Information and Communication Technology—

Essential Learning Outcomes 2015–2016

ICT Primary	ICT 1	ICT 2	ICT 3
ESSENTIAL LEARNING OUTCOMES AND PERFORMANCE INDICATORS			
DIGITAL CITIZENSHIP **Outcome 1:** Students will be expected to understand and demonstrate behaviours that ensure their own and others' health, safety, and privacy.	**DIGITAL CITIZENSHIP** **Outcome 1:** Students will be expected to understand and participate in classroom and school activities establishing safe and healthy routines as they use ICT for learning.	**DIGITAL CITIZENSHIP** **Outcome 1:** Students will be expected to work with the teacher to develop safe routines for using ICT responsibly, ensuring their own and others' health and safety.	**DIGITAL CITIZENSHIP** **Outcome 1:** Students will be expected to demonstrate safe routines for using ICT responsibly, ensuring their own and others' health and safety.
Indicators: • Embedded throughout all curriculum areas.	**Indicators:** • Embedded throughout all curriculum areas.	**Indicators:** • Embedded throughout all curriculum areas.	**Indicators:** • Embedded throughout all curriculum areas.
DIGITAL CITIZENSHIP **Outcome 2.1:** Students will be expected to discuss with the teacher the basic issues related to the responsible and appropriate use of information and communication technology.	**DIGITAL CITIZENSHIP** **Outcome 2.1:** Students will be expected to demonstrate, with teacher assistance, responsible and appropriate use of information and communication technology while participating in online activities lead by the teacher.	**DIGITAL CITIZENSHIP** **Outcome 2.1:** Students will be expected to demonstrate and show understanding of the responsible and appropriate use of information and communication technology while participating in and contributing to their local community.	**DIGITAL CITIZENSHIP** **Outcome 2.1:** Students will be expected to use information and communication technology appropriately and responsibly, with teacher assistance, to address opportunities for the development of active local and global citizenship.
Indicators: • Embedded throughout all curriculum areas.	**Indicators:** • Embedded throughout all curriculum areas	**Indicators:** • Embedded throughout all curriculum areas.	**Indicators:** • Embedded throughout all curriculum areas.
DIGITAL CITIZENSHIP **Outcome 2.2:** Students will be expected to follow simple online safety and behaviour expectations while completing learning tasks.	**DIGITAL CITIZENSHIP** **Outcome 2.2:** Students will be expected to develop, with the teacher, and follow simple online safety and behaviour expectations while completing learning tasks.	**DIGITAL CITIZENSHIP** **Outcome 2.2:** Students will be expected to begin to articulate the need to take care in providing personal information online and only share limited personal information with a teacher-approved audience.	**DIGITAL CITIZENSHIP** **Outcome 2.2:** Students will be expected to articulate the need to take care in providing personal information online, and share personal information only with teacher approval.
Indicators: • Embedded throughout all curriculum areas.	**Indicators:** • Embedded throughout all curriculum areas.	**Indicators:** • Embedded throughout all curriculum areas.	**Indicators:** • Embedded throughout all curriculum areas.

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DIGITAL CITIZENSHIP **Outcome 3:** Students will be expected to show some understanding that individuals own their works and can indicate how their works can be used.	**DIGITAL CITIZENSHIP** **Outcome 3:** Students will be expected to use, with teacher assistance, intellectual property of others within their own work from teacher-selected sites.	**DIGITAL CITIZENSHIP** **Outcome 3:** Students will be expected to begin to understand the ethical implication of using intellectual property and, with teacher assistance, create citations for work used, where needed.	**DIGITAL CITIZENSHIP** **Outcome 3:** Students will be expected to use the intellectual property of others and write simple citations for works used.
Indicators: • Embedded throughout all curriculum areas.	**Indicators:** • Embedded throughout all curriculum areas.	**Indicators:** • Embedded throughout all curriculum areas.	**Indicators:** • Embedded throughout all curriculum areas.
