

# Curriculum Expectations

# GRADE 8

for

English Language  
French as a Second Language  
Mathematics  
Science and Technology  
History  
Geography  
Health & Physical Education  
The Arts



## Writing

### Overall Expectations

- 8e1** • communicate ideas and information for a variety of purposes (to evaluate information, to compare points of view) and to specific audiences, using forms appropriate for their purpose (e.g., a survey soliciting opinions on an environmental issue) and features appropriate to the form (e.g., focused questions);
- 8e2** • use writing for various purposes and in a range of contexts, including school work (e.g., to write technical instructions, to clarify personal concerns, to explore social issues, to develop imaginative abilities);
- 8e3** • organize information and ideas creatively as well as logically, using paragraph structures appropriate for their purpose (e.g., paragraphs structured to develop a comparison or establish a cause-and-effect relationship);
- 8e4** • use a wide variety of sentence types and sentence structures, with conscious attention to style;
- 8e5** • produce pieces of writing using a variety of specific forms (e.g., a script for a play), techniques and resources appropriate to the form and purpose, and materials from other media (e.g., lighting effects);
- 8e6** • produce media texts using writing and materials from other media (e.g., a video documentary on an environmental issue);
- 8e7** • revise and edit their work, focusing on content and on more complex elements of style (e.g., imagery), independently or using feedback from others;
- 8e8** • proofread and correct their final drafts, focusing on grammar, spelling, punctuation, and conventions of style;
- 8e9** • use and spell correctly the vocabulary appropriate for this grade level;
- 8e10** • use correctly the conventions (grammar, spelling, punctuation, etc.) specified for this grade level (see below).

### Grammar

- 8e11** – use case for pronouns correctly (e.g., There is a deep bond between him and me/He and I went to the museum);
- 8e12** – use more complex sentence structures correctly (e.g., sentences using connecting words such as if, as, when, though);

### Punctuation

- 8e13** – use a period and commas accurately with quotation marks;
- 8e14** – use the comma to separate an introductory phrase or clause from the main part of the sentence, and to separate phrases and clauses in a series;
- 8e15** – use quotation marks to distinguish words being discussed (e.g., Most people spell “receive” incorrectly) and to indicate titles of songs, poems, essays, and articles;
- 8e16** – use the ellipsis (three periods) to show that words have been omitted from a quotation or that a sentence is unfinished;
- 8e17** – use a dash to show a sentence break or interrupted speech;

### Spelling

- 8e18** – use generalizations about spelling and their knowledge of how words are formed to spell technical terms and unfamiliar words;

### Word Use and Vocabulary Building

- 8e19** – use the vocabulary expected for this grade level accurately and imaginatively in their writing;
- 8e20** – select and use their words with increasing sophistication and effectiveness;

### Visual Presentation

- 8e21** – use italics or underlining for titles of books, movies, plays, and magazines;

- 8e22 – use different styles of type appropriately for specific purposes (e.g., bold type for emphasis);
- 8e23 – use spreadsheets, computer-generated charts, and graphs for specific purposes (e.g., to convey data) and in appropriate contexts (e.g., research reports).

## Reading

### Overall Expectations

- 8e24 • read a variety of fiction and non-fiction materials (e.g., novels, short stories, poetry, essays, articles) for different purposes;
- 8e25 • read aloud, showing understanding of the material and awareness of the audience;
- 8e26 • read independently, selecting appropriate reading strategies;
- 8e27 • explain their interpretation of a written work, supporting it with evidence from the work and from their own knowledge and experience;
- 8e28 • decide on a specific purpose for reading, and select the material that they need from a variety of appropriate sources;
- 8e29 • understand the vocabulary and language structures appropriate for this grade level;
- 8e30 • use conventions of written materials to help them understand and use the materials.

### Reasoning and Critical Thinking

- 8e31 – explain how the various elements in a story function in relation to each other;
- 8e32 – identify the main ideas in information materials, explain how the details support the main ideas, and question and evaluate the ideas in the material;
- 8e33 – make judgements and draw conclusions about ideas in written materials on the basis of evidence;
- 8e34 – clarify and broaden their own points of view by examining the ideas of others;
- 8e35 – select appropriate reading strategies (e.g., skim text for specific information; scan text to determine the purpose of the text or the type of material; monitor their own comprehension);
- 8e36 – plan a research project and carry out the research;

### Understanding of Form and Style

- 8e37 – identify various forms of writing and describe their key features (e.g., novels, short stories, poetry, plays, scripts, essays);
- 8e38 – use their knowledge of the characteristics of different forms of writing to help them select appropriate materials for a specific purpose;
- 8e39 – identify some stylistic devices used in literary works (e.g., metaphor, simile, personification) and explain their use;

### Knowledge of Language Structures

- 8e40 – use their knowledge of the elements of grammar and the structure of words and sentences to understand what they read;

### Vocabulary Building

- 8e41 – use a variety of strategies to determine the meaning of unfamiliar words (e.g., use word-analysis techniques; use knowledge of word origins and derivations; consult dictionaries);
- 8e42 – use a thesaurus to expand their vocabulary;
- 8e43 – use the special terminology in a particular area of study, as necessary.

### Use of Conventions

- 8e44 – use punctuation to help them understand written material (e.g., dashes);
- 8e45 – use a variety of conventions of formal texts to locate information they need (e.g., footnotes, endnotes, lists).

**Oral and Visual Communication****Overall Expectations**

- 8e46** • provide clear answers to questions and well-constructed explanations or instructions in classroom work;
- 8e47** • listen attentively to organize and classify information and to clarify thinking;
- 8e48** • listen to and communicate connected ideas and relate carefully-constructed narratives about real and fictional events;
- 8e49** • express and respond to a range of ideas and opinions concisely, clearly, and appropriately;
- 8e50** • contribute and work constructively in groups;
- 8e51** • demonstrate the ability to concentrate by identifying main points and staying on topic;
- 8e52** • identify a wide range of media works and describe the techniques used in them;
- 8e53** • analyse and interpret media works;
- 8e54** • create media works of some technical complexity;
- 8e55** • use the conventions (e.g., sentence structure) of oral language, and of the various media, that are appropriate to the grade (see below).

