

ICT BENCHMARKS FOR GRADE 1

Londonderry Elementary Schools

Londonderry School District Benchmark	Skills Included	AASL	ISTE	P21
Understand the basic organizational structure of a book	<ul style="list-style-type: none"> Identify spine, spine label, and title page Identify author, title, and illustrator With assistance, identify copyright page and symbol 	<p>Standard 1 Inquire, think critically, and gain knowledge</p> <p>Standard 3 Share knowledge and participate ethically and productively as members of our democratic society</p>		<p>Information Literacy: Access information efficiently (time) and effectively (sources).</p>
Recognize the two categories of books	<ul style="list-style-type: none"> With assistance, distinguish between fiction and non-fiction Distinguish between fiction and non-fiction call numbers Locate the non-fiction and fiction sections of the library Select fiction and informational books of personal interest 	<p>Standard 1 Inquire, think critically, and gain knowledge</p> <p>Standard 4 Pursue personal and aesthetic growth</p>		<p>Information Literacy: Access information efficiently (time) and effectively (sources).</p>
Frame simple questions related to a topic of interest or assignment	<ul style="list-style-type: none"> With assistance, ask "I wonder" questions about a topic (teacher and/or librarian directed) 	<p>Standard 1 Inquire, think critically, and gain knowledge</p> <p>Standard 4 Pursue personal and aesthetic growth</p>	<p>Standard 3 Research information fluency</p>	<p>Learning & Innovation Skills Critical Thinking and Problem Solving: Identify and ask significant questions that clarify various points of view and lead to better solutions.</p>
Observe the gathering of information and communicating with others using telecommunications	<ul style="list-style-type: none"> Observe the use of e-mail (or other Web 2.0) tools to communicate with experts (teacher and/or librarian directed) 	<p>Standard 1 Inquire, think critically, and gain knowledge</p> <p>Standard 3 Share knowledge and participate ethically and productively as members of our democratic society</p>	<p>Standard 2 Communication and Collaboration</p>	<p>Media Literacy: Understand both how and why media messages are constructed and for what purpose</p> <p>Communication and Collaboration: Articulate thoughts and ideas effectively using oral, written, and nonverbal communication skills in a variety of forms and contexts.</p> <p>Information & Communication Technologies (ICT): Use technology as a tool to research, organize, evaluate and communicate information.</p>
Understand how to navigate a variety of resources in order to use them effectively	<ul style="list-style-type: none"> With assistance, use multimedia resources (interactive books, educational software, multimedia encyclopedias, and websites) 	<p>Standard 1 Inquire, think critically, and gain knowledge</p>	<p>Standard 6 Technology and Concepts</p>	<p>Information Literacy: Access information efficiently (time) and effectively (sources).</p>
Understand how to use classroom technology	<ul style="list-style-type: none"> Use input devices and output devices (mice, and keyboards) to operate computers, and other technologies Demonstrate the proper handling of hardware and software 		<p>Standard 6 Technology and Concepts</p>	<p>Information & Communication Technologies (ICT): Use technology as a tool to research, organize, evaluate and communicate information.</p>

ICT BENCHMARKS FOR GRADE 2

Londonderry Elementary Schools

Londonderry School District Benchmark	Skills Included	AASL	ISTE	P21
Understand the basic organizational structure of a book	<ul style="list-style-type: none"> Identify the index With assistance, demonstrate the use of a table of contents Locate the copyright page and draw the copyright symbol 	Standard 1 Inquire, think critically, and gain knowledge		Information Literacy: Access information efficiently (time) and effectively (sources).
Understand the organization of the library	<ul style="list-style-type: none"> Locate fiction and non-fiction sections of the library With assistance, locate and retrieve print materials in the library Select fiction and informational books of personal interest Begin to understand the use of the on-line catalog 	Standard 1 Inquire, think critically, and gain knowledge Standard 4 Pursue personal and aesthetic growth		Information Literacy: Access information efficiently (time) and effectively (sources).
With assistance, identify questions needed to solve and information problem	<ul style="list-style-type: none"> With assistance, develop questions based on background knowledge Ask "I wonder" questions about a topic With assistance, identify keywords about the topic, problem or question 	Standard 1 Inquire, think critically, and gain knowledge Standard 4 Pursue personal and aesthetic growth	Standard 3 Research and Information Fluency	Critical Thinking and Problem Solving: Identify and ask significant questions that clarify various points of view and lead to better solutions.
Demonstrate the ethical use of information	<ul style="list-style-type: none"> Write and/or state a simple citation (author and title) to indicate an information source 	Standard 3 Share knowledge and participate ethically and productively as members of our democratic society Standard 4 Pursue personal and aesthetic growth	Standard 5 Digital citizenship	Information & Communication Technologies (ICT): Apply a fundamental understanding of the ethical/legal issues surrounding the access and the use of information technologies.
With assistance, gather information and communicate with others using telecommunications	<ul style="list-style-type: none"> With assistance, use e-mail (or other web 2.0 tools) to communicate with experts (teacher and/or librarian directed) 	Standard 1 Inquire, think critically, and gain knowledge Standard 3 Share knowledge and participate ethically and productively as members of our democratic society	Standard 2 Communication and Collaboration	Media Literacy: Understand both how and why media messages are constructed and for what purpose. Communication and Collaboration: Articulate thoughts and ideas effectively using oral, written, and nonverbal communication skills in a variety of forms and contexts. Information & Communication Technologies (ICT): Use technology as a tool to research, organize, evaluate and communicate information.

