



Learning

Outcomes

Framework

April 2004

Grade 8

Learning Outcomes Framework
Grade 8

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Introduction

The learning outcomes framework comprises a series of curriculum outcomes statements describing what knowledge, skills, and attitudes students are expected to demonstrate a result of their cumulative learning experiences in the primary–graduation continuum. Through an ongoing process, the Department of Education is developing a learning outcomes framework for each area of the public school program.

This document provides an overview of the learning outcomes framework organized by grade level and subject area. It is intended to serve as a brief survey of expected learning outcomes and as a tool to assist teachers in program planning. The connections among learning outcomes reflect natural affinities among subject areas and facilitate the design of a balanced, integrated program.

In designing appropriate learning experiences that enable students to achieve the expected learning outcomes, teachers and administrators are expected to refer to foundation documents and related curriculum guides listed in *Public School Programs: 2003–2004*. In planning the appropriate use of information technologies as tools for learning and teaching, teachers and administrators should also refer to *Vision for the Integration of Information Technologies within the Nova Scotia Public School System*. It is available on-line at <lr.EDnet.ns.ca>.

Foundation documents provide the framework for general and key-stage curriculum outcomes, outline the focus and key features of the curriculum, and describe contexts for learning and teaching. Curriculum guides elaborate on specific curriculum outcomes and describe other aspects of curriculum, such as program design and components, instructional and assessment strategies, and resources.

General curriculum outcomes are statements that identify what students are expected to know and be able to do upon completion of study in a curriculum area. Key-stage curriculum outcomes statements are statements that identify what students are expected to know and be able to do by the end of grades 3, 6, 9, and 12 as a result of their cumulative learning experiences in a curriculum area. Specific curriculum outcomes are statements that identify what students are expected to know and be able to do at a particular grade level.

The following overview of the learning outcomes framework notes general curriculum outcomes and specific curriculum outcomes. For some subject areas, key-stage curriculum outcomes are also included. It should be noted that specific curriculum outcomes for music, family studies, and visual arts are not yet available and that specific curriculum outcomes noted for Health/Personal Development and Relationships 8, Social Studies 8, and Technology Education 8 are **draft** statements. While implementation of new curriculum in these subjects is not yet required, teachers may wish to consider these draft specific curriculum outcomes in planning their instructional programs.

Junior High Program Components

Each school board is required to provide, in grades 7 to 9 inclusive, in each school under its jurisdiction, instruction in the prescribed courses in English language arts; French, Gaelic, or Mi'kmaq; mathematics; personal development and relationships; physical education; science; social studies; and **two** of arts education, family studies, or technology education. Students in grades 7–9 are expected to take at least **one** of the following electives: Art, Family Studies, Music, or Technology Education. It is expected that information technologies will be integrated within the prescribed courses; the junior high program does not include discrete computer-related studies. Each school is also required to provide programming and services for students with special needs.

Exploratory Options

Exploratory options (sometimes called mini-courses) may be provided to extend the curriculum and provide enrichment opportunities for young adolescents. Exploratory options may be designed as a component of compulsory or elective courses but may not replace program requirements noted above.

Exploratory options should contribute to the students' achievement of specific curriculum outcomes in one or more subject areas and should reflect the developmental needs of the young adolescent.

Exploratories may be offered for short periods of time during the year.

Core French

Key-Stage Curriculum Outcomes

By the end of grade 9, students will be expected to

Specific Curriculum Outcomes

Students will be expected to

Communication

GCO: On the basis of their experiences in the Core French Program, students will be expected to

- communicate effectively in French, both orally and in writing; and to interact appropriately in a variety of situations that relate to their needs and interests

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- | | |
|---|--|
| <ul style="list-style-type: none"> function in a classroom where French is the language spoken | <ul style="list-style-type: none"> listen to longer communications (demonstrate with occasional support) follow more complex directions (demonstrate with occasional support) negotiate to understand (demonstrate with occasional support) |
| <ul style="list-style-type: none"> participate in an informal conversation, with support | <ul style="list-style-type: none"> ask for and give information (demonstrate independently) initiate and conclude a conversation (demonstrate independently) communicate on the telephone (demonstrate independently) |
| <ul style="list-style-type: none"> identify, describe and compare objects, people, events and places | <ul style="list-style-type: none"> recount an event (demonstrate with occasional support) give a report (demonstrate with occasional support) describe physical and personality traits (demonstrate with occasional support) give directions (demonstrate with occasional support) |
| <ul style="list-style-type: none"> express a preference, an opinion or a feeling with justification | <ul style="list-style-type: none"> discuss tastes (demonstrate with occasional support) state preferences (demonstrate with occasional support) justify choices (demonstrate with occasional support) persuade (demonstrate with occasional support) |
| <ul style="list-style-type: none"> become involved in a variety of interactive activities | <ul style="list-style-type: none"> make telephone calls and participate in interviews (demonstrate with occasional support) participate in a debate, games, round table discussions, brainstorming, surveys, and in role-plays (demonstrate with occasional support) |
| <ul style="list-style-type: none"> ask a variety of questions | <ul style="list-style-type: none"> find information (demonstrate independently) clarify and verify learning (demonstrate with occasional support) select pertinent information (demonstrate independently) |

Key-Stage Curriculum Outcomes

By the end of grade 9, students will be expected to

- select information by reading, listening to or viewing different texts
- respond personally to a variety of texts
- produce a variety of texts by following criteria

Specific Curriculum Outcomes

Students will be expected to

- distinguish the characteristics of different types of text (demonstrate independently)
- identify the main ideas of a text (demonstrate independently)
- infer the evolution, the conclusion of a story (demonstrate with occasional support)
- draw, mime, and dramatize (demonstrate independently)
- plan, organize, and evaluate a portfolio (demonstrate with occasional support)
- compose songs and poetry (demonstrate with occasional support)
- keep a personal journal (demonstrate with occasional support)
- produce expressive, informative, persuasive, humorous, and poetic texts (demonstrate with occasional support)
- revise and correct text (demonstrate with occasional support)

Culture

GCO: On the basis of their experiences in the Core French Program, students will be expected to

- demonstrate an appreciation and understanding of Francophone cultures, while comparing them with their own culture, as well as an appreciation and understanding of Canada's multicultural reality
- describe certain Francophone regions locally, provincially, nationally, and internationally
- describe, with relevant details, certain realities of Francophone cultures
- name and locate certain Francophone communities in Canada (demonstrate with occasional support)
- identify and describe the different Acadian regions in Nova Scotia (demonstrate with occasional support)
- identify certain areas in the world where French is spoken (demonstrate with occasional support)
- describe Acadian festivals and the important role of music and dance (demonstrate with occasional support)
- describe some Acadian meals (demonstrate with occasional support)
- identify some Francophone festivals in Canada (demonstrate with occasional support)
- identify some Francophone customs in Canada (demonstrate with occasional support)
- name some events associated with Francophone regions in the world (demonstrate with occasional support)

Key-Stage Curriculum Outcomes

By the end of grade 9, students will be expected to

- compare aspects of Francophone cultures with aspects of their own culture
- explain the contribution of some contemporary Francophone personalities to Canadian society
- identify the diverse origins of people who make up the Canadian mosaic
- identify the cultural elements in authentic documents
- explain the advantages of being bilingual in our society

Specific Curriculum Outcomes

Students will be expected to

- compare Acadian culture and their own culture (demonstrate with occasional support)
- inform themselves about the contributions to Canada of some famous Francophones (demonstrate with occasional support)
- describe some contributions of famous Acadians (demonstrate with occasional support)
- recognize certain cultural stereotypes (demonstrate with occasional support)
- express an opinion with respect to some stereotypes (demonstrate occasional support)
- demonstrate a respect towards other languages (demonstrate with occasional support)
- inform themselves of activities through the media (demonstrate with occasional support)
- inform and amuse themselves by listening to the radio and viewing televisions and films (demonstrate with occasional support)
- demonstrate an interest in using French (demonstrate with occasional support)
- identify the evidence of bilingualism in our society (careers, laws, etc.) (demonstrate with occasional support)

General Language Education

GCO: On the basis of their experience in the Core French Program, students will be expected to

- choose and implement strategies to facilitate their communication in French and their learning
- use learning strategies, communication strategies and social strategies to communicate in French, both orally and in writing
- demonstrate the importance of non-verbal communication (use gestures) (demonstrate independently)
- use partial sentences, repetition, paraphrase, and circumlocutions (demonstrate with occasional support)
- request clarifications and explanations in order to understand (demonstrate with occasional support)
- plan and organize their productions using their own learning experiences
 - prepare checklist
 - adapt a message to the circumstances
 - plan a written production (demonstrate with occasional support)