**Use of Words and Oral Language Structures**

- 8e56** – use the specialized vocabulary appropriate to the topic in oral presentations (e.g., investigations in mathematics, demonstrations in science);
- 8e57** – identify subtle effects in the dialogue in films or dramas;
- 8e58** – identify the characteristics of different types of speech (e.g., colloquial, formal) and use them appropriately;

**Non-verbal Communication Skills**

- 8e59** – use tone of voice and body language to clarify meaning during conversations and presentations;
- 8e60** – adjust their delivery (e.g., pitch of voice, pace) to suit the size of different groups;
- 8e61** – use resource materials (e.g., visual aids) to illustrate ideas in presentations;

**Group Skills**

- 8e62** – contribute collaboratively in group situations by asking questions and building on the ideas of others;
- 8e63** – work with members of their group to establish clear purposes and procedures for solving problems and completing projects;

**Media Communication Skills**

- 8e64** – identify and analyse the formulas used in different categories of media works (e.g., a talk show – opening monologue, humorous discussion between host and “sidekick”, guest interview, interaction with the audience, special performances);
- 8e65** – describe a media work, outlining its different parts and the steps and choices involved in planning and producing it;
- 8e66** – evaluate the effectiveness of various informational media works (e.g., a website on the Internet, a documentary film, television or radio news programs, news magazines);
- 8e67** – create media works of some technical complexity (e.g., a two-minute mystery on videotape or audiotape).

## Oral Communication, Reading, and Writing

### Overall Expectations

- 8f1** • listen to and talk about simple oral texts in structured and open-ended situations;
- 8f2** • express ideas, feelings, and opinions in conversations and discussions, using learned language structures and a variety of vocabulary and expressions;
- 8f3** • read a variety of simple materials, 400 to 600 words long, and demonstrate understanding;
- 8f4** • write in a variety of forms, adjusting language to suit the audience;
- 8f5** • identify and use the vocabulary and the grammar and language conventions appropriate for this grade level.

### Oral Communication

- 8f6** – use compound and complex sentences in conversations and discussions (e.g., *Pauline n'a pas fait ses devoirs parce qu'elle a regardé la télé hier soir*);
- 8f7** – respond to oral texts (e.g., answer questions, role-play);
- 8f8** – use language appropriately in a variety of rehearsed, routine, and open-ended situations (e.g., an interview, a song lyric, an advertisement for a new restaurant);
- 8f9** – give an oral presentation of more than twenty sentences in length, adjusting speech to suit the audience.

### Reading

- 8f10** – read at least fifteen simple texts (e.g., excerpts from newspapers, magazines), and identify the main idea and supporting details;
- 8f11** – produce a variety of simple responses, in structured and open-ended situations, to convey understanding of written text in a different form (e.g., re-create a scene, design a book jacket);
- 8f12** – express personal preferences or reactions to a text (e.g., in a dramatization).

### Writing

- 8f13** – use simple and compound sentences, and organize information in paragraphs;
- 8f14** – use strategies (e.g., brainstorming, mind mapping) to plan and write first and final drafts in guided and cooperative writing tasks;
- 8f15** – produce pieces of writing in a variety of simple forms (e.g., lists, dialogues, illustrated stories), following and making adaptations to a model;
- 8f16** – proofread and correct final drafts, focusing on grammar, punctuation, and spelling;
- 8f17** – use and spell the vocabulary appropriate for this grade level.

**Mathematical Process Expectations****Problem Solving**

- 8m1** • develop, select, apply, and compare a variety of problem-solving strategies as they pose and solve problems and conduct investigations, to help deepen their mathematical understanding;

**Reasoning And Proving**

- 8m2** • develop and apply reasoning skills (e.g., recognition of relationships, generalization through inductive reasoning, use of counter-examples) to make mathematical conjectures, assess conjectures and justify conclusions, and plan and construct organized mathematical arguments;

**Reflecting**

- 8m3** • demonstrate that they are reflecting on and monitoring their thinking to help clarify their understanding as they complete an investigation or solve a problem (e.g., by assessing the effectiveness of strategies and processes used, by proposing alternative approaches, by judging the reasonableness of results, by verifying solutions);

**Selecting Tools and Computational Strategies**

- 8m4** • select and use a variety of concrete, visual, and electronic learning tools and appropriate computational strategies to investigate mathematical ideas and to solve problems;

**Connecting**

- 8m5** • make connections among mathematical concepts and procedures, and relate mathematical ideas to situations or phenomena drawn from other contexts (e.g., other curriculum areas, daily life, current events, art and culture, sports);

**Representing**

- 8m6** • create a variety of representations of mathematical ideas (e.g., numeric, geometric, algebraic, graphical, pictorial; onscreen dynamic representations), connect and compare them, and select and apply the appropriate representations to solve problems;

**Communicating**

- 8m7** • communicate mathematical thinking orally, visually, and in writing, using mathematical vocabulary and a variety of appropriate representations, and observing mathematical conventions.

**Number Sense and Numeration****Overall Expectations**

- 8m8** • represent, compare, and order equivalent representations of numbers, including those involving positive exponents;
- 8m9** • solve problems involving whole numbers, decimal numbers, fractions, and integers, using a variety of computational strategies;
- 8m10** • solve problems by using proportional reasoning in a variety of meaningful contexts.

**Quantity Relationships**

- 8m11** – express repeated multiplication using exponential notation (e.g.,  $2 \times 2 \times 2 \times 2 = 2^4$ );
- 8m12** – represent whole numbers in expanded form using powers of ten (e.g.,  $347 = 3 \times 10^2 + 4 \times 10^1 + 7$ );
- 8m13** – represent, compare, and order rational numbers (i.e., positive and negative fractions and decimals to thousandths);
- 8m14** – translate between equivalent forms of a number (i.e., decimals, fractions, percents) (e.g.,  $3/4 = 0.75$ );
- 8m15** – determine common factors and common multiples using the prime factorization of numbers (e.g., the prime factorization of 12 is  $2 \times 2 \times 3$ ; the prime factorization of 18 is  $2 \times 3 \times 3$ ; the greatest common factor of 12 and 18 is  $2 \times 3$  or 6; the least common multiple of 12 and 18 is  $2 \times 2 \times 3 \times 3$  or 36).

