan, coordinate and complete group projects.	5.22 Using telecommunications, collaborate with peers, experts and others to research, compile, synthesize, produce and disseminate information or creative works
	5.5 Participate and collaborate as members of a social and intellectual network of learners	5.14 Participate and collaborate as members of a social and intellectual network of learners	5.23 Contribute to the exchange of ideas within and beyond the learning community

Content Standard 5: Technology Use (continued)
What type of technological tools will students use?

	5.6 Identify common hardware and software problems and seek assistance	5.15 Identify hardware and software problems that accompany everyday use and seek assistance	5.24 Identify and apply strategies for solving hardware and software problems
	5.7 Understand that technology tools are constantly changing	5.16 Understand that technology tools are constantly changing and describe their potential for use	5.25 Demonstrate the ability to identify, assess and adapt to new technology tools and resources
	5.8 Describe ways the computer is used to help people work, learn and play	5.17 Identify ways computers and other technologies are affecting the way we live, work and learn	5.26 Analyze the educational, social and ethical issues related to the increased reliance on computers and other technologies
	5.9 Distinguish among different technologies and their uses	5.18 Describe basic criteria used to evaluate and compare different types of computers, peripherals (e.g. printer, scanner) and other technology tools	5.27 Identify evaluative criteria for making informed decisions about computers, peripherals and other technology tools

Content Standard 6: Responsible Use
What are student responsibilities regarding the use of information and technology?

	By Grade 4	By Grade 8	By Grade 12
Students will demonstrate the responsible, legal and ethical use of information resources, computers and other technologies.	6.1 Demonstrate proper and ethical use and care of print and non-print information resources, computers and other technologies	6.5 Demonstrate responsible and ethical use and care of print and non-print information resources, computers, other technologies and networks	6.9 Demonstrate and advocate for legal and ethical behavior regarding the use of technology and information
	6.2 Apply established citation standards to original sources when using or transmitting information to others	6.6 Apply established citation standards for giving credit for information or ideas used	6.10 Apply established citation standards for a wide range of information sources and formats
	6.3 Demonstrate an understanding of the concept of ownership of ideas and information by respecting and observing laws and/ or guidelines for using print and non-print information, software, hardware and networks	6.7 Differentiate among various types of ownership and protection of intellectual property (e.g., copyright, patents) and observe "fair use" guidelines as they apply to each	6.11 Demonstrate an understanding of the process for copyrighting/protecting their own original work
	6.4 Adhere to the district's acceptable use and copyright policies	6.8 Adhere to the district's acceptable use and copyright policies	6.12 Adhere to the district's acceptable use and copyright policies as well as local, state and national laws and policies

Content Standard 7: Assessment
How to students evaluate the process and the final product?

	By Grade 4	By Grade 8	By Grade 12
Students will assess the effectiveness of their information and technology choices for problem-solving and communication.	7.1 Assess whether the process and information gathered was both relevant and complete in response to the assigned task in order to revise strategies and learn more effectively in the future.	7.4 Assess whether the process and information gathered was relevant, complete and accurate in response to the assigned need in order to revise strategies and learn more effectively in the future.	7.7 Assess the relevance, completeness and accuracy of gathered information and the efficiency of the research process in order to revise strategies and learn more effectively in the future.
	7.2 Assess whether their products meet established standards for process, product and presentation	7.5 Assess whether their products meet established standards for process, product and presentation	7.8 Assess whether their products meet established standards for process, product and presentation
	7.3 Reflect and assess for completeness of investigation and recognize new knowledge and understandings	7.6 Reflect and assess for completeness of investigation and recognize new knowledge and understandings	7.9 Reflect and assess for completeness of investigation and recognize new knowledge and understandings

Content Standard 8: Personal and Aesthetic Growth
What are student responsibilities regarding their personal and aesthetic growth?

	All Grades
Students will display curiosity by pursuing interests through multiple resources.	8.1 Read, view and listen for pleasure and personal growth
	8.2 Connect ideas to own interests and previous knowledge and experience
	8.3 Consider divergent opinions, and seek information about new ideas
	8.4 Show an appreciation of literature
	8.5 Read widely and fluently to make connections with self, the world, and previous reading