PRODUCTIVITY **Outcome 4:** Students will be expected to, with teacher assistance, use grade-appropriate digital tools to explore ideas, create original works, and represent their learning, both individually and collaboratively.	**PRODUCTIVITY** **Outcome 4:** Students will be expected to, with teacher assistance, use grade-appropriate digital tools to explore ideas, create original works, and represent their learning, both individually and collaboratively.	**PRODUCTIVITY** **Outcome 4:** Students will be expected to use, with teacher support, grade-appropriate digital tools to develop and represent learning, both individually and collaboratively.	**PRODUCTIVITY** **Outcome 4:** Students will be expected to select and use, with teacher support, grade-appropriate digital tools to develop and represent learning for various purposes, both individually and collaboratively.
Indicators: **ENGLISH LANGUAGE ARTS** • create and record questions in both print and/or digital format **SCIENCE** • observe and describe living things in familiar places (e.g., outside) (CT, CI, COM, TF) • ask simple questions about the various ways objects move (CT, CI, COM, TF, CZ) • observe, describe, and determine how objects move by doing guided investigations (such as using ramps, rollers, and sliders) (CT, CI, COM, TF) **SOCIAL STUDIES** • create positive images (both digital and print) to communicate understandings/learnings/ideas about being unique and special (COM, CT, CI, TF) • create positive images (both digital and print) to convey ideas/learnings about groups (school /community) (COM, CT, TF) • use positive images to describe ideas about co-operation in a group [Teacher note: Where appropriate, considering the diversity of Nova Scotia cultures.] (COM,CI, TF, CT)	**Indicators:** **ENGLISH LANGUAGE ARTS** • create print and digital texts (draw or write) with a beginning, middle, and end • work with a partner, in small groups and independently, to create writing in both print and digital format **MATHEMATICS** N04.02 model a given number up to 20 using a variety of pictorial representations (both print and digital) (COM, CT, CI, TF) **SCIENCE** • observe and describe daily changes in weather conditions, including their effects on the environment and on living things (CT, CI, COM, TF, CZ) • observe, and describe the results of changes in the seasons, including their effects on the environment and on living things (CT, CI, COM,TF, CZ) • ask questions about daily and seasonal changes (CT, CI, COM, TF, CZ) • ask questions about materials and their properties (CT, CI, COM, TF, CZ)	**Indicators:** **ENGLISH LANGUAGE ARTS** • create and record questions in both print and/or digital format • work with a partner, in small groups, and independently to create writing • begin to select appropriate print and/or digital graphic organizers from several options • work with a partner, in small groups, and independently, to create writing **SCIENCE** • record information from investigations that use solutions made from simple substances, such as salt and sugar (CT, CI, COM, TF) • observe evaporation and condensation in the environment (CT, CI, COM, TF) • observe and describe the properties of familiar liquids and solids (CT, CI, COM, TF) • report on the motion of constructed objects (CT, CI,COM, TF)	**Indicators:** **ENGLISH LANGUAGE ARTS** • write a variety of poetry, fiction, and non-fiction texts • write an organized text with beginning, middle, and end; write an effective lead, write a descriptive middle, write a satisfying conclusion • select appropriate print and digital graphic organizers from several options • begin to make their own print and digital graphic organizers to plan their writing **MATHEMATICS** N11.06 represent, concretely or pictorially (both print and digital), equal groups for a given number sentence (COM, CT, CI, CZ, PCD, TF) N12.03 illustrate, with counters or a diagram (both print and digital), a given story problem involving equal sharing, presented orally or through shared reading, and solve the problem (COM, CT, CI, CZ, PCD, TF) N12.05 listen to a story problem, represent the numbers using manipulatives or a diagram (both print and digital) and record the problem with a number sentence and/or expression