## Operational Sense

- 8m16** – solve multi-step problems arising from real-life contexts and involving whole numbers and decimals, using a variety of tools (e.g., graphs, calculators) and strategies (e.g., estimation, algorithms);
- 8m17** – solve problems involving percents expressed to one decimal place (e.g., 12.5%) and whole-number percents greater than 100 (e.g., 115%) (Sample problem: The total cost of an item with tax included [115%] is \$23.00. Use base ten materials to determine the price before tax.);
- 8m18** – use estimation when solving problems involving operations with whole numbers, decimals, percents, integers, and fractions, to help judge the reasonableness of a solution;
- 8m19** – represent the multiplication and division of fractions, using a variety of tools and strategies (e.g., use an area model to represent  $\frac{1}{4}$  multiplied by  $\frac{1}{3}$ );
- 8m20** – solve problems involving addition, subtraction, multiplication, and division with simple fractions;
- 8m21** – represent the multiplication and division of integers, using a variety of tools [e.g., if black counters represent positive amounts and red counters represent negative amounts, you can model  $3 \times (-2)$  as three groups of two red counters];
- 8m22** – solve problems involving operations with integers, using a variety of tools (e.g., two-colour counters, virtual manipulatives, number lines);
- 8m23** – evaluate expressions that involve integers, including expressions that contain brackets and exponents, using order of operations;
- 8m24** – multiply and divide decimal numbers by various powers of ten (e.g., "To convert 230 000 cm<sup>3</sup> to cubic metres, I calculated in my head  $230000 \div 10^6$  to get 0.23 m<sup>3</sup>.") (Sample problem: Use a calculator to help you generalize a rule for dividing numbers by 1 000 000.);
- 8m25** – estimate, and verify using a calculator, the positive square roots of whole numbers, and distinguish between whole numbers that have whole-number square roots (i.e., perfect square numbers) and those that do not (Sample problem: Explain why a square with an area of 20 cm<sup>2</sup> does not have a whole-number side length.).

## Proportional Relationships

- 8m26** – identify and describe real-life situations involving two quantities that are directly proportional (e.g., the number of servings and the quantities in a recipe, mass and volume of a substance, circumference and diameter of a circle);
- 8m27** – solve problems involving proportions, using concrete materials, drawings, and variables (Sample problem: The ratio of stone to sand in HardFast Concrete is 2 to 3. How much stone is needed if 15 bags of sand are used?);
- 8m28** – solve problems involving percent that arise from real-life contexts (e.g., discount, sales tax, simple interest) (Sample problem: In Ontario, people often pay a provincial sales tax [PST] of 8% and a federal sales tax [GST] of 7% when they make a purchase. Does it matter which tax is calculated first? Explain your reasoning.);
- 8m29** – solve problems involving rates (Sample problem: A pack of 24 CDs costs \$7.99. A pack of 50 CDs costs \$10.45. What is the most economical way to purchase 130 CDs?).

## Measurement

### Overall Expectations

- 8m30** • research, describe, and report on applications of volume and capacity measurement;
- 8m31** • determine the relationships among units and measurable attributes, including the area of a circle and the volume of a cylinder.

### Attributes, Units, and Measurement Sense

- 8m32** – research, describe, and report on applications of volume and capacity measurement (e.g., cooking, closet space, aquarium size) (Sample problem: Describe situations where volume and capacity are used in your home.).

## Measurement Relationships

- 8m33** – solve problems that require conversions involving metric units of area, volume, and capacity (i.e., square centimetres and square metres; cubic centimetres and cubic metres; millilitres and cubic centimetres) (Sample problem: What is the capacity of a cylindrical beaker with a radius of 5 cm and a height of 15 cm?);
- 8m34** – measure the circumference, radius, and diameter of circular objects, using concrete materials (Sample Problem: Use string to measure the circumferences of different circular objects.);
- 8m35** – determine, through investigation using a variety of tools (e.g., cans and string, dynamic geometry software) and strategies, the relationships for calculating the circumference and the area of a circle, and generalize to develop the formulas [i.e., Circumference of a circle =  $\pi$  x diameter; Area of a circle =  $\pi$  x (radius)<sup>2</sup>] (Sample problem: Use string to measure the circumferences and the diameters of a variety of cylindrical cans, and investigate the ratio of the circumference to the diameter.);
- 8m36** – solve problems involving the estimation and calculation of the circumference and the area of a circle;
- 8m37** – determine, through investigation using a variety of tools and strategies (e.g., generalizing from the volume relationship for right prisms, and verifying using the capacity of thin-walled cylindrical containers), the relationship between the area of the base and height and the volume of a cylinder, and generalize to develop the formula (i.e., Volume = area of base x height);
- 8m38** – determine, through investigation using concrete materials, the surface area of a cylinder (Sample problem: Use the label and the plastic lid from a cylindrical container to help determine its surface area.);
- 8m39** – solve problems involving the surface area and the volume of cylinders, using a variety of strategies (Sample problem: Compare the volumes of the two cylinders that can be created by taping the top and bottom, or the other two sides, of a standard sheet of paper.).

## Geometry and Spatial Sense

### Overall Expectations

- 8m40** • demonstrate an understanding of the geometric properties of quadrilaterals and circles and the applications of geometric properties in the real world;
- 8m41** • develop geometric relationships involving lines, triangles, and polyhedra, and solve problems involving lines and triangles;
- 8m42** • represent transformations using the Cartesian coordinate plane, and make connections between transformations and the real world.