Understand how to navigate a variety of multimedia resources in order to use them effectively	<ul style="list-style-type: none"> • With assistance, use multimedia resources (interactive books, educational software, multimedia encyclopedias, and websites) 	Standard 1 Inquire, think critically, and gain knowledge	Standard 6 Technology and Concepts	Information Literacy: Manage the flow of information from a wide variety of sources
Understand how to use classroom technology	<ul style="list-style-type: none"> • Use input and output devices (mice and keyboards) to operate computers and other technologies • Demonstrate the proper handling of hardware and software • Insert media such as text, pictures, sound and graphics • Edit Multimedia presentations 		Standard 6 Technology and Concepts	Information & Communication Technologies (ICT): Use technology as a tool to research, organize, evaluate and communicate information.
With assistance, create simple multimedia products		Standard 2 Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge	Standard 1 Creativity and Innovation Standard 6 Technology and Concepts	Information Literacy: Use information accurately and creatively for the issue or problem at hand.

ICT BENCHMARKS FOR GRADE 3

Londonderry Elementary Schools

Londonderry School District Benchmarks	Skills Included	AASL	ISTE	P21
With assistance, identify questions needed to solve an information problem	<ul style="list-style-type: none"> • With assistance develop questions and follow-up questions • With assistance identify key-words about the topic, problem or question 	Standard 1 Inquire, think critically, and gain knowledge Standard 4 Pursue personal and aesthetic growth	Standard 3 Research and Information Fluency	Critical Thinking and Problem Solving: Identify and ask significant questions that clarify various points of view and lead to better solutions.
With assistance locate, evaluate and select appropriate information sources to answer questions	<ul style="list-style-type: none"> • Identify a variety of information sources- books, periodicals, electronic resources, Internet • Demonstrate the use of an atlas, dictionary, and encyclopedia • Determine the appropriate source for the information question • With assistance locate and retrieve print materials in the library 	Standard 1 Inquire, think critically, and gain knowledge Standard 2 Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge Standard 4 Pursue personal and aesthetic growth	Standard 3 Research Information Fluency	Information Literacy: Access information efficiently (time) and effectively (sources). Information Literacy: Manage the flow of information from a wide variety of sources
Understand the basic organizational structure of a book for accessing information	<ul style="list-style-type: none"> • Demonstrate the use of the table of contents • With assistance, use alphabetical indices or menus to access print and electronic resources 	Standard 1 Inquire, think critically, and gain knowledge Standard 4 Pursue personal and aesthetic growth		Information Literacy: Access information efficiently (time) and effectively (sources).
Demonstrate the ethical use of information	<ul style="list-style-type: none"> • With assistance, complete a bibliography citation • With assistance, identify keywords and phrases to record information (note-taking) • Define plagiarism 	Standard 1 Inquire, think critically, and gain knowledge Standard 3 Share knowledge and participate ethically and productively as members of our democratic society Standard 4 Pursue personal and aesthetic growth	Standard 5 Digital Citizenship	Information & Communication Technologies (ICT): Apply a fundamental understanding of the ethical/legal issues surrounding the access and the use of information technologies. Information Literacy: Manage the flow of information from a wide variety of sources
Use classroom technology effectively	<ul style="list-style-type: none"> • Demonstrate basic knowledge of a computer keyboard • Identify basic components of a computer • Demonstrate proper handling and use of computers and software • Demonstrate use of (word processing, graphic organizers, and multimedia software) 	Standard 1 Inquire, think critically, and gain knowledge	Standard 6 Technology and Concepts	Information & Communication Technologies (ICT): Use technology as a tool to research, organize, evaluate and communicate information.

	<ul style="list-style-type: none"> • Save documents to the appropriate place 			
Use word processing to create a written product	<ul style="list-style-type: none"> • Create, edit, save, and print a word processing document • Demonstrate appropriate use of formatting tools (Font, size, color, margins) 	Standard 1 Inquire, think critically, and gain knowledge	Standard 1 Creativity and Innovation Standard 6 Technology and Concepts	Information & Communication Technologies (ICT): Use technology as a tool to research, organize, evaluate and communicate information.
With assistance, create a multimedia presentation	<ul style="list-style-type: none"> • Insert media such as text, pictures, sound and graphics • Edit Multimedia presentations • Play multimedia presentations 	Standard 2 Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge	Standard 1 Creativity and Innovation Standard 6 Technology and Concepts	Information & Communication Technologies (ICT): Use technology as a tool to research, organize, evaluate and communicate information. Information Literacy: Use information accurately and creatively for the issue or problem at hand.