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• create positive images (both digital and print) to convey perceptions/ideas/learnings of peoples and traditions, historical roots, rituals, and celebrations (COM, CT, PCD, CI, TF) **VISUAL ARTS** • create artworks, individually and in small groups, using a variety of materials and technologies to express emotion and ideas using different kinds of lines, patterns, textures, colours, form, and space (COM, CI, CT, PCD, CZ, TF)	• ask questions about how to construct objects (CT, CI, COM, TF, CZ) • demonstrate how tools can be used to solve a problem (CT, CI, COM, CZ, PCD, TF) **SOCIAL STUDIES** • create positive images (both print and digital) to convey learnings about modern Mi'kmaw communities in Nova Scotia from the point of view and perspective of Mi'kmaw community/people (COM, CT) • create positive images (both print and digital) to convey understandings that all people have wants and needs (COM, CZ, PCD, CI, TF) **VISUAL ARTS** • use a variety of materials, technologies, and unconventional tools to create their own artworks inspired by those examined (COM, CI, CT, PCD, CZ, TF)	**SOCIAL STUDIES** • discuss learnings/perceptions/ideas about changes and their reaction to changes in their lives through listening, speaking, and creating images (COM, CT, PCD, CI, TF) • develop a plan, as a class or in small groups, to support a sustainability issue in the community (COM, CZ, TF, CI, PCD, TF) **VISUAL ARTS** • use a variety of materials and technologies to create art in many forms, inspired by those examined (COM, CI, CT, PCD, CZ, TF)	PR01.06 create a concrete, pictorial (both print and digital), or symbolic representation of an increasing pattern for a given pattern rule (COM, CT, CI, CZ, PCD, TF) PR01.07 create a concrete, pictorial (both print and digital), or symbolic increasing pattern and describe the pattern rule (COM, CT, CI, CZ, PCD, TF) PR02.06 create a concrete, pictorial (both print and digital), or symbolic decreasing pattern for a given pattern rule (COM, CT, CI, CZ, PCD, TF) PR02.07 create a concrete, pictorial (both print and digital), or symbolic decreasing pattern and describe the pattern rule (COM, CT, CI, CZ, PCD, TF) **SCIENCE** • use magnets to construct a functioning or working product that can be used for a purpose (e.g., toy, game, decoration, jewellery) (CT, CI, COM, CZ, PCD, TF) **VISUAL ARTS** • use a variety of materials, technologies, and tools to create art in many forms, inspired by those examined (COM, CI, CT, PCD, CZ, TF)

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COMMUNICATION **Outcome 5:** Students will be expected to begin, with the teacher, to use ICT to share and exchange information.	**COMMUNICATION** **Outcome 5:** Students will be expected to use, with teacher assistance, identified ICT environments to share and exchange information and collaborate with others.	**COMMUNICATION** **Outcome 5:** Students will be expected to use identified ICT environments, with teacher assistance, to share and exchange information and collaborate with others.	**COMMUNICATION** **Outcome 5:** Students will be expected to use identified ICT environments to share and exchange information and collaborate with others for a variety of purposes.
Indicators: **SCIENCE** • make and share observations about sand and water (CT, CI, COM, TF)	**Indicators:** **ENGLISH LANGUAGE ARTS** • (e.g., recounts) and personal opinions in both print and/or digital format; and to inform and communicate information • identify different forms of print and digital writing that are appropriate to specific purposes and audiences • identify print and digital information that is relevant and purposeful for an intended audience **SOCIAL STUDIES** • create positive images (both print and digital) to convey ideas/perceptions/learnings of the diversity of cultural groups (COM, CT, CI, TF) • discuss and share information about cultural groups in the community (COM,CT, CZ) • create positive images and or short phrases (both print and digital) to convey understandings/ ideas/perceptions/learnings of actions to practise responsible behaviour in caring for the environment (COM, PCD, CI, TF) • ask questions and share information about where Aboriginal (Mi'kmaq) communities are located in Nova Scotia and the names of the communities (CT, COM, TF)	**Indicators:** **ENGLISH LANGUAGE ARTS** • create and record questions, both in print and/or digital format • write in both print and/or digital format an organized text with a beginning, middle, and end **SCIENCE** • identify and describe similarities and