### Geometric Properties

- 8m43** – sort and classify quadrilaterals by geometric properties, including those based on diagonals, through investigation using a variety of tools (e.g., concrete materials, dynamic geometry software) (Sample problem: Which quadrilaterals have diagonals that bisect each other perpendicularly?);
- 8m44** – construct a circle, given its centre and radius, or its centre and a point on the circle, or three points on the circle;
- 8m45** – investigate and describe applications of geometric properties (e.g., properties of triangles, quadrilaterals, and circles) in the real world.

### Geometric Relationships

- 8m46** – determine, through investigation using a variety of tools (e.g., dynamic geometry software, concrete materials, geoboard), relationships among area, perimeter, corresponding side lengths, and corresponding angles of similar shapes (Sample problem: Construct three similar rectangles, using grid paper or a geoboard, and compare the perimeters and areas of the rectangles.);
- 8m47** – determine, through investigation using a variety of tools (e.g., dynamic geometry software, concrete materials, protractor) and strategies (e.g., paper folding), the angle relationships for intersecting lines and for parallel lines and transversals, and the sum of the angles of a triangle;

- 8m48** – solve angle-relationship problems involving triangles (e.g., finding interior angles or complementary angles), intersecting lines (e.g., finding supplementary angles or opposite angles), and parallel lines and transversals (e.g., finding alternate angles or corresponding angles);
- 8m49** – determine the Pythagorean relationship, through investigation using a variety of tools (e.g., dynamic geometry software; paper and scissors; geoboard) and strategies;
- 8m50** – solve problems involving right triangles geometrically, using the Pythagorean relationship;
- 8m51** – determine, through investigation using concrete materials, the relationship between the numbers of faces, edges, and vertices of a polyhedron (i.e., number of faces + number of vertices = number of edges + 2) (Sample problem: Use Polydrons and/or paper nets to construct the five Platonic solids [i.e., tetrahedron, cube, octahedron, dodecahedron, icosahedron], and compare the sum of the numbers of faces and vertices to the number of edges for each solid.).

## Location and Movement

- 8m52** – graph the image of a point, or set of points, on the Cartesian coordinate plane after applying a transformation to the original point(s) (i.e., translation; reflection in the x-axis, the y-axis, or the angle bisector of the axes that passes through the first and third quadrants; rotation of  $90^\circ$ ,  $180^\circ$ , or  $270^\circ$  about the origin);
- 8m53** – identify, through investigation, real-world movements that are translations, reflections, and rotations.

## Patterning and Algebra

### Overall Expectations

- 8m54** • represent linear growing patterns (where the terms are whole numbers) using graphs, algebraic expressions, and equations;
- 8m55** • model linear relationships graphically and algebraically, and solve and verify algebraic equations, using a variety of strategies, including inspection, guess and check, and using a "balance" model.

### Patterns and Relationships

- 8m56** – represent, through investigation with concrete materials, the general term of a linear pattern, using one or more algebraic expressions (e.g., "Using toothpicks, I noticed that 1 square needs 4 toothpicks, 2 connected squares need 7 toothpicks, and 3 connected squares need 10 toothpicks. I think that for  $n$  connected squares I will need  $4 + 3(n - 1)$  toothpicks, because the number of toothpicks keeps going up by 3 and I started with 4 toothpicks. Or, if I think of starting with 1 toothpick and adding 3 toothpicks at a time, the pattern can be represented as  $1 + 3n$ .");
- 8m57** – represent linear patterns graphically (i.e., make a table of values that shows the term number and the term, and plot the coordinates on a graph), using a variety of tools (e.g., graph paper, calculators, dynamic statistical software);
- 8m58** – determine a term, given its term number, in a linear pattern that is represented by a graph or an algebraic equation (Sample problem: Given the graph that represents the pattern 1, 3, 5, 7, ..., find the 10th term. Given the algebraic equation that represents the pattern,  $t = 2n - 1$ , find the 100th term.).

### Variables, Expressions, and Equations

- 8m59** – describe different ways in which algebra can be used in real-life situations (e.g., the value of \$5 bills and toonies placed in an envelope for fund raising can be represented by the equation  $v = 5f + 2t$ );

- 8m60** – model linear relationships using tables of values, graphs, and equations (e.g., the sequence 2, 3, 4, 5, 6, ... can be represented by the equation  $t = n + 1$ , where  $n$  represents the term number and  $t$  represents the term), through investigation using a variety of tools (e.g., algebra tiles, pattern blocks, connecting cubes, base ten materials) (Sample problem: Leah put \$350 in a bank certificate that pays 4% simple interest each year. Make a table of values to show how much the bank certificate is worth after five years, using base ten materials to help you. Represent the relationship using an equation.);
- 8m61** – translate statements describing mathematical relationships into algebraic expressions and equations (e.g., for a collection of triangles, the total number of sides is equal to three times the number of triangles or  $s = 3n$ );
- 8m62** – evaluate algebraic expressions with up to three terms, by substituting fractions, decimals, and integers for the variables (e.g., evaluate  $3x + 4y = 2z$ , where  $x = 1/2$ ,  $y = 0.6$ , and  $z = -1$ );
- 8m63** – make connections between solving equations and determining the term number in a pattern, using the general term (e.g., for the pattern with the general term  $2n + 1$ , solving the equation  $2n + 1 = 17$  tells you the term number when the term is 17);
- 8m64** – solve and verify linear equations involving a one-variable term and having solutions that are integers, by using inspection, guess and check, and a "balance" model (Sample problem: What is the value of the variable in the equation  $30x - 5 = 10$ ?).

## Data Management and Probability

### Overall Expectations

- 8m65** • collect and organize categorical, discrete, or continuous primary data and secondary data and display the data using charts and graphs, including frequency tables with intervals, histograms, and scatter plots;
- 8m66** • apply a variety of data management tools and strategies to make convincing arguments about data;
- 8m67** • use probability models to make predictions about real-life events.