Key-Stage Curriculum Outcomes

By the end of grade 9, students will be expected to

Specific Curriculum Outcomes

Students will be expected to

- self-correct (demonstrate with occasional support)
- keep a personal journal (demonstrate with occasional support)
- give advice to facilitate group work (demonstrate with occasional support)
- take turns (demonstrate with occasional support)
- accept suggestions given by others (demonstrate with occasional support)
- identify how knowledge and skills in French class can be useful in everyday life (demonstrate with occasional support)

Language

GCO: On the basis of their experience in the Core French Program, students will be expected to

- recognize and use in context elements of the linguistic code, orally and in writing, to facilitate their communication in French
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- understand and use the vocabulary, expressions and structures relating to the needs in the classroom and to areas of experience
 - function in the classroom by using expressions from the unit «*comment survivre en français dans un cours de français*» and the directions and rules of the classroom (demonstrate independently)
 - participate in a conversation and involve themselves in a variety of interactions by using the present, future, and simple past tenses; connecting words such as *d'abord, ensuite, finalement, puis, et, mais*; interrogative and negative (demonstrate with occasional support)
 - describe and compare by using the present, future, and simple past tenses; adjectives; adverbs; comparative and superlative; connecting words (demonstrate with occasional support)
 - select information using verb tenses, connecting words such as *d'abord, ensuite, finalement, puis, cependant, en plus, par contre* (demonstrate with occasional support)
 - produce a variety of texts using the present, future, and past tenses; interrogative and negative; connecting words such as: *puis, et, mais, en plus* in order to produce a cohesive and coherent text (demonstrate with occasional support)

English Language Arts

General Curriculum Outcomes Specific Curriculum Outcomes

GCO 1: Students will be expected to speak and listen to explore, extend, clarify, and reflect on their thoughts, ideas, feelings, and experiences.

GCO 2: Students will be expected to communicate information and ideas effectively and clearly, and to respond personally and critically.

GCO 3: Students will be expected to interact with sensitivity and respect, considering the situation, audience, and purpose.

Students will be expected to

- 1.1 consider and reflect upon the contribution of others' ideas during discussions
 - 1.2 ask questions that probe for accuracy, relevancy, and validity; respond thoughtfully and appropriately to such questions
 - 1.3 state a point of view in a convincing manner, offering relevant information to support that viewpoint
 - 1.4 listen carefully to identify key points in oral presentations, and evaluate the relevancy of supporting details
- 2.1 contribute to small-group conversation and whole-group discussion, choosing appropriate strategies that contribute to effective talk
 - 2.2 understand the importance of adapting communication choices such as vocabulary, sentence structure, rate of speech, and tone to meet the needs of different purposes and audiences; select suitable communication choices in various speaking contexts
 - 2.3 give instructions and respond appropriately to instructions, directions, and questions
 - 2.4 evaluate the effectiveness of their own and others' talk in a variety of contexts; employ and consider the effects of verbal and non-verbal language (e.g., summaries, examples, and body gestures)
- 3.1 demonstrate active speaking and listening skills such as making eye contact, rephrasing when appropriate, clarifying comments, extending, refining, and/or summarizing points already made
 - 3.2 demonstrate a respect for others by developing effective ways to express personal opinions such that they reflect sensitivity to others including differences in culture and language
 - 3.3 recognize that spoken language reveals values and attitudes such as bias, beliefs, and prejudice; understand how language is used to influence and manipulate
 - 3.4 recognize that different situations (interviews, speeches, debates, conversation) require different speaking and listening conventions (questioning techniques, persuasive talk, formal language) appropriate to the situation

General Curriculum Outcomes Specific Curriculum Outcomes

GCO 4: Students will be expected to select, read, and view with understanding a range of literature, information, media, and visual texts.

Students will be expected to

- 4.1 select texts that address their learning needs and range of special interests
- 4.2 read widely and experience a variety of young adult fiction and literature from different provinces and countries
- 4.3 explain with some regularity how authors use pictorial, typographical, and other organizational devices such as tables and graphs to achieve certain purposes in their writing, and rely on those devices to construct meaning and enhance understanding
- 4.4 read with greater fluency, confidence, and comprehension by furthering personal understanding, recognition, and use of cueing systems and strategies to read and view increasingly complex texts
- 4.5 regularly identify the processes and strategies readers and viewers apply when constructing meaning; develop an understanding of the personal processes and strategies applied when reading and viewing; reflect on personal growth as readers and viewers of texts and use this awareness of personal development to push reading and viewing ability even further

GCO 5: Students will be expected to interpret, select, and combine information using a variety of strategies, resources, and technologies.

- 5.1 access appropriate print and non-print sources with increasing independence and select information to meet specific needs with increasing speed, accuracy, and confidence
- 5.2 experiment with and rely upon a range of print and non-print (e-mail, CD-ROMs) sources for accessing and selecting information
- 5.3 employ various relevant research strategies like generating questions, drafting an outline, or interviewing peers to determine what questions they would like answered by their research

GCO 6: Students will be expected to respond personally to a range of texts.

- 6.1 elaborate personal reactions to what is read and viewed by providing some extended explanations, examples, and supporting arguments
- 6.2 state personal points of view about what is read and viewed and justify views with increasing regularity
- 6.3 with increasing confidence and flexibility, find evidence in texts to support personal claims and viewpoints about issues, themes, and situations

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

GCO 7: Students will be expected to respond critically to a range of texts, applying their understanding of language, form, and genre.

- 7.1 recognize that texts need to be assessed for bias and broaden their understanding and awareness of the ways in which print and media texts can be biased; begin to question and think critically about the relevance and reliability of information when answering questions and inquiries
- 7.2 identify the various features and elements writers use when writing for specific readers for specific purposes; describe how texts are organized to accommodate particular readers' needs and to contribute to meaning and effect
- 7.3 expand on earlier abilities to respond critically to a range of texts in various ways
 - understand how personal knowledge, ideas, values, perceptions, and points of view influence how writers create texts
 - recognize how and when personal background influences meaning construction, understanding, and textual response
 - describe how cultures and reality are portrayed in media texts

GCO 8: Students will be expected to use writing and other ways of representing to explore, clarify, and reflect on their thoughts, feelings, experiences, and learnings; and to use their imagination.

- 8.1 demonstrate competence in the frequent use of writing and representing strategies to extend learning; to explore their own thoughts and consider others' ideas, to reflect on their feelings, values, and attitudes; and to identify problems and describe logical solutions
- 8.2 identify and reflect upon strategies that are effective in helping them to learn; describe their personal growth as language learners and language users
- 8.3 begin to use various forms of note-making appropriate to various purposes and situations
- 8.4 demonstrate an awareness of how and when to integrate interesting effects in imaginative writing and other ways of representing; include thoughts and feelings in addition to external descriptions and activities; integrate detail that adds richness and density; identify and correct inconsistencies and avoid extraneous detail; make effective language choices relevant to style and purpose, and, when appropriate, select more elaborate and sophisticated vocabulary and phrasing

General Curriculum Outcomes Specific Curriculum Outcomes

GCO 9: Students will be expected to create texts collaboratively and independently, using a variety of forms for a range of audiences and purposes.

Students will be expected to

- 9.1 continue to develop writing forms previously introduced and expand this range to produce, for example, autobiographies, drama, surveys, graphs, literary responses, biographies, illustrations, and reviews
- 9.2 consider and choose writing forms that match both the writing purpose (to define, report, persuade, compare) and the reader for whom the text is intended (understand why language choice, organization, and voice used in an essay differs from that used in a media advertisement)
- 9.3 understand that ideas can be represented in more than one way and used with other forms of representing (speeches, demonstrations, plays)
- 9.4 keep the reader and purpose for writing in mind when choosing content, writing style, tone of voice, language choice, and text organization
- 9.5 know how and when to ask for reader feedback while writing and incorporate appropriate suggestions when revising subsequent drafts; assess self-generated drafts from a reader's/viewer's/ listener's perspective

GCO 10: Students will be expected to use a range of strategies to develop effective writing and other ways of representing and to enhance their clarity, precision, and effectiveness.