ICT BENCHMARKS FOR GRADE 4

Londonderry Elementary Schools

Londonderry School District Benchmark	Skills Included	AASL	ISTE	P21
With assistance, identify questions needed to solve an information problem	<ul style="list-style-type: none"> Brainstorm to develop a set of questions, which are carefully aligned and focused on a main idea or essential question 	Standard 1 Inquire, think critically, and gain knowledge Standard 4 Pursue personal and aesthetic growth	Standard 3 Research and information fluency Standard 4 Critical thinking, problem solving, and decision making	Critical Thinking and Problem Solving: Identify and ask significant questions that clarify various points of view and lead to better solutions.
Identify and locate the appropriate sources of information	<ul style="list-style-type: none"> Search an on-line catalog to locate materials Understand how to use call numbers to locate materials With assistance use search engines and data bases to locate appropriate web sites 	Standard 1 Inquire, think critically, and gain knowledge Standard 4 Pursue personal and aesthetic growth	Standard 3 Research and Information Fluency	Information Literacy: Access information efficiently (time) and effectively (sources). Information Literacy: Manage the flow of information from a wide variety of sources.
Demonstrate the ability to access specific information from within a variety of resources	<ul style="list-style-type: none"> With assistance identify keywords for locating information With assistance demonstrate the use of an index and the table of contents within print resources With assistance navigate within a web site to locate specific information 	Standard 1 Inquire, think critically, and gain knowledge Standard 4 Pursue personal and aesthetic growth	Standard 3 Research and Information Fluency	Information Literacy: Access information efficiently (time) and effectively (sources). Information Literacy: Manage the flow of information from a wide variety of sources.
Extract and organize appropriate information about a problem, topic or question	<ul style="list-style-type: none"> With assistance, identify keywords and phrases to record information (note-taking) Organize notes and ideas to support the topic or question 	Standard 1 Inquire, think critically, and gain knowledge Standard 2 Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge Standard 4 Pursue personal and aesthetic growth	Standard 3 Research and Information Fluency	Information Literacy: Manage the flow of information from a wide variety of sources
Demonstrate the ethical use of information	<ul style="list-style-type: none"> With assistance, complete a bibliography citation With assistance, identify keywords and phrases to record information (note-taking) Define plagiarism 	Standard 1 Inquire, think critically, and gain knowledge Standard 3 Share knowledge and participate ethically and productively as	Standard 3 Research and Information Fluency Standard 5 Digital Citizenship	Information Literacy: Manage the flow of information from a wide variety of sources. Information & Communication Technologies (ICT): Apply a fundamental understanding of the ethical/legal issues

		members of our democratic society Standard 4 Pursue personal and aesthetic growth		surrounding the access and the use of information technologies.
Present information from multiple sources to answer an information problem (synthesis)	<ul style="list-style-type: none"> Identify facts which support main idea Draw conclusions based on facts Create new knowledge and understandings to complete the information task 	Standard 1 Inquire, think critically, and gain knowledge Standard 2 Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge Standard 3 Share knowledge and participate ethically and productively as members of our democratic society Standard 4 Pursue personal and aesthetic growth	Standard 1 Creativity and Innovation Standard 4 Critical thinking, problem solving, and decision making	Critical Thinking and Problem Solving: Identify and ask significant questions that clarify various points of view and lead to better solutions.
Demonstrate proper keyboarding techniques	<ul style="list-style-type: none"> Use both hands when keyboarding Hands are in the home row position 		Standard 6 Technology and Concepts	Information & Communication Technologies (ICT): Use technology as a tool to research, organize, evaluate and communicate information.
Electronically edit and revise word-processing	<ul style="list-style-type: none"> Demonstrate appropriate use of formatting tools (Font, size, color, margins) Appropriately use the on-line dictionary and thesaurus Uses the edit functions appropriately (copy, paste, cut) 	Standard 2 Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge	Standard 1 Creativity and innovation Standard 6 Technology and Concepts	Information & Communication Technologies (ICT): Use technology as a tool to research, organize, evaluate and communicate information.
Demonstrate and understanding of technology systems, concepts and operations	<ul style="list-style-type: none"> Save and locate files Name files appropriately Use “end task” or “forced quit” when appropriate 		Standard 6 Technology and Concepts	Information & Communication Technologies (ICT): Use technology as a tool to research, organize, evaluate and communicate information.
Use spreadsheets to organize data and to produce charts/graphs	<ul style="list-style-type: none"> Enter data Format charts/graphs 	Standard 2 Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge	Standard 1 Creativity and innovation Standard 6 Technology and Concepts	Information & Communication Technologies (ICT): Use digital technologies, communication/networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge

				economy.
Create a simple multimedia presentation that includes text, graphics, and sound	<ul style="list-style-type: none"> • Insert media such as text, pictures, sound, and graphics • Edit multimedia presentations • Present multimedia presentations 	<p>Standard 2 Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge</p>	<p>Standard 1 Creativity and innovation Standard 6 Technology and Concepts</p>	<p>Information & Communication Technologies (ICT): Use digital technologies, communication/networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy. Communication and Collaboration: Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts. Creativity and Innovation: Develop, implement and communicate new ideas to others effectively.</p>

ICT BENCHMARKS FOR GRADE 5

Londonderry Elementary Schools

Londonderry School District Benchmark	Skills Included	AASL	ISTE	P21
Identify questions needed to solve an information problem	<ul style="list-style-type: none"> Brainstorm to develop a set of questions, which are carefully aligned and focused on a main idea or essential question 	<p>Standard 1 Inquire, think critically, and gain knowledge</p> <p>Standard 4 Pursue personal and aesthetic growth</p>	<p>Standard 3 Research and Information Fluency</p> <p>Standard 4 Critical Thinking, Problem Solving, and Decision Making</p>	<p>Critical Thinking and Problem Solving: Identify and ask significant questions that clarify various points of view and lead to better solutions.</p>
Identify and locate the appropriate sources of information	<ul style="list-style-type: none"> Search an on-line catalog to locate materials Understand how to use call numbers to locate materials Use search engines and data bases to locate appropriate web sites 	<p>Standard 1 Inquire, think critically, and gain knowledge</p> <p>Standard 4 Pursue personal and aesthetic growth</p>	<p>Standard 3 Research and Information Fluency</p>	<p>Information Literacy: Access information efficiently (time) and effectively (sources).</p> <p>Information Literacy: Manage the flow of information from a wide variety of sources.</p>
Demonstrate the ability to access specific information from within a variety of resources	<ul style="list-style-type: none"> Identify keywords for locating information Demonstrate the use of an index, table of contents, and glossary within print resources Navigate within a web site to locate specific information 	<p>Standard 1 Inquire, think critically, and gain knowledge</p> <p>Standard 4 Pursue personal and aesthetic growth</p>	<p>Standard 3 Research and Information Fluency</p>	<p>Information Literacy: Access information efficiently (time) and effectively (sources).</p> <p>Information Literacy: Manage the flow of information from a wide variety of sources.</p>
Extract and organize appropriate information about a problem, topic, or question	<ul style="list-style-type: none"> Identify keywords and phrases to record information (note-taking) Organize notes and ideas to support the topic or question 	<p>Standard 1 Inquire, think critically, and gain knowledge</p> <p>Standard 2 Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge</p> <p>Standard 4 Pursue personal and aesthetic growth</p>	<p>Standard 3 Research and Information Fluency</p>	<p>Information Literacy: Manage the flow of information from a wide variety of sources.</p>