### Collection and Organization of Data

- 8m68** – collect data by conducting a survey or an experiment to do with themselves, their environment, issues in their school or community, or content from another subject, and record observations or measurements;
- 8m69** – organize into intervals a set of data that is spread over a broad range (e.g., the age of respondents to a survey may range over 80 years and may be organized into ten-year intervals);
- 8m70** – collect and organize categorical, discrete, or continuous primary data and secondary data (e.g., electronic data from websites such as E-Stat or Census At Schools), and display the data in charts, tables, and graphs (including histograms and scatter plots) that have appropriate titles, labels (e.g., appropriate units marked on the axes), and scales (e.g., with appropriate increments) that suit the range and distribution of the data, using a variety of tools (e.g., graph paper, spreadsheets, dynamic statistical software);
- 8m71** – select an appropriate type of graph to represent a set of data, graph the data using technology, and justify the choice of graph (i.e., from types of graphs already studied, including histograms and scatter plots); – explain the relationship between a census, a representative sample, sample size, and a population (e.g., "I think that in most cases a larger sample size will be more representative of the entire population.");
- 8m72** – explain the relationship between a census, a representative sample, sample size, and a population (e.g., "I think that in most cases a larger sample size will be more representative of the entire population.").

## Data Relationships

- 8m73** – read, interpret, and draw conclusions from primary data (e.g., survey results, measurements, observations) and from secondary data (e.g., election data or temperature data from the newspaper, data from the Internet about lifestyles), presented in charts, tables, and graphs (including frequency tables with intervals, histograms, and scatter plots);
- 8m74** – determine, through investigation, the appropriate measure of central tendency (i.e., mean, median, or mode) needed to compare sets of data (e.g., in hockey, compare heights or masses of players on defence with that of forwards);
- 8m75** – demonstrate an understanding of the appropriate uses of bar graphs and histograms by comparing their characteristics (Sample problem: How is a histogram similar to and different from a bar graph? Use examples to support your answer.);
- 8m76** – compare two attributes or characteristics (e.g., height versus arm span), using a scatter plot, and determine whether or not the scatter plot suggests a relationship (Sample problem: Create a scatter plot to compare the lengths of the bases of several similar triangles with their areas.);
- 8m77** – identify and describe trends, based on the rate of change of data from tables and graphs, using informal language (e.g., "The steep line going upward on this graph represents rapid growth. The steep line going downward on this other graph represents rapid decline.");
- 8m78** – make inferences and convincing arguments that are based on the analysis of charts, tables, and graphs (Sample problem: Use data to make a convincing argument that the environment is becoming increasingly polluted.);
- 8m79** – compare two attributes or characteristics, using a variety of data management tools and strategies (i.e., pose a relevant question, then design an experiment or survey, collect and analyse the data, and draw conclusions) (Sample problem: Compare the length and width of different-sized leaves from a maple tree to determine if maple leaves grow proportionally. What generalizations can you make?).

## Probability

- 8m80** – compare, through investigation, the theoretical probability of an event (i.e., the ratio of the number of ways a favourable outcome can occur compared to the total number of possible outcomes) with experimental probability, and explain why they might differ (Sample problem: Toss a fair coin 10 times, record the results, and explain why you might not get the predicted result of 5 heads and 5 tails.);
- 8m81** – determine, through investigation, the tendency of experimental probability to approach theoretical probability as the number of trials in an experiment increases, using class-generated data and technology-based simulation models (Sample problem: Compare the theoretical probability of getting a 6 when tossing a number cube with the experimental probabilities obtained after tossing a number cube once, 10 times, 100 times, and 1000 times.);
- 8m82** – identify the complementary event for a given event, and calculate the theoretical probability that a given event will not occur (Sample problem: Bingo uses the numbers from 1 to 75. If the numbers are pulled at random, what is the probability that the first number is a multiple of 5? is not a multiple of 5?).

## Life Systems

### Overall Expectations

- 8s1** • demonstrate an understanding of the basic structure and function of plant and animal cells, and describe the hierarchical organization of cells in plants and animals;
- 8s2** • investigate basic cellular processes and certain specialized cells in plants;
- 8s3** • describe ways in which study of the structure, function, and interdependence of human organ systems can result in improvements in human health.

### Understanding Basic Concepts

- 8s4** – identify unicellular organisms (e.g., amoebae) and multicellular organisms (e.g., worms, humans);
- 8s5** – investigate ways in which unicellular organisms meet their basic needs (e.g., for food, movement);
- 8s6** – identify organelles in cells through observation (e.g., vacuole, nucleus, chloroplast) and explain their functions;
- 8s7** – describe, using their observations, differences in structure between plant and animal cells;
- 8s8** – describe the organization of cells into tissues, organs, and systems;
- 8s9** – explain the function of selectively permeable membranes in cells;
- 8s10** – describe and explain the structure and function of specialized cells and tissues in different parts of plants (e.g., in roots, stems, leaves);
- 8s11** – recognize that cells in multicellular organisms need to reproduce to make more cells to form and repair tissues;
- 8s12** – explain how the structure of the roots, stem, and leaves of a plant permit the movement of food, water, and gases;
- 8s13** – compare the structure of different plants (e.g., cactus, coniferous tree, moss) and show how their structure enables them to live in specific conditions;
- 8s14** – describe, using their observations, the movement of gases and water into and out of cells during diffusion and osmosis.

### Developing Skills of Inquiry, Design and Communication

- 8s15** – use a microscope accurately to find, observe, and draw microscopic objects;
- 8s16** – formulate questions about and identify needs related to the functioning of cells, and explore possible answers to these questions and ways of meeting these needs (e.g., design and conduct an experiment to test a hypothesis about the effect of chemicals on a unicellular organism; design and conduct an experiment to test the effectiveness of different substances in preventing cut flowers from wilting);
- 8s17** – plan investigations for some of these answers and solutions, identifying variables that need to be held constant to ensure a fair test and identifying criteria for assessing solutions;
- 8s18** – use appropriate vocabulary, including correct science and technology terminology, to communicate ideas, procedures, and results (e.g., use scientific terms such as organelle, diffusion, osmosis, selectively permeable);
- 8s19** – compile qualitative and quantitative data gathered through investigation in order to record and present results, using diagrams, flow charts, frequency tables, graphs, and stem-and-leaf plots produced by hand or with a computer (e.g., use a diagram to present an estimate of the number of cells in a petri dish);
- 8s20** – communicate the procedures and results of investigations for specific purposes and to specific audiences, using media works, oral presentations, written notes and descriptions, charts, graphs, and drawings (e.g., create a simulation illustrating movement of water and nutrients between cells and through various organs and systems).