- 10.1 build and rely upon a broad knowledge base of how words are spelled and formed; use such knowledge to spell unfamiliar words and expand vocabulary; regularly use resource texts to verify spelling; use punctuation and grammatical structures capably and accurately; use a variety of sentence patterns, vocabulary choices, and paragraphing with flexibility and creativity to engage readers
- 10.2 choose, with increasing regularity, the prewriting, drafting, revising, editing, proofreading, and presentation strategies to aid in producing various texts
- 10.3 attempt to use various technologies for communicating to a variety of audiences for a range of purposes
- 10.4 demonstrate a commitment to crafting pieces of writing and other representations
- 10.5 gather information from a variety of sources (interviews, film, CD-ROMs, texts) and integrate ideas in communication

Health/Personal Development and Relationships (Draft)

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

The Body: Growth and Development

GCO A: Students will be expected to demonstrate knowledge of the body, body functions, and growth and development.

- A1.1 demonstrate an understanding of the structure and function of different types of cells
- A1.2 demonstrate an understanding of the interrelated functions of the skeletal, muscular, and nervous systems
- A1.3 demonstrate an understanding of the interrelated functions of the circulatory and respiratory systems
- A1.4 demonstrate a knowledge of the structure and functions of the skin

- A2.1 demonstrate an understanding of changing health needs and concerns through adulthood

Strategies for Healthy Living

GCO B: Students will be expected to demonstrate knowledge, skills, and attitudes that contribute to active, healthy living.

- B1.1 identify and demonstrate attitudes and behaviours that contribute to the health and efficiency of the skeletal, muscular, and nervous systems
- B1.2 identify and demonstrate attitudes and behaviours that contribute to the health and efficiency of the respiratory and circulatory systems
- B1.3 assess various skin- and hair-care products and practices for their effectiveness and safety

- B2.1 demonstrate an understanding of the effect of different foods on the body systems
- B2.2 demonstrate an understanding of factors that determine nutrient and energy needs

- B3.1 identify risks and related precautions of being sexually active
- B3.2 evaluate options and consequences related to teen pregnancy
- B3.3 identify personal, social, and cultural influences related to sexual identity and decision making
- B3.4 evaluate the role of the media in promoting drug use
- B3.5 demonstrate knowledge of laws related to drug use and gambling

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

- B3.6 demonstrate an understanding of the risks associated with the non-medical use of prescription and over-the-counter drugs
- B3.7 identify personal, social, and cultural influences related to gambling
- B3.8 demonstrate an understanding of the effect on the family of harmful involvement with alcohol, other drugs, and gambling

- B4.1 identify and practise ways of contributing to the physical and emotional safety of the school community
- B4.2 identify and practise strategies for avoiding potentially dangerous situations
- B4.3 demonstrate self-knowledge, self-respect, and assertiveness in sexual decision making
- B4.4 demonstrate basic first aid and life-saving knowledge and skills
- B4.5 identify appropriate ways of responding to various emergencies

- B5.1 identify and practise strategies for preventing sexually transmitted diseases
- B5.2 identify and practise strategies for preventing HIV/AIDS
- B5.3 demonstrate a knowledge of symptoms, risk factors, and management strategies for various types of cancer

- B6.1 recognize that emotions can be expressed differently by people of different temperaments or personality types
- B6.2 identify strategies for coping with and expressing grief

- B7.1 participate in a broad range of physical activities they enjoy
- B7.2 demonstrate an understanding of the effect of fitness on the body systems

Values and Practices for Healthy Living

GCO C: Students will be expected to demonstrate knowledge of factors that contribute to healthy living values and practices.

- C1.1 demonstrate an awareness of the changing needs of grandparents, parents, and children at different stages of the family life cycle
- C1.2 compare their family's values and attitudes with their own

- C2.1 identify signs of community health
- C2.2 identify trends related to the health of their community, and identify and practise ways of contributing to community health

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

- C3.1 evaluate the impact of media on self-image and lifestyle choices
- C3.2 demonstrate an awareness of social influences that contribute to gender stereotyping
- C3.3 demonstrate an awareness of ways that attitudes and laws related to gambling have changed over time
- C4.1 assess the impact of various decisions and practices on the health and sustainability of the global environment
- C5.1 demonstrate acceptance of, and appreciation for, their own and others' sexual orientation
- C5.2 demonstrate empathy toward people living with HIV/AIDS

Strategies for Positive Personal Development and Healthy Relationship

GCO D: Students will be expected to demonstrate the knowledge, skills, and attitudes necessary to live happily and productively as an individual, within a family, and within the community.

- D1.1 identify and practise strategies for strengthening self-concept
- D1.2 demonstrate an awareness of influences related to sexual attitudes and identity
- D1.3 identify and practise strategies for managing time and energy
- D1.4 demonstrate and strengthen personal qualities that are valued in school and in the workplace
- D2.1 identify services that support the mental and physical health of teens
- D3.1 demonstrate respect for the feelings and beliefs of others
- D3.2 identify and practise strategies for responding positively to feedback and criticism
- D3.3 identify traits of healthy dating relationships
- D3.4 identify and practise strategies for communicating personal needs in relationships
- D3.5 identify and practise strategies for balancing personal values and needs with the need for peer acceptance
- D4.1 identify job and career opportunities in their community
- D4.2 identify and investigate high school courses and post-secondary education and training that relate to personal life/work interests and goals

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

- D5.1 assess personal interests, traits, learning styles, and values, and explain the role of self-assessment in life/work building
- D5.2 describe ways that changes in societal needs affect the world of work
- D5.3 demonstrate an understanding of the role of education and training in life/work building
- D5.4 compare the role of student to that of paid worker
- D5.5 identify ways of achieving a healthy balance between work and other aspects of their lives both now and in the future
- D5.6 identify and practise ways of earning and managing money

- D6.1 respond to a need in the community through volunteer service
- D6.2 express a personal sense of global citizenship
- D6.3 select items for and maintain a life/work portfolio
- D6.4 assess their strengths/skills/interests in relation to employable skills required in the workplace

Information Technologies

Outcome Components

Students will demonstrate expected performance levels in five IT-based learning outcome areas within the context of essential graduation learnings and outcomes specified for the public school program as a whole.

Basic Operations and Concepts (BOC)

- concepts and skills associated with the safe, efficient operation of a range of information technologies

Key-Stage Curriculum Outcomes

By the end of grade 9, students will have achieved the outcomes for grades primary–6 and will also be expected to

- BOC 9.1 under general supervision as they research, design, and create products that represent their learning, independently and safely
 - operate a wide variety of school media equipment, including audio equipment, overhead projectors, video cameras, videocassette recorder/players, televisions, photocopiers, and still cameras
 - use computer equipment to access and use curriculum-based computer software, from CD-ROMs, hard drives, or other data storage media
- BOC 9.2 demonstrate accurate, efficient keyboarding and manipulation of appropriate input devices; be able to assist others in the use of peripherals
- BOC 9.3 using a variety of technologies, demonstrate an understanding of technological applications and apply appropriate technologies to solve curriculum problems and enhance their learning
- BOC 9.4 independently run grade-appropriate software and manage folders and directories of their electronic work in accordance with school policies
- BOC 9.5 understand and use an increasing range of specialized vocabulary associated with the technologies they use
- BOC 9.6 practise and demonstrate a developing understanding of sound ergonomics as they use IT; identify and report dangerous workstation configurations or practices
- BOC 9.7 apply basic troubleshooting techniques in assessing equipment and software problems that affect their use of IT; document and articulate such problems to assist technical support staff in further diagnosis

Outcome Components

Students will demonstrate expected performance levels in five IT-based learning outcome areas within the context of essential graduation learnings and outcomes specified for the public school program as a whole.

Productivity Tools and Software (PTS)

- the efficient selection and use of IT to perform tasks such as
 - the exploration of ideas
 - data collection
 - data manipulation, including the discovery of patterns and relationships
 - problem solving
 - the communication of learning

Key-Stage Curriculum Outcomes

By the end of grade 9, students will have achieved the outcomes for grades primary–6 and will also be expected to

- PTS 9.1 independently use electronic planning software to brainstorm; develop a thought web; outline and map ideas under study; and track their progress toward agreed work deadlines
- PTS 9.2 in the process of collecting, analysing, and displaying data, independently create electronic charts, tables, and graphs; and design, create, and manipulate spreadsheets and databases
- PTS 9.3 with the assistance of their teachers, explore curriculum concepts under study using specialized software; peripheral measuring, sampling, and recording equipment; and computer-based simulations
- PTS 9.4 explore the curriculum through a wide range of print and electronic forms; access, create, and process information by means of the specialized techniques associated with the technologies they select
- PTS 9.5 under the general supervision of their teachers, independently manipulate sound and a range of image types, using digital imaging equipment and computer-based editing, to represent their learning in a variety of ways and for particular audiences
- PTS 9.6 independently develop multimedia presentations, based on sound principles of design, with increasing confidence and efficiency
- PTS 9.7 use information technology to explore increasingly complex numerical and geometric situations for the purpose of developing conjectures

Communications Technology (CT)

- the use of specific, interactive technologies that support collaboration and sharing through communication

- CT 9.1 represent their learning in a range of media, including print, video, audio, and multimedia, with growing confidence and competence
- CT 9.2 with teacher supervision, locate and access curriculum-relevant books, journals, and other print documents; media resources; and electronic files for use in all types of research
- CT 9.3 manage their electronic files and correspondence efficiently

Outcome Components

Students will demonstrate expected performance levels in five IT-based learning outcome areas within the context of essential graduation learnings and outcomes specified for the public school program as a whole.