differences between life cycles of familiar animals (CT, CI, COM, TF) **SOCIAL STUDIES** • explain how individuals and groups have contributed to change in their school or community, including Acadians, African Nova Scotians, Gaels, Mi'kmaq, including Treaty Education, and additional diverse cultures groups in the province (COM, CT, CZ, CI, TF) • discuss and share ideas (both print and digital) about how we make decisions as consumers through listening, speaking, creating images, and using simple words/phrases (COM, CZ, PCD, CI, TF) • convey ideas/perceptions/understandings (both print and digital) about sustainable development and its importance through listening, speaking, and creating a visual (mindful of Mi'kmaw beliefs and practices in relation to the environment) (COM, CZ, PCD, CI, TF)	**Indicators:** **SCIENCE** • observe and describe the composition of a variety of soil samples, sand, loam, clay, and gravel (CT, CI, COM, TF) • observe and describe how living things affect and are affected by soil (CT, CI, COM, TF) • observe and describe how living things affect and are affected by plants (CT, CI, COM, TF) • observe and describe various structures both natural and built (CT, CI, COM, TF CZ) **VISUAL ARTS** • share and discuss their own and others' artworks, using the language of art and posing questions about artist choice and intent (COM, CI, CT, PCD, CZ)

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RESEARCH, INNOVATION, PROBLEM SOLVING, AND DECISION MAKING **Outcome 6:** Students will be expected to discuss ways in which ICT can be used to access information, images, or other digital media.	**RESEARCH, INNOVATION, PROBLEM SOLVING, AND DECISION MAKING** **Outcome 6:** Students will be expected to investigate, with the teacher, ways to locate specific information, images, or other digital media.	**RESEARCH, INNOVATION, PROBLEM SOLVING, AND DECISION MAKING** **Outcome 6:** Students will be expected to demonstrate, with assistance, several ways to locate specific information, images, or other digital media.	**RESEARCH, INNOVATION, PROBLEM SOLVING, AND DECISION MAKING** **Outcome 6:** Students will be expected to demonstrate how to locate specific information, images, or other digital media.
Indicators: **ENGLISH LANGUAGE ARTS** • find information in simple print and digital texts **SCIENCE** • ask simple questions about different living things (CT, CI, COM, TF, CZ) • ask simple questions about various student-selected materials (CT, CI, COM, TF, CZ)	**Indicators:** **ENGLISH LANGUAGE ARTS** • use some text features (e.g., Table of Contents to predict and locate information in a text) • identify print and digital texts that are fiction and those that are non-fiction • gather information from non-fiction print and digital texts and/or other sources • talk about information they have found in print and digital texts about a topic **SCIENCE** • ask questions about daily and seasonal changes (CT, CI, COM, TF, CZ) • ask questions about materials and their properties (CT, CI, COM, TF, CZ) • ask questions about how to construct objects (CT, CI, COM, TF, CZ) **SOCIAL STUDIES** • ask questions and share information about where Aboriginal (Mi'kmaq) communities are located in Nova Scotia and the names of the communities (CT, COM, TF)	**Indicators:** **ENGLISH LANGUAGE ARTS** • use a variety of text features to locate information (table of contents, index) **SCIENCE** • ask questions about air and water in the environment (CT, CI, COM, TF, CZ) • ask questions about animal growth (CT, CI, COM, TF, CZ) • ask questions about the properties and interactions of familiar liquids and solids (CT, CI, COM, TF, CZ) • ask questions about the movement of objects (CT, CI, COM, TF, CZ)	**Indicators:** **ENGLISH LANGUAGE ARTS** • use text features to gather information and support comprehension (captions, diagrams, maps) • use key words in a search engine to locate information electronically • discuss how they researched and found answers to their questions **SCIENCE** • ask questions about the properties of soil (CT, CI, COM, TF, CZ) • ask questions about plant growth (CT, CI, COM, TF, CZ) • ask questions about materials and structures (CT, CI, COM, TF, CZ) • ask questions about invisible forces (CT, CI, COM, TF, CZ)