## Relating Science and Technology to the World Outside the School

- 8s21** – describe the needs and functions of various cells and organs in relationship to the needs of the human body as a whole;
- 8s22** – describe the basic factors that contribute to the efficient functioning of the human respiratory, circulatory, digestive, excretory, and nervous systems;
- 8s23** – describe some ways in which the various systems in the human body are interdependent;
- 8s24** – describe similarities and differences in the functions of comparable structures in different groups of living things (e.g., compare the food intake and digestion of a unicellular organism, an invertebrate, and a vertebrate);
- 8s25** – describe ways in which research about cells has brought about improvements in human health and nutrition (e.g., development of medicines, immunization procedures, and diets based on the needs of organs such as the heart);
- 8s26** – describe ways in which substances work by altering the way cells function (e.g., insulin);
- 8s27** – describe ways in which various types of cells contribute to the healthy functioning of the human body (e.g., red blood cells transport oxygen throughout the body);
- 8s28** – illustrate how blood is pushed by pressure throughout the body to carry oxygen and nutrients to cells, tissues, and organs.

## Matter and Materials

### Overall Expectations

- 8s29** • demonstrate an understanding of the properties (e.g., viscosity) and the buoyant force of fluids;
- 8s30** • investigate the buoyant force and other properties (e.g., viscosity) of fluids, and design and construct pneumatic or hydraulic systems that solve a problem in a given situation;
- 8s31** • describe how knowledge of the properties of fluids can help us to understand and influence organisms in the natural world, and to design and operate technological devices and to evaluate how efficiently different devices make use of these properties.

### Understanding Basic Concepts

- 8s32** – compare various liquids in terms of their viscosity (e.g., water, syrup, oil, detergent, ketchup);
- 8s33** – compare qualitatively the densities of solids, liquids, and gases;
- 8s34** – predict how the flow rate (an indicator of viscosity) of different liquids is affected by temperature;
- 8s35** – describe qualitatively the relationship between mass and weight (e.g., the mass of an object is constant but the weight of an object varies as the pull of gravity on the object changes);
- 8s36** – describe qualitatively the relationship between viscosity and density (e.g., with some exceptions, the greater the viscosity, the greater the density);
- 8s37** – determine, through experimentation, the mass-to-volume ratio of different amounts of the same substance (e.g., copper pennies);
- 8s38** – describe the relationship between the mass, volume, and density of solids, liquids, and gases, using the particle theory;
- 8s39** – compare fluids in terms of their compressibility or incompressibility (e.g., gases versus liquids);
- 8s40** – recognize and state the relationship between gravity and buoyancy (e.g., without gravity there is no buoyancy);
- 8s41** – explain the effects of changes in temperature on the density of solids, liquids, and gases, and relate their findings to the particle model of matter;

- 8s42 – predict the effect of applying external pressure on the behaviour of fluids;
- 8s43 – compare different liquids to determine how they alter the buoyant force on a given object;
- 8s44 – compare liquids and air in terms of their efficiency as transmitters of force in pneumatic and hydraulic devices.

## Developing Skills of Inquiry, Design and Communication

- 8s45 – design and build devices that use pneumatic or hydraulic systems;
- 8s46 – design, make, and calibrate a hydrometer and use it to compare the density of water with that of another liquid;
- 8s47 – design and construct a model of a common device that uses pneumatic or hydraulic systems (e.g., dentist’s chair, automobile hoist);
- 8s48 – formulate questions about and identify needs and problems related to the properties of fluids, and explore possible answers and solutions (e.g., design a fair test to determine whether oil, water, or glycerol has the greatest viscosity);
- 8s49 – plan investigations for some of these answers and solutions, identifying variables that need to be held constant to ensure a fair test and identifying criteria for assessing solutions;
- 8s50 – use appropriate vocabulary, including correct science and technology terminology, to communicate ideas, procedures, and results (e.g., use terms such as flow rate, viscosity, compressibility, fluid, density, pneumatics, hydraulics);
- 8s51 – compile qualitative and quantitative data gathered through investigation in order to record and present results, using diagrams, flow charts, frequency tables, graphs, and stem-and-leaf plots produced by hand or with a computer (e.g., accurately measure and record the density of different liquids using a hydrometer);
- 8s52 – communicate the procedures and results of investigations for specific purposes and to specific audiences, using media works, written notes and descriptions, charts, graphs, drawings, and oral presentations (e.g., create a table to show the relationship between the buoyant force and size of object);
- 8s53 – use the most appropriate items from a selection of tools, equipment, and materials to perform a specific task (e.g., use nuts and bolts to make temporary joints and screws to make permanent joints; use a power sander for shaping and finishing);
- 8s54 – follow safe work procedures (e.g., check the condition of tools and equipment prior to using them).

## Relating Science and Technology to the World Outside the School

- 8s55 – describe situations in which the density of a substance changes naturally (e.g., molten lava as it cools; air when mirages form) or is intentionally altered (e.g., air in a hot-air balloon; cream when it is churned and cooled);
- 8s56 – identify substances that are useful because of their viscosity (e.g., sauces, vegetable oil, asphalt, hand lotion);
- 8s57 – compare the way fluids function in living things with the way they function in manufactured devices (e.g., compare the human circulatory system and a fuel pump);
- 8s58 – explain how the study of hydraulic systems enhances medical knowledge about vascular systems (e.g., by clarifying how valves control blood flow);
- 8s59 – describe some effects of technological innovations related to hydraulics and pneumatics (e.g., getting water from a tap rather than a well results in a reduced need for manual labour; using automatic transmissions rather than mechanical linkages results in greater efficiency);
- 8s60 – identify some design features (e.g., of aircraft, cars, submarines) and explain how the design makes use of one or more of the properties of fluids;

- 8s61** – identify industries in which the principles of fluid dynamics play a central role (e.g., aeronautics, shipping).