Key-Stage Curriculum Outcomes

By the end of grade 9, students will have achieved the outcomes for grades primary–6 and will also be expected to

- CT 9.4 demonstrate their understanding of how form, standards, conventions, and methods of transmission affect their use of information and its impact on themselves and others
- CT 9.5 with teacher supervision, work collaboratively in small groups to design and build, for peer use, intranet or Internet websites of student-produced pages about a curriculum topic

Research, Problem Solving, and Decision Making (RPSD)

- the organization, reasoning, and evaluation by which students rationalize their use of IT in pursuit of other curriculum outcomes

- RPSD 9.1 with the assistance of their teachers, select appropriate measuring and recording devices and/or software to collect data, discover patterns of change over time, solve problems, and make logical decisions based on their investigations
- RPSD 9.2 with the assistance of their teachers, select and use appropriate forms, styles, media, and sources to access, manipulate, assess, and present information meaningfully for different audiences
- RPSD 9.3 with the assistance of their teachers, assess the quality, completeness, biases, and perspectives of print, media, and electronic resources for possible use in their curricular studies
- RPSD 9.4 independently select, use, and occasionally develop specialized techniques to create communication environments, processes, and products in print, media, and electronic forms that meet defined information needs and appropriate quality standards
- RPSD 9.5 independently and critically evaluate how style, form, source, and medium influence the accessibility, validity, and meaning of information
- RPSD 9.6 with the assistance of their teachers, access the strengths and limitations of different approaches to research, then select those approaches that more efficiently meet their learning needs
- RPSD 9.7 with the assistance of their teachers, select and refine a research a topic, according to teacher-provided criteria, to fulfill a curriculum requirement
- RPSD 9.8 accurately and independently cite bibliographic information

Outcome Components

Students will demonstrate expected performance levels in five IT-based learning outcome areas within the context of essential graduation learnings and outcomes specified for the public school program as a whole.

Social, Ethical, and Human Issues (SEHI)

- understanding associated with the use of IT that encourages in students a commitment to pursue personal and social good, particularly to build and improve their learning environments and to foster stronger relationships with their peers and others who support their learning

Key-Stage Curriculum Outcomes

By the end of grade 9, students will have achieved the outcomes for grades primary–6 and will also be expected to

- SEHI 9.1 demonstrate understanding of the nature of technology and its impacts on different societies and environments; assume personal responsibility for ethical behaviour and attitudes with regard to information technologies and resources and use them—in local and global contexts—with due regard for the legal and human rights of others
- SEHI 9.2 demonstrate understanding of, model, and assume personal responsibility for the acceptable use of copyrighted information resources
- SEHI 9.3 identify and demonstrate the techniques of mass media, popular culture, and electronic information environments, and evaluate the effects of these techniques
- SEHI 9.4 identify the values that inform mass media, popular culture, and electronic information environments in relation to their personal values
- SEHI 9.5 with the assistance of their teachers as required, identify the impacts of various media and information technologies on them, their learning environment, their cultures, and society
- SEHI 9.6 as researchers, demonstrate an understanding of and a commitment to accuracy and ethical behaviour as they create and distribute information about themselves, others, and curriculum topics under study
- SEHI 9.7 identify technology-related career opportunities of personal interest, and begin to assess their strengths and interests with respect to technology

Mathematics

General Curriculum Outcomes Specific Curriculum Outcomes

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Students will be expected to

- A1 model and link various representations of square root of a number
- A2 recognize perfect squares between 1 and 144 and apply patterns related to them
- A3 distinguish between an exact square root of a number and its decimal approximation
- A4 find the square root of any number, using an appropriate method
- A5 demonstrate and explain the meaning of negative exponents for base ten
- A6 represent any number written in scientific notation in standard form, and vice versa
- A7 compare and order integers and positive and negative rational numbers (in decimal and fractional forms)
- A8 represent and apply fractional percents, and percents greater than 100, in fraction or decimal form, and vice versa
- A9 solve proportion problems that involve equivalent ratios and rates

GCO B: Students will demonstrate operation sense and apply operation principles and procedures in both numeric and algebraic situations.

- B1 demonstrate an understanding of the properties of operations with integers and positive and negative rational numbers (in decimal and fractional forms)
- B2 solve problems involving proportions, using a variety of methods
- B3 create and solve problems which involve finding a, b, or c in the relationship $a\% \text{ of } b = c$, using estimation and calculation
- B4 apply percentage increase and decrease in problem situations
- B5 add and subtract fractions concretely, pictorially, and symbolically
- B6 add and subtract fractions mentally, when appropriate
- B7 multiply fractions concretely, pictorially, and symbolically
- B8 divide fractions concretely, pictorially, and symbolically
- B9 estimate and mentally compute products and quotients involving fractions
- B10 apply the order of operations to fraction computations, using both pencil and paper and the calculator
- B11 model, solve, and create problems involving fractions in meaningful contexts

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

- B12 add, subtract, multiply, and divide positive and negative decimal numbers with and without the calculator
 - B13 solve and create problems involving addition, subtraction, multiplication, and division of positive and negative decimal numbers
 - B14 add and subtract algebraic terms concretely, pictorially, and symbolically to solve simple algebraic problems
 - B15 explore addition and subtraction of polynomial expressions, concretely and pictorially
 - B16 demonstrate an understanding of multiplication of a polynomial by a scalar, concretely, pictorially, and symbolically
- GCO C: Students will explore, recognize, represent, and apply patterns and relationships, both informally and informally.
- C1 represent patterns and relationships in a variety of formats and use these representations to predict unknown values
 - C2 interpret graphs that represent linear and non-linear data
 - C3 construct and analyse tables and graphs to describe how change in one quantity affects a related quantity
 - C4 link visual characteristics of slope with its numerical value by comparing vertical change with horizontal change
 - C5 solve problems involving the intersection of two lines on a graph
 - C6 solve and verify simple linear equations algebraically
 - C7 create and solve problems, using linear equations
- GCO D: Students will demonstrate an understanding of and apply concepts and skills associated with measurement.
- D1 solve indirect measurement problems, using proportions
 - D2 solve measurement problems, using appropriate SI units
 - D3 estimate areas of circles
 - D4 develop and use the formula for the area of a circle
 - D5 describe patterns and generalize the relationships between areas and perimeters of quadrilaterals, and areas and circumferences of circles
 - D6 calculate the areas of composite figures
 - D7 estimate and calculate volumes and surface areas of right prisms and cylinders
 - D8 measure and calculate volumes and surface areas of composite 3-D shapes
 - D9 demonstrate an understanding of the Pythagorean relationship, using models
 - D10 apply the Pythagorean relationship in problem situations

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

GCO E: Students will demonstrate spatial sense and apply geometric concepts, properties, and relationships.

- E1 demonstrate whether a set of orthogonal views, a mat plan, and an isometric drawing can represent more than one 3-D shape
- E2 examine and draw representations of 3-D shapes to determine what is necessary to produce unique shapes
- E3 draw, describe, and apply transformations of 3-D shapes
- E4 analyse polygons to determine their properties and interrelationships
- E5 represent, analyse, describe, and apply dilatations

GCO F: Students will solve problems involving the collection, display, and analysis of data.

- F1 demonstrate an understanding of the variability of repeated samples of the same population
- F2 develop and apply the concept of randomness
- F3 construct and interpret circle graphs
- F4 construct and interpret scatter plots and determine a line of best fit by inspection
- F5 construct and interpret box-and-whisker plots
- F6 extrapolate and interpolate information from graphs
- F7 determine the effect of variations in data on the mean, median, and mode
- F8 develop and conduct statistics projects to solve problems
- F9 evaluate data interpretations that are based on graphs and tables

GCO G: Students will represent and solve problems involving uncertainty.