Demonstrate the ethical use of information	<ul style="list-style-type: none"> Independently complete bibliography citations Identify keywords and phrases to record information (note-taking) Be able to define plagiarism 	<p>Standard 1 Inquire, think critically, and gain knowledge</p> <p>Standard 3 Share knowledge and participate ethically and productively as members of our democratic society</p> <p>Standard 4 Pursue personal and aesthetic growth</p>	<p>Standard 3 Research and Information Fluency</p> <p>Standard 5 Digital Citizenship</p>	<p>Information & Communication Technologies (ICT): Apply a fundamental understanding of the ethical/legal issues surrounding the access and the use of information technologies.</p>
Present information from multiple sources to answer an information problem (synthesis)	<ul style="list-style-type: none"> Identify facts which support main idea Draw conclusions based on facts Create new knowledge and understandings to complete the information task 	<p>Standard 1 Inquire, think critically, and gain knowledge</p> <p>Standard 2 Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge</p> <p>Standard 3 Share knowledge and participate ethically and productively as members of our democratic society</p> <p>Standard 4 Pursue personal and aesthetic growth</p>	<p>Standard 1 Creativity and Innovation</p> <p>Standard 4 Critical Thinking, Problem Solving, and Decision Making</p>	<p>Critical Thinking and Problem Solving: Identify and ask significant questions that clarify various points of view and lead to better solutions.</p> <p>Critical Thinking and Problem Solving: Synthesize and make connections between information and arguments.</p>
Demonstrate proper keyboarding techniques	Use both hands when keyboarding Hands are in the home row position		<p>Standard 6 Technology and Concepts</p>	<p>Information & Communication Technologies (ICT): Use technology as a tool to research, organize, evaluate and communicate information.</p>
Use spreadsheets to organize data and to produce charts/graphs	<ul style="list-style-type: none"> Enter data Format chart/graph 		<p>Standard 6 Technology and Concepts</p>	<p>Information & Communication Technologies (ICT): Use digital technologies, communication/networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy.</p>
Use a database to access and organize information	<ul style="list-style-type: none"> Explain what a "field" is Enter data Sort data 		<p>Standard 6 Technology and Concepts</p>	<p>Information & Communication Technologies (ICT): Use digital technologies, communication/networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy.</p>
Identify peripheral devices and demonstrate their uses	<ul style="list-style-type: none"> Use appropriate settings Transfer image to computer 		<p>Standard 6 Technology and</p>	<p>Information & Communication Technologies (ICT): Use digital</p>

(including but not limited to printer, scanners, and digital cameras)			Concepts	technologies, communication/networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy.
Demonstrate an understanding of technology systems, concepts, and operations	<ul style="list-style-type: none"> • Create, organize, store, and back-up data • Name files appropriately • Use “end task” or “forced quit” when appropriate 		Standard 6 Technology and Concepts	
Create a multimedia presentation that includes text, graphics, and sound	<ul style="list-style-type: none"> • Insert media such as text, pictures, sound and graphics • Edit multimedia presentations • Present multimedia presentations 	Standard 3 Share knowledge and participate ethically and productively as members of our democratic society	Standard 1 Creativity and Innovation Standard 6 Technology and Concepts	<p>Information & Communication Technologies (ICT): Use digital technologies, communication/networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy.</p> <p>Communication and Collaboration: Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts.</p> <p>Creativity and Innovation: Develop, implement and communicate new ideas to others effectively.</p>

ICT BENCHMARKS FOR GRADE 6

Londonderry Middle School

Londonderry School District Benchmark	Skills Included	AASL	ISTE	P21
Locate and use a variety of information resources to fulfill the research task.	<ul style="list-style-type: none"> Find, evaluate and select appropriate print and /or digital resources to complete the research task. Evaluate information for accuracy and validity. Search the online library catalog to locate resources in the Library Media Center. 	<p>Standard 1: Inquire, think critically, and gain knowledge.</p>	<p>Standard 4 Critical thinking, problem solving, and decision making Standard 3 Research and information fluency</p>	<p>Learning and Innovation Skills: Critical thinking and problem solving: Identify and ask significant questions that clarify various points of view and lead to better solutions; Effectively analyze and evaluate evidence, arguments, claims and benefits. Information, Media and Technology Skills Information Literacy: Access information efficiently (time) and effectively (sources); Evaluate information critically and competently.</p>
With guidance, develop essential and open ended questions pertaining to topic.	<ul style="list-style-type: none"> Develop and refine questions which are relevant to the topic. Develop questions which promote deeper understanding of topic. 	<p>Standard 1: Inquire, think critically, and gain knowledge.</p>	<p>Standard 4 Critical thinking, problem solving, and decision making</p>	<p>Learning and Innovation Skills: Critical thinking and problem solving: Identify and ask significant questions that clarify various points of view that lead to better solutions.</p>
Identify key words to locate relevant information from a variety of information resources.	<ul style="list-style-type: none"> Use background knowledge as a context for new learning Extract information which is relevant to the specific question or topic. 	<p>Standard 1: Inquire, think critically, and gain knowledge.</p>	<p>Standard 4 Critical thinking, problem solving, and decision making. Standard 3 Research and information fluency</p>	<p>Learning and Innovation Skills: Critical thinking and problem solving: effectively analyze and evaluate evidence, arguments, claims and benefits; Analyze and evaluate major alternative points of view. Information, Media and Technology Skills Information Literacy: Evaluate information critically and competently; manage the flow of information from a wide variety of sources</p>
Record information using keywords and phrases (note taking).	<ul style="list-style-type: none"> Organize knowledge so it is useful to the research task. Demonstrate knowledge of graphic organizer. 	<p>Standard 2: Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.</p>	<p>Standard 1: Creativity and innovation. Standard 3 Research and information fluency.</p>	<p>Information, Media and Technology Skills Information Literacy: Evaluate information critically and competently; manage the flow of information from a wide variety of sources; Use information accurately and creatively for the issue or problem at hand.</p>