## Energy and Control

### Overall Expectations

- 8s62** • demonstrate an understanding of the properties of visible light and the properties of other types of electromagnetic radiation, including infrared and ultraviolet rays, X-rays, microwaves, and radio waves;
- 8s63** • investigate the properties of visible light, including the effects of reflection and refraction, and recognize how these properties are used in optical devices;
- 8s64** • describe ways in which different sources of visible light and the properties of light, both natural and artificial, are used by humans for different purposes.

### Understanding Basic Concepts

- 8s65** – identify the properties of visible light through experimentation;
- 8s66** – compare the properties of visible light with the properties of other types of electromagnetic radiation, including infrared and ultraviolet rays, X-rays, microwaves, and radio waves;
- 8s67** – describe how incandescent, fluorescent, and phosphorescent sources produce light;
- 8s68** – identify colours as different wavelengths of light and explain why objects appear to have colour;
- 8s69** – describe qualitatively how visible light is refracted;
- 8s70** – investigate how objects or media refract, transmit, or absorb light (e.g., non-luminous objects are seen when reflected light enters the eye; stars are seen when transmitted light enters the eye);
- 8s71** – identify ways in which the characteristics of mirrors and convex and concave lenses determine their use in optical instruments (e.g., in a camera, a telescope, binoculars, a microscope);
- 8s72** – investigate and describe the laws of reflection of visible light (e.g., using a plane mirror);
- 8s73** – explain colour vision using the additive theory;
- 8s74** – describe the effect of colour filters on white light using the subtractive theory.

### Developing Skills of Inquiry, Design and Communication

- 8s75** – formulate questions about and identify needs and problems related to the properties and behaviour of light (e.g., interactions between light and different materials), and explore possible answers and solutions (e.g., predict and demonstrate how various liquids will refract a light beam and describe the angle of refraction);
- 8s76** – plan investigations for some of these answers and solutions, identifying variables that need to be held constant to ensure a fair test and identifying criteria for assessing solutions;
- 8s77** – use appropriate vocabulary, including correct science and technology terminology, to communicate ideas, procedures, and results (e.g., use terms such as incidence, reflection, refraction, wavelength, frequency when describing the properties of light);
- 8s78** – compile qualitative and quantitative data gathered through investigation in order to record and present results, using diagrams, flow charts, frequency tables, graphs, and stem-and-leaf plots by hand or with a computer (e.g., use light sensors to identify and record different light intensities and present the findings in a chart);

- 8s79** – communicate the procedures and results of investigations for specific purposes and to specific audiences, using media works, written notes and descriptions, charts, graphs, drawings, and oral presentations (e.g., prepare a brochure informing the public of the risks of a specific type of electromagnetic radiation).

## Relating Science and Technology to the World Outside the School

- 8s80** – describe how energy comes to earth as radiation in a range of wavelengths, some of which are visible;
- 8s81** – identify ways in which the properties of reflection are used in everyday situations (e.g., cosmetology, rear-view mirrors in cars, security mirrors, night reflectors on jackets or bicycles);
- 8s82** – explain the function and purpose of combinations of multiple lenses or lenses and mirrors in optical systems (e.g., the source and one or more reflectors or lenses in cameras, periscopes, telescopes);
- 8s83** – compare the automatic functions of the human eye to functions in an automatic camera (e.g., focusing power, adaptation to brightness);
- 8s84** – identify the input, output, feedback, and stability of systems (e.g., stage lights);
- 8s85** – evaluate the effectiveness of energy transfer systems (e.g., compare the amount of heat given off by fluorescent and incandescent bulbs);
- 8s86** – recognize that energy can be a significant cost in the manufacture and use of products or systems and explain how that determines its production (e.g., analyse the costs and benefits of producing and using solar panels).

## Structures and Mechanisms

### Overall Expectations

- 8s87** • demonstrate an understanding of the factors that contribute to the efficient operation of mechanisms and systems;
- 8s88** • design and make systems of structures and mechanisms, and investigate the efficiency of the mechanical devices within them;
- 8s89** • demonstrate understanding of the factors that can affect the manufacturing of a product, including the needs of the consumer.

### Understanding Basic Concepts

- 8s90** – explain how forces are transferred in all directions in fluids (Pascal's law);
- 8s91** – describe in quantitative terms the relationship between force, area, and pressure;
- 8s92** – explain in qualitative terms the relationship between pressure, volume, and temperature when a liquid is compressed or heated and a gas (e.g., air) is compressed or heated;
- 8s93** – compare the effect of pressure on a liquid (e.g., on water in a syringe) with the effect of pressure on a gas (e.g., on air in a syringe);
- 8s94** – explain, using their observations, how the use of appropriate levers and ways of linking the components of fluid systems can improve the performance of the systems (e.g., systems in a steam shovel, in a robot);
- 8s95** – investigate and measure forces that affect the movement of an object (e.g., friction);
- 8s96** – distinguish between velocity and speed (i.e., define velocity as speed in a given direction);
- 8s97** – determine the velocity ratio of devices with pulleys and gears (i.e., divide the distance that a load moves by the distance covered by the force (effort) required to move it);
- 8s98** – predict the mechanical efficiency of using different mechanical systems (e.g., a winch).