- G1 conduct experiments and simulations to find probabilities of single and complementary events
- G2 determine theoretical probabilities of single and complementary events
- G3 compare experimental and theoretical probabilities
- G4 demonstrate an understanding of how data is used to establish broad probability patterns

Music

General Curriculum Outcomes

Key-Stage Curriculum Outcomes

Note: Learning outcomes have not yet been developed for Music 7–9. Teachers may wish to use the following general curriculum outcomes and key-stage curriculum outcomes from the *Foundation for the Atlantic Canada Arts Education Curriculum* in planning their music program.

By the end of grade 9, students will have achieved the outcomes for entry–grade 6 and will also be expected to

Creating, Making, and Presenting

GCO 1: Students will be expected to explore, challenge, develop, and express ideas using the skills, language, techniques, and processes of the arts.

- sing or play, maintaining a part within a variety of textures and harmonies, using a range of musical structures and styles
- use the elements of music to express and communicate meaning
- interpret non-verbal gestures, making connections to notation and musical expression
- use a variety of notational systems to represent musical thoughts and ideas

GCO 2: Students will be expected to create and/or present, collaboratively and independently, expressive products in the arts for a range of audiences and purposes.

- improvise and compose patterns and short pieces, using a variety of sound sources and technologies
- present music, co-ordinating reading, listening, and playing/singing skills
- perform, alone and with others, music expressing a broad range of thoughts, images, and feelings

Understanding and Connecting Contexts of Time, Place, and Community

GCO 3: Students will be expected to demonstrate critical awareness of and value the role of the arts in creating and reflecting culture.

- identify and describe uses of music in daily life, both local and global
- identify opportunities to participate in music in school, community, and the world of work
- compare music from a range of cultural and historical contexts
- examine and describe ways in which music influences and is influenced by local and global culture

GCO 4: Students will be expected to respect the contributions of individuals and cultural groups to the arts in local and global contexts and value the arts as a record of human experience and expression.

- reflect on ways in which music expresses the history and the cultural diversity of local, national, and international communities
- examine ways in which music enhances and expresses life's experiences

General Curriculum Outcomes

GCO 5: Students will be expected to examine the relationship among the arts, societies, and environments.

Perceiving and Responding

GCO 6: Students will be expected to apply critical thinking and problem-solving strategies to reflect on and respond to their own and others' expressive works.

GCO 7: Students will be expected to understand the role of technologies in creating and responding to expressive works.

GCO 8: Students will be expected to analyse the relationship between artistic intent and the expressive work.

Key-Stage Curriculum Outcomes

By the end of grade 9, students will have achieved the outcomes for entry–grade 6 and will also be expected to

- define relationships among music, other arts, and other subjects
 - examine the roles that music plays in local and global communities
-
- examine and explore a range of possible solutions to musical challenges
 - use processes of description, analysis, interpretation, and evaluation to make and support informed responses to their own and others' music and musical performances
 - critically reflect on ideas and feelings in works of music, and identify patterns, trends, and generalizations
-
- identify combinations of instruments and sound sources, including electronic sources
 - identify and describe instruments common to cultures and countries included in the social studies curriculum
 - explore a range of non-acoustic musical sound sources
 - describe the relationship of instruments and other technologies to the mood and feeling of their own and others' music
-
- discuss why a range of musical works has been created
 - analyse the source of ideas and reasons for musical decisions in light of original intent
 - use feedback from others to examine their own music work in light of their original intent
 - analyse performances and provide critical commentary on aspects of musical presentation in light of the performers' intent

Physical Education

General Curriculum Outcomes

Students will be expected to

Knowing

- demonstrate an understanding of the concepts that support human movement
- demonstrate a knowledge of the components and processes needed to develop and maintain a personal level of functional fitness

Doing

- demonstrate motor skills in all movement categories using efficient and effective body mechanics
- participate regularly in a variety of activities that develop and maintain personal physical fitness
- demonstrate creativity in all movement categories

Valuing

- demonstrate positive personal and social behaviours and interpersonal relationships
- demonstrate positive attitudes toward and an appreciation of physical activity through participation
- demonstrate awareness of career and occupational opportunities related to physical activities

Specific Curriculum Outcomes

Students will be expected to

Active Living

- use relaxation techniques for stress management
- design and analyse a personal nutritional plan
- analyse activities and exercises according to benefits to muscular strength, cardiovascular fitness, flexibility, and endurance
- explain the benefits of and demonstrate warm-up and cool-down activities
- participate in activities that enhance muscular strength, cardiovascular fitness, flexibility, and endurance
- plan how to utilize community resources

Outdoor Activities

- practise the sport of orienteering in a controlled environment
- know and understand the concept of reading a map
- participate in activities or games that demonstrate sensitivity towards the environment
- participate in at least one land-based (e.g., hiking, orienteering) and one water-based (e.g., swimming, canoeing) seasonal activity that practises environmental safety
- review and practise the use of a compass

Dance

- demonstrate learned traditional, line, circle, and square dances from previous grades
- practise new traditional, line, circle, and square dances
- create, with a partner, an aerobic dance sequence to music
- dramatize through dance such things as historical events, movie themes, poetry, or art
- choreograph movement sequences using elements of movement and basic dance steps and patterns

Educational Gymnastics

- demonstrate safety procedures and practices to avoid unnecessary risks
- experience individual, partner, and small-group balance and counterbalance

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

Students will be expected to

- develop and perform, with a partner, a sequence containing basic gymnastic skills on the floor and on small and/or large equipment

Sport Experience

- refine sport-specific skills through practice and repetition
- demonstrate the discipline and attitude required to master a skill
- demonstrate an understanding of positioning in offensive and defensive situations
- participate in sport and games using modified rules
- maintain the safety of game play when rules are modified
- demonstrate positive personal and social behaviours that emphasize fair play

Science

General Curriculum Outcomes Specific Curriculum Outcomes

STSE

GCO 1: Students will develop an understanding of the nature of science and technology, of the relationships between science and technology, and of the social and environmental contexts of science and technology.

Skills

GCO 2: Students will develop the skills required for scientific and technological inquiry, for solving problems, for communicating scientific ideas and results, for working collaboratively, and for making informed decisions.

Knowledge

GCO 3: Students will construct knowledge and understandings of concepts in life science, physical science, and Earth and space science, and apply these understandings to interpret, integrate, and extend their knowledge.

Attitudes

GCO 4: Students will be encouraged to develop attitudes that support the responsible acquisition and application of scientific and technological knowledge to the mutual benefit of self, society, and the environment.

Students will be expected to

Earth and Space Science: Water Systems on Earth

Waves, Tides, and Water Currents

- carry out procedures in order to investigate how temperature difference in water cause currents (209-1)
- state a conclusion based on experimental data about the formation of water currents (209-4, 210-11)
- explain how waves and tides are generated (311-10a)
- formulate operational definitions, on the basis of investigations of waves for wave length, wave height, crest, and trough (208-7)

Shorelines

- select and integrate information, from various print and electronic sources, related to processes of erosion and deposition that result from wave action and water flow (209-5, 311-11)
- explain how waves and tides interact with shorelines (311-10b)
- provide examples of various technologies designed to contain damage due to waves and tides (112-3)
- prepare a presentation or report on the effect of tides and waves on a shoreline, and evaluate individual and group processes used in planning and completing the task (211-1, 211-4)

Oceans Basins and Continental Drainage Systems

- describe processes that lead to the development of ocean basins and continual drainage systems: glaciation, continental drift, erosion, volcanic action (311-7)
- select and integrate information from various print and electronic sources to provide examples of technologies that have enabled scientific research involving ocean basins (111-3, 209-5)
- provide examples of how technologies used to investigate the ocean floor have improved over time (110-8)
- identify some strengths and weaknesses of technologies used to investigate the ocean floor (210-3)

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

- provide examples of public and private Canadian institutions that support scientific and technological research involving the oceans (112-5)

Oceans and Species Distribution

- apply the concept of systems to show how changes in one component of a body of water causes change in other components in that system (111-6)
- describe the interactions of the ocean currents, winds, and regional climates (311-9)
- analyse factors that affect productivity and species distribution in marine and fresh water environments
- predict and interpret trends in populations of a marine species from graphical data by interpolating and extrapolating data (210-4, 210-6)
- describe some positive and negative effects of marine technologies in the ocean (113-2)
- provide examples of problems related to the oceans that cannot be resolved using scientific and technological knowledge (113-10)