Use the appropriate bibliography format for all resources used including quotations, images, and sound.	<ul style="list-style-type: none"> • Create a complete works cited page which acknowledges the use of a variety of resources. 	Standard 3: Share knowledge and participate ethically and productively as members of our democratic society.	Standard 5: Digital Citizenship	Information, Media and Technology Skills Information Literacy: Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information.
Utilize the basic features of a word processing program in order to communicate new knowledge in a related content area.	<ul style="list-style-type: none"> • Use the writing process to express thoughts and ideas effectively. 	Standard 2: Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.	Standard 2: Communication and Collaboration	Learning and Innovation Skills Critical thinking and problem solving: Reflect critically on learning experiences and processes. Communication and Collaboration: Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts.
Create and present a multimedia product to convey new knowledge in a related content area.	<ul style="list-style-type: none"> • Use technology as a tool to research, organize and communicate information. • Use technology to create products which express thoughts and ideas effectively. 	Standard 2: Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge. Standard 3: Share knowledge and participate ethically and productively as members of our democratic society.	Standard 2: Communication and Collaboration Standard 4: Critical Thinking, problem solving, and decision making.	Learning and Innovation Skills Communication and Collaboration: Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts. Information, Media and Technology Skills Media Literacy: Understand and utilize the most appropriate media creation tools, characteristics and conventions.
Use a spreadsheet to create and manipulate data to convey new knowledge in a related content area.	<ul style="list-style-type: none"> • Use technology as a tool to research, organize and communicate information. • Use technology to create products which express thoughts and ideas effectively. 	Standard 2: Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.	Standard 1: Creativity and innovation	Information, Media and Technology Skills Information Literacy: Use information accurately and creatively for the issue or problem at hand. Media Literacy: Understand and utilize the most appropriate media creation tools, characteristics and conventions. Life and Career Skills Productivity and Accountability: Demonstrate additional attributes associated with producing high quality products
Use digital tools to communicate and work collaboratively to support content area learning.	<ul style="list-style-type: none"> • Use technology and other information tools to analyze and organize information. • Use technology, writing or speaking skills to express thoughts and ideas effectively. 	Standard 2: Draw conclusions, make informed decisions, apply knowledge to new situations, and create new	Standard 2: Communication and Collaboration	Learning and Innovation Skills Communication and Collaboration: Articulate thoughts and ideas effectively using oral, written and nonverbal

		<p>knowledge.</p> <p>Standard 3: Share knowledge and participate ethically and productively as members of our democratic society.</p>		<p>communications in a variety of forms and contexts</p> <p>Information, Media and Technology Skills Information Literacy: Use information accurately and creatively for the issue or problem at hand.</p> <p>Life and Career Skills Productivity and Accountability: Demonstrate additional attributes associated with producing high quality products</p>
<p>Demonstrate ethical use of creative works and information when creating new products or communicating new knowledge</p>	<ul style="list-style-type: none"> • Use information and technology ethically and responsibly. • Demonstrate knowledge of intellectual property and copyright restrictions for a variety of resources. 	<p>Standard 3: Share knowledge and participate ethically and productively as members of our democratic society.</p>	<p>Standard 5: Digital Citizenship</p>	<p>Life and Career Skills Leadership and Responsibility: Demonstrate integrity and ethical behavior in using influence and power. Information, Media and Technology Skills Information Literacy: Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information. Media Literacy: Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information.</p>
<p>Read, views and listens for aesthetic and personal growth.</p>	<ul style="list-style-type: none"> • Read a variety of genres • Make connections between self, text and world. 	<p>Standard 4: Pursue personal and aesthetic growth.</p>		<p>Life and Career Skills Be Self Directed Learners: Demonstrate commitment to learning as a lifelong process; Go beyond basic mastery of skills and/or curriculum to explore and expand one's own learning as opportunities to gain expertise.</p>