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			SOCIAL STUDIES • gather information about the location of the province in relation to the Atlantic Canadian region (CT, COM, TF) • deduct ideas and synthesize facts from sources about peoples and cultures in the province, including Acadians, African Nova Scotians, Gaels, Mi'kmaq, including Treaty Education, and additional diverse cultures (CT, COM, PCD) • generate ideas for an action plan to promote positive action among people that includes research and inquiry in regards to people and cultures in the province, including Acadian, African Nova Scotian, Gaels, Mi'kmaq, and additional diverse cultural groups (CT, COM, CZ, PCD, CI) **VISUAL ARTS** • explore art images throughout history and in different cultures to compare how artists create art to communicate ideas, feelings, and understandings (COM, CI, CT, PCD, CZ)

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RESEARCH, INNOVATION, PROBLEM SOLVING, AND DECISION MAKING **Outcome 7:** Students will be expected to interpret simple digital charts and maps.	**RESEARCH, INNOVATION, PROBLEM SOLVING, AND DECISION MAKING** **Outcome 7:** Students will be expected to collect and record, with teacher assistance, data on charts and maps to represent patterns and relationships.	**RESEARCH, INNOVATION, PROBLEM SOLVING, AND DECISION MAKING** **Outcome 7:** Students will be expected to contribute field data entries or other records to a simple database or spreadsheet and, with teacher assistance, create charts or maps from the data.	**RESEARCH, INNOVATION, PROBLEM SOLVING, AND DECISION MAKING** **Outcome 7:** Students will be expected to create and analyze electronic charts, maps, and graphs to predict patterns and relationships in information and to support decision making.
Indicators: **SCIENCE** • record and share observations of a plant and/or animal over time (CT, CI, COM, TF) • observe and describe the characteristics of a collection of materials (CT, CI, COM, TF)	**Indicators:** **SCIENCE** • observe and describe daily changes in weather conditions, including their effects on the environment and on living things (CT, CI, COM, TF, CZ) • observe, and describe the results of changes in the seasons, including their effects on the environment and on living things (CT, CI, COM,TF, CZ) • demonstrate how tools can be used to solve a problem (CT, CI, COM, CZ, PCD, TF)	**Indicators:** **SCIENCE** • use equipment properly to collect data about air and water (CT, CI, COM, TF) • make observations and record data about the life cycle and growth of animals, such as a mealworm, chick, and/or butterfly (CT, CI, COM, TF) • make and record observations and inferences about the movement of various objects (CT, CI, COM, TF) • record information from investigations that use solutions made from simple substances, such as salt and sugar (CT, CI, COM, TF)	**Indicators:** **ENGLISH LANGUAGE ARTS** • use text features to gather information and support comprehension (captions, diagrams, maps) **MATHEMATICS** SP02.02 create bar graphs (both print and digital) from a given set of data including labelling the title and axes (COM, CT, CI, CZ, PCD, TF) **SCIENCE** • make and test predictions, and record observations about materials that can be magnetized or attracted by magnets (CT, CI, COM, TF) **SOCIAL STUDIES** • describe my province's location (both print and digital) in relation to the significant bodies of water surrounding it (COM, CT)
TECHNOLOGY OPERATIONS AND CONCEPTS **Outcome 8:** Students will be expected to, with teacher assistance, • use grade-appropriate ICT terminology • follow verbal instructions and visual reminders to begin safely operating computers and grade-appropriate digital devices	**TECHNOLOGY OPERATIONS AND CONCEPTS** **Outcome 8:** Students will be expected to • use grade-appropriate ICT terminology • follow verbal instructions and visual reminders to safely operate computers and grade-appropriate digital devices	**TECHNOLOGY OPERATIONS AND CONCEPTS** **Outcome 8:** Students will be expected to • use grade-appropriate ICT terminology • follow verbal instructions and visual reminders to safely operate computers and digital devices	**TECHNOLOGY OPERATIONS AND CONCEPTS** **Outcome 8:** Students will be expected to • use grade-appropriate ICT terminology • safely operate *computers* and digital devices
Indicators: • Embedded throughout all curriculum areas.	**Indicators:** • Embedded throughout all curriculum areas.	**Indicators:** • Embedded throughout all curriculum areas.	**Indicators:** • Embedded throughout all curriculum areas.