Glaciers and Polar Icecaps

- describe factors that affect glaciers and polar icecaps, and describe their consequent effects on the environment (311-12)
- identify new questions that arise from the study of glaciers and polar icecaps (210-16)

Physical Science: Fluids**Floating and Sinking—Density**

- describe the relationship among the mass, volume and density of solids, liquids, and gases using the particle model of matter (307-8)
- analyse quantitatively the density of various substances and suggest explanations for discrepancies in data, such as the measurement of the volume of irregular objects by water displacement (210-7, 307-11)
- explain the effects of changes in temperature on the density of solids, liquids, and gases and relate the result to the particle model of matter (307-9)
- describe situations in life where the density of substances naturally changes or is intentionally changed (307-10)

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

- identify questions to investigate arising from practical problems involving floating, sinking, and density (208-2)
- work co-operatively with team members to design an experiment and identify major variables in order to investigate floating, sinking, and density (208-6, 211-3)

Forces in Fluids

- describe the movement of objects in terms of balanced and unbalanced forces (309-2)
- test and compare a student-constructed dynamometer with a commercial dynamometer (210-13)
- calibrate a student-constructed dynamometer with known masses (210-14)
- describe qualitatively the difference between mass and weight (309-1)
- provide examples of technologies that have been developed because of our understanding of density and buoyancy (111-11)
- explain quantitatively the relationship between force, area, and pressure (309-3)
- describe the science underlying hydraulic technologies (111-5)
- explain qualitatively the relationship among pressure, volume, and temperature when liquid and gaseous fluids are compressed or heated (309-4)

Viscosity of Liquids

- compare the viscosity of various liquids (307-6)
- design an experiment to test the viscosity of various common fluids and identify the major variables (208-6)
- describe factors that can modify the viscosity of a liquid (307-7)
- use a temperature-measuring technology effectively and accurately for collecting data in temperature-viscosity investigations (209-3)
- demonstrate a knowledge of WHMIS standards by demonstrating the correct methods of disposal of various oils, for example (209-7)
- identify and relate personal activities and potential applications to fluid dynamics (109-10, 112-7, 210-12)

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

Physical Science: Optics**Properties of Visible Light**

- identify and describe the following properties of visible light: travels in a straight line (rectilinear propagation), speed of light in air is 300 000 km/s, reflection, refraction and dispersion, travels in a vacuum, and in some types of media (308-8)

Reflection

- describe the laws of reflection of visible light and their applications in everyday life—regular versus diffuse reflection, and angle of incidence = angle of reflection (308-9)
- formulate operational definitions for incidence, reflection, and the normal (208-7)
- estimate angles of incidence and reflection (209-2)
- work co-operatively and collaboratively with others to plan and safely construct and optical device using mirrors (209-6, 211-1)
- identify and correct practical problems in the way a constructed optical device functions (210-14)

Refraction and Dispersion

- rephrase questions related to refraction in a testable form (208-1)
- predict the effect of transparent media of varying densities on the angle of refraction of light (208-5)
- estimate angles of refraction (209-2)
- describe qualitatively how visible light is refracted (210-11, 308-10)
- estimate focal length of a convex lens by finding its focal point (209-2)
- describe how optical technologies have developed through systematic trial-and-error processes constrained by the optical properties of the materials (109-5)
- provide examples of optical technologies that enable scientific research and relate personal activities associated with such technologies (109-10, 111-3)

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

Electromagnetic Radiation

- describe different types of electromagnetic radiation, including infrared, ultraviolet, X-rays, microwaves, and radio waves (308-11)
- compare the properties of visible light to the properties of other types of electromagnetic radiation, including infrared, ultraviolet, X-rays, microwaves, and radio waves (308-12)
- explain the importance of using the words frequency and wavelength correctly (109-13)
- provide examples related to optics that illustrate that scientific and technological activities take place individually and in group settings (112-8)
- describe possible negative and positive effects of technologies associated with electromagnetic radiation (113-2)

Life Science: Cells, Tissues, Organs, and Systems**Cells**

- illustrate and explain that the cell is a living system that exhibits the following characteristics of life (304-4)
- explain that growth and reproduction depend on cell division (304-6)
- distinguish between plant and animal cells (304-5)
- use a light microscope or microviewer correctly to produce a clear image of cells (209-3)
- work co-operatively with team members to develop and construct models of cells (211-3)
- explain that it is important to use proper terms when comparing plant and animal cells (109-13)

Interdependence among Cells, Tissues, Organs, and Systems

- relate the needs and functions of various cells and organs to the needs and functions of the human organism as a whole (304-8)
- explain structural and functional relationships between and among cells, tissues, organs, and systems in the human body (304-7)
- compare the early idea that living organisms were made of air, fire, and water with the modern cell theory (110-2)
- evaluate individual and group processes used in researching the roles of the main organ systems (211-4)

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

Healthy/Unhealthy Systems

- describe the basic factors that affect the functions and efficiency of the human respiratory, circulatory, digestive, excretory, and nervous systems (304-9)
- illustrate examples of conflicting evidence related to how we should maintain and/or treat body systems (110-5)
- describe the science underlying various technologies used to assist or replace unhealthy organs or systems (111-5)

Interdependence of Body Systems

- rephrase questions into testable form about the factors that affect physical fitness and health (208-1)
- design and carry out an experiment to compare and contrast heart rate and breathing rate in an individual during various levels of activity, and identify and control the major variables (208-6, 209-1)
- suggest explanations for variations in the heart rate and the breathing rate of an individual during various levels of activity when the experiment is repeated (210-7)
- describe three examples of the interdependence of various systems of the human body (304-10)
- provide examples of careers that are associated with the health of body systems (112-10)
- make informed decisions about applications of science and technology that are associated with human body systems, taking into account personal and social advantages and disadvantages (113-8)

Social Studies (Draft)

General Curriculum Outcomes Specific Curriculum Outcomes

Citizenship, Power, and Governance

GCO: Students will be expected to demonstrate an understanding of the rights and responsibilities of citizenship and the origins, functions, and sources of power, authority, and governance.

Individuals, Societies, and Economic Decisions

GCO: Students will be expected to demonstrate an understanding of culture, diversity, and world view, recognizing the similarities and differences reflected in various personal, cultural, racial, and ethnic perspectives.

People, Place, and Environment

GCO: Students will be expected to demonstrate the ability to make responsible economic decisions as individuals and as members of society.

Culture and Diversity

GCO: Students will be expected to demonstrate an understanding of the interdependent relationship among individuals, societies, and the environment—locally, nationally, and globally—and the implications for a sustainable future.

Interdependence

GCO: Students will be expected to demonstrate an understanding of the interactions among people, places, and the environment.

Students will be expected to

Note: The specific curriculum outcomes for social studies listed below are draft outcomes. They are provided for your information only. Until this new curriculum is field-tested, piloted, and implemented, the current curriculum is to be followed.

Unit One: Introduction

- research how artistic and literary expression reflects the following aspects of Canadian identity: landscape, climate, people-citizenship, history, challenges, and opportunities

Unit Two: Geographic Influences

- demonstrate an understanding of the basic features of Canada's landscape and climate
- analyse the effects of selected geographic factors on Canadian identity
- demonstrate an understanding of the nature and impact of migration in post-1920 Canada
- compare their understanding of Canada's response to its geographic challenges and opportunities to that of a selected country with geographic features similar to Canada's

Unit Three: Influences and Interactions

- analyse the impact of changing technology and socio-economic conditions on differing prosperities and lifestyles in the 1920s and 1930s
- demonstrate an understanding of Canada's participation in WWII
- demonstrate an understanding of the impact of WWII on Canada and her people
- demonstrate an understanding of Canada's role in the world since WWII
- analyse the impact of changing technology and socio-economic conditions on Canada's prosperity and lifestyles in the 1950s and 1960s
- compare and contrast the social and cultural trends of the 1950s, 1960s, and 1970s
- demonstrate an understanding of how globalization has affected Canada and Canadians since 1980

General Curriculum Outcomes Specific Curriculum Outcomes**Time, Continuity, and Change**

GCO: Students will be expected to demonstrate an understanding of the past and how it affects the present and the future.