ITC BENCHMARKS FOR GRADE 7

Londonderry Middle School

Londonderry School District Benchmark	Skills Included	AASL	ISTE	P21
Develop essential and open ended questions pertaining to topic.	<ul style="list-style-type: none"> Develop a range of questions which are relevant to the topic. 	<p>Standard 1: Inquire, think critically, and gain knowledge.</p>	<p>Standard 3 Research and information fluency Standard 4 Critical thinking, problem solving, and decision making</p>	<p>Learning and Innovation Skills Critical thinking and problem solving: Identify and ask significant questions that clarify various points of view and lead to better solutions</p>
Develop and refine research questions in response to information gathered.	<ul style="list-style-type: none"> Refine questions so they are aligned with the main focus of the research topic. 	<p>Standard 1: Inquire, think critically, and gain knowledge.</p>	<p>Standard 3 Research and information fluency Standard 4 Critical thinking, problem solving, and decision making</p>	<p>Learning and Innovation Skills Think Creatively: Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts Critical Thinking and Problem Solving: Effectively analyze and evaluate evidence, arguments, claims and benefits; Interpret information and draw conclusions based on best analysis. Information, Media and Technology Skills Information Literacy: Evaluate information critically and competently</p>
Use advanced search tools in digital information resources.	<ul style="list-style-type: none"> Determine useful keywords. Determine specific information needs of research task, e.g. currency of information or source. 	<p>Standard 1: Inquire, think critically, and gain knowledge.</p>	<p>Standard 3 Research and information fluency Standard 4 Critical thinking, problem solving, and decision</p>	<p>Information, Media and Technology Skills Information & Communications Technologies: Use technology as a tool to research, organize, evaluate and communicate information</p>

			making	
Create and present a multimedia product to convey new knowledge in a related content area.	<ul style="list-style-type: none"> Use technology as a tool to research, organize and communicate information. Use technology to create products which express thoughts and ideas effectively. 	<p>Standard 2: Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.</p> <p>Standard 3: Share knowledge and participate ethically and productively as members of our democratic society.</p>	<p>Standard 2: Communication and Collaboration</p> <p>Standard 4: Critical Thinking, problem solving, and decision making.</p>	<p>Learning and Innovation Skills: Communication and Collaboration: Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts;</p> <p>Information, Media and Technology Skills Media Literacy: Understand and utilize the most appropriate media creation tools, characteristics and conventions.</p>
Use a spreadsheet to create and manipulate data to convey new knowledge in a related content area.	<ul style="list-style-type: none"> Use technology as a tool to research, organize and communicate information. Use technology to create products which express thoughts and ideas effectively. 	<p>Standard 2: Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.</p>	<p>Standard 1: Creativity and innovation</p>	<p>Information, Media and Technology Skills Information Literacy: Use information accurately and creatively for the issue or problem at hand.</p> <p>Media Literacy: Understand and utilize the most appropriate media creation tools, characteristics and conventions.</p> <p>Life and Career Skills Productivity and Accountability: Demonstrate additional attributes associated with producing high quality products including the abilities to</p>
Demonstrate ethical use of creative works and information when creating new products or communicating new knowledge.	<ul style="list-style-type: none"> Use information and technology ethically and responsibly. Demonstrate knowledge of intellectual property and copyright restrictions in a variety of resources. 	<p>Standard 3: Share knowledge and participate ethically and productively as members of our democratic society.</p>	<p>Standard 5: Digital Citizenship</p>	<p>Life and Career Skills Leadership and Responsibility: Demonstrate integrity and ethical behavior in using influence and power.</p> <p>Information, Media and Technology Skills Information Literacy: Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information.</p> <p>Media Literacy: Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information.</p>
Reads, views and listens for aesthetic and personal growth.	<ul style="list-style-type: none"> Read a variety of genres Make connections between self, text, and world. 	<p>Standard 4 Pursue personal and aesthetic growth.</p>		<p>Life and Career Skills Be Self Directed Learners: Demonstrate commitment to learning as a lifelong process; Go beyond basic mastery of skills and/or curriculum to</p>

				explore and expand one's own learning as opportunities to gain expertise.
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ITC BENCHMARKS FOR GRADE 8

Londonderry Middle School

Londonderry School District Benchmarks	Skills Included	AASL	ISTE	P21
Identify misconceptions, conflicting information, and point of view or bias from information resources.	<ul style="list-style-type: none"> Engage in inquiry based research by applying critical thinking skills. 	<p>Standard 2: Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.</p>	<p>Standard 3: Research and information fluency</p>	<p>Learning and Innovation Skills: Critical thinking and problem solving: Identify and ask significant questions that clarify various points of view and lead to better solutions Information, Media and Technology Skills Information Literacy: Evaluate information critically and competently</p>
Select the most useful information resources to fulfill specific research needs.	<ul style="list-style-type: none"> Find, evaluate and select appropriate resources to fulfill research task. Evaluate information for accuracy and validity. 	<p>Standard 1: Inquire, think critically, and gain knowledge.</p>	<p>Standard 3: Research and information fluency. Standard 4: Critical thinking, problem solving, and decision making</p>	<p>Learning and Innovation Skills Critical thinking and problem solving: Identify and ask significant questions that clarify various points of view and lead to better solutions; effectively analyze and evaluate evidence, arguments, claims and benefits. Information, Media and Technology Skills Information Literacy: Access information efficiently (time) and effectively (sources); evaluate information critically and competently.</p>
Use a variety of note taking strategies.	<ul style="list-style-type: none"> Utilize appropriate format to organize knowledge so that it is useful to the completion of the research task. Draw conclusions and develop solutions 	<p>Standard 2: Draw conclusions, make informed decisions, apply knowledge to new situations, and create new</p>	<p>Standard 1: Creativity and innovation Standard 3:</p>	<p>Learning and Innovation Skills: Critical thinking and problem solving: Effectively analyze and evaluate evidence, arguments, claims and</p>