Students will be expected to

Unit Four: Citizenship

- demonstrate an understanding of the rights and responsibilities of citizenship (local, national, and global)
- demonstrate an understanding of how citizenship has evolved over time
- demonstrate an understanding of the Canadian federal system and the structure and operation of Canadian government

Unit Five: Challenges and Opportunities

- identify and analyse the economic challenges and opportunities for Canada's future
- identify and analyse the political challenges and opportunities for Canada's future
- identify and analyse the social and cultural challenges and opportunities for Canada's future

Unit Six: Summative

- portray and celebrate their understanding of Canadian identity

Technology Education (Draft)

General Curriculum Outcomes Specific Curriculum Outcomes

GCO 1: Students will be expected to design, develop, evaluate, and articulate technological solutions.

GCO 2: Students will be expected to evaluate and manage technological systems.

GCO 3: Students will be expected to demonstrate an understanding of the history and evolution of technology, and of its social and cultural implications.

GCO 4: Students will be expected to demonstrate an understanding of current and evolving careers and of the influence of technology on the nature of work.

GCO 5: Students will be expected to demonstrate an understanding of their personal responsibility in determining the future.

Students will be expected to

Production Technology 8

Big Ideas

Properties of Materials

- identify material as natural, composite, synthetic
- develop a vocabulary of the language and terminology of production
- describe raw materials, industrial materials, and recycled materials
- assess the properties/characteristics of raw and processed materials

Materials Processes

- demonstrate understanding of the principles and practices of materials processing techniques (separating, combining, forming, and finishing)
- examine the impact of local technological products
- examine production technologies and determine how they affect quality of life, sustainable development, and other related issues
- examine a production product's life cycle through a primary and secondary production process

Tools and Machines

- determine the key events in the development of production and manufacturing technologies
- explore different tools, materials, and processes when designing artifacts and systems

Aesthetics

- develop an appropriate sequence of steps to produce the solution, taking into account aesthetics, function, quality construction, and the user
- evaluate elegance in design solutions

General Curriculum Outcomes **Specific Curriculum Outcomes**

Students will be expected to

Ergonomics

- investigate a variety of situations in familiar environments, identify and clearly state needs, problem situations, and opportunities which may be resolved through the design and production of goods and services
- examine production technologies and determine how they affect quality of life, sustainable development, and other related issues

Manufacturing/Production Systems

- research and demonstrate understanding of technological systems used for production of goods

Evaluating Product Design

- use appropriate production-related language to describe problem situations, solution ideas, procedures and processes to implement the solution (including technical drawings) and to assess and report on the effectiveness of the solution
- use communications technologies as an integral component of production processes

Careers, Health, and Safe Practices

- demonstrate understanding of standard safety practices and procedures
- choose and correctly use appropriate tools
- produce quality products by minimizing waste of resources—materials, time, money, energy
- use appropriate language to describe and write about production related issues such as procedures, tools, machines, resource processing, waste management strategies, and environmental issues
- examine production technologies and determine how they affect quality of life, sustainable development, and related issues
- examine the impact of technological change on production related workplaces and careers

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

Basic Skills**Working Drawings**

- develop an appropriate sequence of steps to produce the solution, taking into account aesthetics, function, and quality construction
- use of language and terminology of production drawings
- use communications technologies as an integral component of production processes
- incorporate communications technologies in production related problem solving activities

Basic Tool and Process Skills

- demonstrate understanding of the principles and practices of materials processing techniques (separating, combining, forming, and finishing)
- explore different tools, materials, and processes when designing artifacts and systems
- examine different ways to process materials
- choose and correctly use appropriate tools
- investigate production processes
- use appropriate language to describe and write about production-related issues such as procedures, tools, machines, resource processing, waste management strategies, and environmental issues
- demonstrate understanding of the principles and practices of materials processing techniques (separating, combining, forming, and finishing)
- explore different tools, materials, and processes when designing artifacts and systems
- examine different ways to process materials
- choose and correctly use appropriate tools
- investigate production processes
- use appropriate language to describe and write about production-related issues such as procedures, tools, machines, resource processing, waste management strategies, and environmental issues

General Curriculum Outcomes **Specific Curriculum Outcomes**

Students will be expected to

Skill-Building Activity

- demonstrate understanding of standard safety practices and procedures
- construct products, working from a detailed plan, by employing a variety of materials and technical processes
- produce quality products by minimizing waste of resources—materials, time, money, energy
- use appropriate safety equipment and maintain an orderly work environment
- use appropriate production-related language to describe problem situations, solution ideas, procedures and processes to implement the solution (including technical drawings), and to assess and report on the effectiveness of the solution

Design Activities

Step 1: Problem Situation

- investigate a variety of situations in familiar environments, identify and clearly state needs, problem situations, and opportunities which may be resolved through the design and production of goods and services
- use appropriate production-related language to describe problem situations

Step 2: Design Briefs

- use appropriate language to describe and write about production related issues such as procedures, tools, machines, resource processing, waste management strategies, and environmental issues
- incorporate communications technologies in production-related problem-solving activities

Step 3: Investigation and Research

- research and demonstrate understanding of technological systems used for production of goods and services
- present a critical evaluation of products, both their own and others, including suggestions for improvement
- investigate production processes
- use of language and terminology of production

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

- use appropriate language to describe and write about production-related issues such as procedures, tools, machines, resource processing, waste management strategies, and environmental issues
- use appropriate production related language to describe problem situations, solution ideas, procedures and processes to implement the solution (including technical drawings), and to assess and report on the effectiveness of the solution
- use communications technologies as an integral component of production processes

Step 4: Identify Possible Solutions

- develop multiple options for a solution, and identify the most appropriate solution considering conservation of resources, suitability of the solution, outcomes of the solution, and the technical activity required to produce it
- use appropriate language to describe and write about production related issues such as procedures, tools, machines, resource processing, waste management strategies, and environmental issues

Step 5: Select the Best Solution

- develop multiple options for a solution, and identify the most appropriate solution considering conservation of resources, suitability of the solution, outcomes of the solution and the technical activity required to produce it
- use appropriate language to describe and write about production-related issues such as procedures, tools, machines, resource processing, waste management strategies, and environmental issues

General Curriculum Outcomes **Specific Curriculum Outcomes**

Students will be expected to

Step 6: Develop the Solution

- examine materials and determine their properties
- demonstrate understanding of the principles and practices of materials processing techniques (separating, combining, forming, and finishing)
- determine the key events in the development of production and manufacturing technologies
- demonstrate understanding of standard safety practices and procedures
- develop an appropriate sequence of steps to produce the solution, taking into account aesthetics, function, quality construction, and the user
- explore different tools, materials, and processes when designing artifacts and systems
- examine different ways to process materials
- construct products, working from a detailed plan, by employing a variety of materials and technical processes
- choose and correctly use appropriate tools
- produce quality products by minimizing waste of resources—materials, time, money, energy
- use appropriate safety equipment, and maintain an orderly work environment
- use appropriate production-related language to describe problem situations, solution ideas, procedures and processes to implement the solution (including technical drawings), and to assess and report on the effectiveness of the solution
- use technology problem solving as a means of making connections between knowledge and skills learned in other curriculum areas
- incorporate communications technologies in production related problem-solving activities

Step 7: Evaluate the Solution

- present a critical evaluation of products, both their own and others, including suggestions for improvement
- explore ethical decision making and intellectual honesty as factors in making technological choices
- use appropriate production related language to describe problem situations, solution ideas, procedures and processes to implement the solution (including technical drawings), and to assess and report on the effectiveness of the solution

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

Step 8: Present the Report

- present a critical evaluation of products, both their own and others, including suggestions for improvement
- use appropriate language to describe and write about production related issues such as procedures, tools, machines, resource processing, waste management strategies, and environmental issues
- use communications technologies to collaborate with students, teachers, and others at a distance in order to develop and implement solutions to production problems

Step 9: Collect Portfolios and Solutions

To be developed

Energy, Power, and Transportation 8**Big Ideas****Mass and Force**

- demonstrate an understanding of the term “mass” and state the unit of measurement for mass
- distinguish between mass and weight
- distinguish between force and pressure
- demonstrate an understanding of the term “force” and state the unit of measurement for force
- examine the historical context for the unit measurement of force

Work, Energy, and Power

- define the term “energy” and state the unit of measurement for energy
- define the term “work” and state the unit of measurement for work
- examine the term “power” and state the unit of measurement for power
- distinguish between energy and power

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

Types of Energy

- identify and describe the six major forms of energy
- identify and describe the two types of energy present in the six forms of energy
- identify and differentiate energy as renewable, non-renewable, and inexhaustible

Sources of Energy

- identify examples of energy sources for each type of energy (fossil fuel, nuclear, solar, hydro, thermal, wind, chemical, biomass)
- identify how energy is generated from specific sources
- discuss legal and ethical issues related to the generation of energy