	based on information.	knowledge.	Research and information fluency	benefits; interpret information and draw conclusions on the best analysis. Information, Media and Technology Skills Information Literacy: Evaluate information critically and competently; manage the flow of information from a wide variety of sources; use information accurately and creatively for the issue or problem at hand.
Create and present a multimedia product to convey new knowledge in a related content area.	<ul style="list-style-type: none"> Use technology as a tool to research, organize and communicate information. Use technology to create products which express thoughts and ideas effectively. 	<p>Standard 2: Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.</p> <p>Standard 3: Share knowledge and participate ethically and productively as members of our democratic society.</p>	<p>Standard 2: Communication and Collaboration</p> <p>Standard 4: Critical Thinking, problem solving, and decision making.</p>	<p>Learning and Innovation Skills: Communication and Collaboration: Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts;</p> <p>Information, Media and Tech Skills Media Literacy: Understand and utilize the most appropriate media creation tools, characteristics and conventions.</p>
Use a spreadsheet to create and manipulate data to convey new knowledge in a related content area.	<ul style="list-style-type: none"> Use technology as a tool to research, organize and communicate information. Use technology to create products which express thoughts and ideas effectively. 	<p>Standard 2: Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.</p>	<p>Standard 1: Creativity and innovation</p>	<p>Information, Media and Technology Skills Information Literacy: Use information accurately and creatively for the issue or problem at hand.</p> <p>Media Literacy: Understand and utilize the most appropriate media creation tools, characteristics and conventions.</p> <p>Life and Career Skills Productivity and Accountability: Demonstrate additional attributes associated with producing high quality products including the abilities to</p>
Use digital tools to communicate and work collaboratively to support content area learning.	<ul style="list-style-type: none"> Use technology and other information tools to analyze and organize information. Use technology, writing or speaking skills to express thoughts and ideas effectively 	<p>Standard 2: Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.</p> <p>Standard 3: Share knowledge and participate ethically and productively as members of our democratic society.</p>	<p>Standard 2: Communication and collaboration.</p> <p>Standard 6: Technology operations and concepts.</p>	<p>Learning and Innovation Skills Creativity and Innovation: Develop, implement and communicate new ideas to others effectively</p> <p>Communication and Collaboration: Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts.</p> <p>Information, Media and Technology Skills ICT Literacy: Use technology as a tool to research, organize, evaluate and</p>

				communicate information.
Read, views and listens for aesthetic and personal growth.	<ul style="list-style-type: none"> • Read a variety of genres • Make connections between self, text and world. 	Standard 4: Pursue personal and aesthetic growth.		Life and Career Skills Be Self Directed Learners: Demonstrate commitment to learning as a lifelong process; Go beyond basic mastery of skills and/or curriculum to explore and expand one's own learning as opportunities to gain expertise.

ICT BENCHMARKS FOR GRADES 9 – 12

Londonderry High School

Londonderry School District Benchmark	Skills Included	AASL	ISTE	P21
Independently formulates topic, question or problem to be researched, incorporating existing knowledge and revising topic according to information gathered.	<ul style="list-style-type: none"> • Developing questions • Determining topics/subtopics • Determining keywords • Revising questions when needed 	<p>Standard 1 Inquire, think critically and gain knowledge</p>	<p>Standard 1 Creativity and Innovation Standard 3 Research and Information Fluency Standard 4 Critical Thinking, Problem Solving, and Decision Making</p>	<p>Learning & Innovation Skills Creativity & Innovation: Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize efforts and create new and worthwhile ideas (both incremental and radical concepts), use a wide range of idea creation techniques (such as brainstorming). Critical Thinking & Problem Solving: Use various types of reasoning (inductive, deductive, etc. as appropriate to the situation and identify and ask significant questions that clarify various points of view and lead to better solutions.</p>
Develops appropriate search strategies to efficiently locate information in digital or other formats and evaluates and selects information appropriate to the topic.	<ul style="list-style-type: none"> • Recognizing type of information needed • Identifying a variety of sources of information • Understanding the organization of digital and print information sources • Determining relevancy of information • Determining authority/credibility • Determining bias • Determining currency 	<p>Standard 1 Inquire, think critically and gain knowledge</p>	<p>Standard 3 Research and Information Fluency Standard 4 Critical Thinking, Problem Solving, and Decision Making Standard 6 Technology Operations and Concepts</p>	<p>Information, Media & Technology Skills Information Literacy: Access information efficiently (time) and effectively (sources), evaluate information critically and competently. Use information accurately and creatively for the issue or problem at hand, manage the flow of information from a wide variety of sources Media Literacy: Understand both how and why media messages are constructed, and for what purpose, examine how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors. Learning & Innovation Skills Critical Thinking & Problem Solving: Analyze and evaluate</p>

				major alternative points of view, synthesize and make connections between information and arguments, interpret information and draw conclusions based on the best analysis, reflect critically on learning experiences and processes.
Uses appropriate digital tools to collect, organize and analyze information and/or data related to question or problem to be researched	<ul style="list-style-type: none"> • Selecting appropriate digital tool or application for task • Selecting and using method for recording information and data • Keeping accurate records for data and resources used. • Using digital tools to share information and work collaboratively with others 	Standard 2 Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.	Standard 2 Communication and Collaboration Standard 3 Research and Information Fluency Standard 4 Critical Thinking, Problem Solving, and Decision Making Standard 6 Technology Operations and Concepts	Information, Media & Technology Skills Media Literacy: Manages the flow of information from a wide variety of sources, use information accurately and creatively for the issue or problem at hand. ICT Literacy: Use technology as a tool to research, organize, evaluate and communicate information, use digital technologies (computers, PDAs, media players, GPS, etc.), communication/networking tools and social networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy. Communication and collaboration: Utilize multiple media and technologies, and know how to judge their effectiveness as well as assess their impact.
Synthesizes facts, opinions, and/or data appropriate to the question or problem and develops new understanding	<ul style="list-style-type: none"> • Drawing conclusions based on information • Developing solutions or making decisions based on information • Collaborating with others to exchange ideas • Creating products to express new knowledge 	Standard 2 Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.	Standard 1 Creativity and Innovation Standard 2 Communication and Collaboration Standard 3 Research and Information Fluency Standard 4 Critical Thinking, Problem Solving, and Decision	Learning & Innovation Skills Critical Thinking & Problem Solving: Use various types of reasoning (inductive, deductive, etc.) as appropriate to the situation, analyze and evaluate major alternative points of view, synthesize and make connections between information and arguments, interpret information and draw conclusions based on