Conversion and Transmission of Energy

- identify examples of energy sources for each type of energy
- identify how energy is generated from specific sources (solar, fossil fuel, nuclear, wind, thermo, hydro, biomass, chemical)
- identify how energy generated from a specific source is converted to end use
- discuss legal and ethical issues related to the conversion of energy

Uses of Energy

- research and report local applications and systems that consume energy
- explain how energy is used in specific applications
- describe the consequences of energy consumption on people, society, and the environment
- explore and report their findings on connections between energy and communications, control, and production systems
- examine new technologies that are evolving for the conversion and transmission of energy
- develop personal rules of conduct for dealing with sources of energy, transmission, and uses of energy

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

Transportation

- examine past, present, and future methods of transportation
- identify examples of the modes of transportation for each transportation system
- explore and report findings on the sub-systems within a transportation system
- discuss and compare legal and ethical issues related to the modes of transportation
- analyse local, provincial, national or global transportation
- describe transportation technology in terms of leisure and recreation, moving people, moving goods
- differentiate mass and individual transportation
- explain and describe fixed route, variable route and stationary land transportation modes

The Career Connection

- examine and consider careers and professions in energy and power and related industries
- demonstrate understanding of the role of developments and new technologies in energy and power on the future of work, society, and the environment, and the need to remain aware of these issues

Basic Skills**Energy Storage and Transmission**

- distinguish between energy storage and energy utilization
- identify and describe energy utilization
- demonstrate ways that energy can be transmitted from one location to another or from one system to another by a number of mechanisms

Energy Conversion

- demonstrate the conversion of energy from one form to another using a variety of simple systems
- identify and describe energy utilization

General Curriculum Outcomes **Specific Curriculum Outcomes**

Students will be expected to

Measuring Energy and Power Energy Transmission

- measure the forces acting in a system
- calculate the work done on a system
- calculate the energy input, output, and efficiency of a system
- calculate the power used by a system

Schematics and Pictorials

- identify basic symbol sets that are employed in schematic drawings
- read and interpret a simple schematic
- relate a schematic drawing to a pictorial drawing
- create simple schematic drawings
- create orthographic projections and isometric drawings to represent system components

Fabrication and Safety

- employ safe practices when fabricating systems and components
- describe proper tool care and maintenance
- employ shaping, forming, combining, and finishing techniques to fabricate the components of mechanical, fluidic, and electronic systems

Transportation

- propose a fixed, variable, or stationary transportation prototype solution to carry an object over a determined distance
- identify subsystems in a design prototype
- identify tools, machines, and techniques needed to construct a prototype design
- safely and responsibly use tools

Design Activities

Step 1: Problem Situation

- identify real life energy, power or transportation problem situations and opportunities, and select one for further development
- develop a rationale for solving a particular problem, and effectively communicate that rationale to others

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

Step 2: Design Briefs

- identify and clearly state energy, power, and transportation problems
- specify conditions and criteria which affect how the problem will be solved
- generate a design brief and place it in the design portfolio

Step 3: Investigation and Research

- investigate ways that other people solved similar problems
- investigate resources available to solve this problem
- use the design portfolio to document the investigation and research

Step 4: Identify Possible Solutions

- use one or more idea generation strategies to identify a range of alternative solutions
- use the design portfolio to document the possible solutions

Step 5: Select the Best Solution

- develop criteria for assessing solution options
- using established criteria, examine the solution options and select the most appropriate
- use the design portfolio to document the proposed solution and the rationale for choosing it

Step 6: Develop the Solution

- identify specific tools and resources and determine new skills they will need to acquire
- create a plan of action
- use safe practices to develop the solution, redesigning as necessary
- use the design portfolio to document the development process, including changes and the rationale for them

Step 7: Evaluate the Solution

- establish criteria for evaluating the solution
- evaluate their solution, based on predetermined criteria
- use the design portfolio to document the evaluation process, including evaluation criteria and how the solution was assessed

General Curriculum Outcomes Specific Curriculum Outcomes

Students will be expected to

Step 8: Present the Report

- develop a presentation plan based on information recorded in the design portfolio
- develop a presentation that demonstrates how the design model was implemented, and the implications of the solution using appropriate presentation tools and strategies
- present the solution and the report to the class

Visual Arts

General Curriculum Outcomes

Key-Stage Curriculum Outcomes

Note: Learning outcomes have not yet been developed for Visual Arts 7–9. Teachers may wish to use the following general curriculum outcomes and key-stage curriculum outcomes from the *Foundation for Atlantic Canada Arts Education Curriculum* in planning their visual arts program.

By the end of grade 9, students will have achieved the outcomes for entry–grade 6 and will also be expected to

Creating, Making, and Presenting

GCO 1: Students will be expected to explore, challenge, develop, and express ideas using the skills, language, techniques, and processes of the arts.

- manipulate and organize design elements and principles to achieve planned compositions
- assess and utilize the properties of various art media and their ability to convey messages and meaning
- create artworks, integrating themes found through direct observation, personal experience, and imagination
- respond verbally and visually to the use of art elements in personal works and the work of others
- analyse and use a variety of image development techniques (e.g., distortion, metamorphosis, fragmentation)
- demonstrate increasing complexity in art skills and techniques

GCO 2: Students will be expected to create and/or present, collaboratively and independently, expressive products in the arts for a range of audiences and purposes.

- invent and incorporate unique visual symbols to create personal meaning in their art
- analyse and make use of visual, spatial, and temporal concepts in creating art images
- select, critique, and organize a display of personally meaningful images from their own portfolio
- acknowledge and respect individual approaches to and opinions of art
- work interactively, co-operatively, and collaboratively

Understanding and Connecting Contexts of Time, Place, and Community

GCO 3: Students will be expected to demonstrate critical awareness of and value the role of the arts in creating and reflecting culture.

- examine the role and the influence of visual images in their daily lives, including mass media and popular culture
- evaluate visual communication systems as a part of daily life
- through their own art develop concepts and imagery based on personal ideas and experience

General Curriculum Outcomes Key-Stage Curriculum Outcomes

By the end of grade 9, students will have achieved the outcomes for entry–grade 6 and will also be expected to

GCO 4: Students will be expected to respect the contributions of individuals and cultural groups to the arts in local and global contexts and value the arts as a record of human experience and expression.

GCO 5: Students will be expected to examine the relationship among the arts, societies, and environments.

Perceiving and Responding

GCO 6: Students will be expected to apply critical thinking and problem solving strategies to reflect on and respond to their own and others' expressive work.

- recognize and describe the role of the visual arts in challenging, sustaining, and reflecting society's beliefs and traditions
- identify opportunities to participate in the visual arts in school, community, and the world of work
- develop an appreciation of diversity among individuals as reflected in their art work
- recognize the existence of a variety of visual languages that reflect cultural, socio-economic, and national origins
- recognize that and investigate how art as a human activity emerges from human needs, values, beliefs, ideas, and experiences
- demonstrate an understanding of how individual and societal values affect our response to visual art
- create personally meaningful imagery that reflects influence from a variety of historical and contemporary artists
- compare the characteristics of artwork from different cultures and periods in history
- draw upon other arts disciplines as a resource in the creation of their own art works
- use, with confidence, experiences from their personal, social, cultural, and physical environments as a basis for visual expression
- demonstrate an understanding of how individual and societal values affect our response to visual art
- interpret visual parallels between the structures of natural and built environments
- recognize and respect the ethical and moral considerations involved in copying works
- develop independent thinking in interpreting and making judgments about subject matter
- constructively critique the work of others
- analyse the works of artists to determine how they have used the elements and principles of design to solve specific visual design problems
- engage in critical reflective thinking as part of the decision-making and problem-solving process
- investigate and analyse how meaning is embedded in works of art

General Curriculum Outcomes Key-Stage Curriculum Outcomes

By the end of grade 9, students will have achieved the outcomes for entry–grade 6 and will also be expected to

GCO 7: Students will be expected to understand the role of technologies in creating and responding to expressive works.

- practise safety associated with proper care of art materials and tools
- create images that solve complex problems that take into consideration form and function, and understand the value of looking for alternative solutions
- evaluate and use various media and technological processes for their sensory qualities and ability to convey messages and meaning
- realize the direct influence expanding technology has had and continues to have on the individual and society

GCO 8: Students will be expected to analyse the relationship between artistic intent and the expressive work.

- analyse artwork and determine the artist's intention
- analyse why images were created by artists
- identify and discuss the source of ideas behind their own work and the work of others
- use feedback from others to examine their own art works in light of their original intent