			Making	the best analysis, solve different kinds of non-familiar problems in both conventional and innovative ways, effectively analyze and evaluate evidence, arguments, claims and beliefs, analyze and evaluate major alternative points of view. Creativity and Innovation: Demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas.
Uses information and technology responsibly and ethically	<ul style="list-style-type: none"> Using complete bibliographic citations to acknowledge intellectual property of others Adhering to copyright restrictions for print and digital sources Using technology in a safe, legal and responsible manner 	Standard 3 Share knowledge and participate ethically and productively as members of our democratic society	Standard 5 Digital Citizenship	Life and Career Skills Leadership & Responsibility: Act responsibly with the interests of the larger community in mind Information, Media and Technology Skills Media Literacy: Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of media Information Literacy: Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information. ICT Literacy: Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information technologies.
Londonderry School District Benchmark	Skills Included	AASL	ISTE	P21
Communicates and/or demonstrates the knowledge gained	<ul style="list-style-type: none"> Utilizing appropriate format/organization Adapting to needs or characteristics of audience Using appropriate digital tool to display or communicate new knowledge. Conveying the knowledge in ways others can use and assess. 	Standard 3 Share knowledge and participate ethically and productively as members of our democratic society	Standard 2 Communication and Collaboration Standard 6 Technology Operations and Concepts	Information, Media & Technology Skills Media Literacy: Examine how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors. Learning and Innovation Skills Creativity and Innovation:

				<p>Develop, implement and communicate new ideas to others effectively, demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas.</p> <p>Communication and collaboration: Utilize multiple media and technologies, and know how to judge their effectiveness as well as assess their impact.</p>
<p>Reads, views and listens for aesthetic and personal growth</p>	<ul style="list-style-type: none"> • Reading widely in various formats and genres • Making connections to self and the larger community • Using creative and artistic formats to express learning and new knowledge. 	<p>Standard 4 Pursue personal and aesthetic growth</p>		<p>Life and Career Skills Social & Cross-Cultural Skills: Know when it is appropriate to listen and when to speak, respond open-mindedly to different ideas and values, leverage social and cultural differences to create new ideas and increase both innovation and quality of work. Guide and Lead others: inspire others to reach their very best via example and selflessness.</p> <p>Learning & Innovation Skills Creativity and Innovation: Demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas, view failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes.</p>

Glossary

Londonderry School District ICT Benchmarks

Advanced Search Tool - tools to narrow the search to obtain specific information being requested.

Bibliography - list of information resources used.

Bibliographic format - specific arrangement of publication details for information resources used in research. Examples of major formats are MLA, and APA. The MLA format is the one primarily used by students in the Londonderry School District.

Content area - subjects studied as part of the school curriculum: ex. language arts, social studies, science, math etc.

Digital file - information stored in digital format such as a word processing document, spreadsheet, graphic organizer, image or sound.

Digital Information Resource - information found on the world wide web, in software, in information databases or an online catalog.

Digital Tool - any computer-related means to manipulate information. Includes software applications, devices such as calculators and probes, online environments such as wikis, blogs, information storehouses and videoconferencing.

Essential question - question that does not have an answer that can be easily found; rather it requires critical thinking and creativity to construct the answer.

Formatting -The appearance or presentation of a document. It can include such things as fonts, alignment, spacing, margins and bullets.

Information resource - textual, visual or audio information in digital or print format.

Intellectual property - creative works or ideas such as music, literature or images which come under the ownership of the copyright holder.

Key word - a descriptive or significant word that relates to the topic being studied. It is a word that can be used to search for other words or information related to the topic.

Multimedia Product - A product which contains multiple types of media and may incorporate textual information, visual, and audio components.

New knowledge – the ability to express new personal thoughts and ideas effectively.

Note Taking - recording relevant information using keywords and phrases.

Open ended question - broad questions which require more than one or two word responses and encourages a full, meaningful answer.

Plagiarism - using someone else's words or ideas as though they were your own; not giving credit to

the originator of the information.

Primary source - a work that was created during the time period being studied, or written or produced by an eye-witness to the event. These may include diaries, personal narratives, photographs, sound recordings, video, newspaper reports or numerical data.

Print Resource - information conveyed through traditional printed methods: books, newspapers, magazines, journals, pamphlets, brochures, etc.

Research Task - A learning or inquiry activity which utilizes information resources to solve a problem, answer a question, build understanding and/or construct new knowledge.

Spreadsheet - a computer program used for organizing and analyzing data. A spreadsheet will allow you to organize numbers, make calculations, and create graphs.

Telecommunications - The exchange of voice and/or digital information over distance by electronic means, whether point-to-point or within a networked environment.

Traditional Tools - Research tools which do not use electronic or digital capabilities (i.e. a face to face interview).

With assistance - a one on one teaching experience.

With guidance - a small group teaching activity experience.