## Developing Skills of Inquiry, Design and Communication

- 8s99** – formulate questions about and identify needs and problems related to the efficient operation of mechanical systems, and explore possible answers and solutions (e.g., test a device at each stage of its development and evaluate its performance in relation to specific criteria);
- 8s100** – plan investigations for some of these answers and solutions, identifying variables that need to be held constant to ensure a fair test and identifying criteria for assessing solutions;
- 8s101** – use appropriate vocabulary, including correct science and technology terminology, to communicate ideas, procedures, and results (e.g., use such technical terms as velocity, velocity ratio, and efficiency);
- 8s102** – compile qualitative and quantitative data gathered through investigation in order to record and present results, using diagrams, flow charts, frequency tables, graphs, and stem-and-leaf plots produced by hand or with a computer (e.g., produce and analyse a quotation to complete a job in the home);
- 8s103** – communicate the procedures and results of investigations for specific purposes and to specific audiences, using media works, written notes and descriptions, charts, graphs, drawings, and oral presentations (e.g., make a display in which they compare the ways in which a closed pneumatic system and a hydraulic system operate the same size of cylinder);
- 8s104** – design and make a mechanical system that is operated by hydraulic or pneumatic power;
- 8s105** – select and use appropriate materials and strategies to make a product;
- 8s106** – produce technical drawings and layout diagrams of a structure or a mechanical system that they are designing, using a variety of resources.

## Relating Science and Technology to the World Outside the School

- 8s107** – explain how human weight, height, age, sex, and physical capability affect the design of products (e.g., car seats, snowmobiles, zippers);
- 8s108** – analyse the use of symmetry in the ergonomic design of objects and systems (e.g., office furniture, computer equipment);
- 8s109** – describe how the components and subsystems of a product used by humans (e.g., a bicycle, a computer system) enable the product to function;
- 8s110** – identify the kinds of information that assist consumers in making a decision about buying a product (e.g., information on performance, durability, safety, benefits to health);
- 8s111** – identify consumer expectations regarding the function and effectiveness of a product, using information collected in a survey they made, and recognize that expectations may change;
- 8s112** – recognize the importance of unbiased testing of control samples and independent evaluation of the test results before a product is manufactured;
- 8s113** – identify the personal and societal factors that determine whether a product is used;
- 8s114** – evaluate product manuals or help screens (e.g., a manual for a video recorder), focusing on clarity, thoroughness, and general “user-friendliness”, and identify ways of making the product easier to use;
- 8s115** – assess the impact on the environment of the use and disposal of various products (e.g., motor oil, Freon);
- 8s116** – explain the economic, social, and environmental factors that can determine whether a product is manufactured (e.g., costs of materials and equipment, availability of skilled labour, potential harmfulness of the product);
- 8s117** – make informed judgements about products designed and made by others;
- 8s118** – evaluate their own designs against the original need, and propose modifications to improve the quality of the products.

## Earth and Space Systems

### Overall Expectations

- 8s119** • demonstrate an understanding of how the earth's water systems were formed, the similarities and differences among them, and how they influence the climate and weather of the region in which they are located;
- 8s120** • investigate the major features of the earth's water resources (e.g., oceans, rivers, lakes, glaciers, ice-caps, snowfall, clouds) and the effects of large bodies of water on global climate and ecosystems;
- 8s121** • examine how humans use resources from the earth's different water systems and identify the factors involved in managing these resources for sustainability.

### Understanding Basic Concepts

- 8s122** – identify the various states of water on the earth's surface and the conditions under which they exist (e.g., glaciers, snow on mountains, and polar ice-caps are solid states of water; oceans, lakes, rivers, and groundwater are liquid states of water; the atmosphere contains water in its gaseous state);
- 8s123** – describe the distribution and circulation of water on the earth (e.g., oceans, glaciers, rivers, groundwater, the atmosphere);
- 8s124** – compare the formation of geological features on the ocean floor (e.g., sea mounts, continental shelves, trenches) and the formation of lakes and rivers;
- 8s125** – compare the physical characteristics of salt water with those of fresh water (e.g., movement, density, buoyancy of objects in water);
- 8s126** – explain how salinity differs in bodies of fresh and salt water;
- 8s127** – describe wave formation and the effects of waves on coastal features (e.g., bays, rocky headlands, beaches);
- 8s128** – explain, using simulations or models, how certain geological features affect the height of tides (e.g., Bay of Fundy tides);
- 8s129** – describe, for their geographical area, the direction of water flow and its relationship to the Continental Divide (the watershed boundary for North America);
- 8s130** – investigate, through observation, the effects of changes in temperature on convection currents in water;
- 8s131** – investigate how large bodies of water affect the weather and climate of an area (e.g., lakes affect snow precipitation);
- 8s132** – describe factors that affect glaciers and polar ice-caps, and describe the effects of glaciers and polar ice-caps on the environment (e.g., annual precipitation, temperature);
- 8s133** – investigate, using simulations or models, the movement of ocean currents and their impact on regional climates (e.g., Gulf Stream, Labrador Current, Alaska Current).

### Developing Skills of Inquiry, Design and Communication

- 8s134** – formulate questions about and identify needs arising from events relating to the earth's water, and explore possible answers to these questions and ways of meeting these needs (e.g., search print and/or electronic resources for information and prepare a map showing the changes in world ice distribution patterns over several geological time periods; conduct research to explain why fossils of ocean fish are found in places geographically removed from present-day oceans);
- 8s135** – plan investigations for some of these answers and solutions, identifying variables that need to be held constant to ensure a fair test and identifying criteria for assessing solutions;

- 8s136** – use appropriate vocabulary, including correct science and technology terminology, to communicate ideas, procedures, and results (e.g., use terms such as salinity, currents, and basins when describing oceans and their characteristics);
- 8s137** – compile qualitative and quantitative data gathered through investigation in order to record and present results, using diagrams, flow charts, frequency tables, bar graphs, line graphs, and stem-and-leaf plots produced by hand or with a computer (e.g., record the results of a comparison of the density of various objects and of their buoyancy in fresh water and salt water);
- 8s138** – communicate the procedures and results of investigations for specific purposes and to specific audiences, using media works, written notes and descriptions, charts, graphs, drawings, and oral presentations (e.g., prepare a multimedia presentation on the effects of tides on Canadian shores; create a concept map linking the different stages of the water cycle).

## Relating Science and Technology to the World Outside the School

- 8s139** – evaluate human use of water and the economic and environmental effects of that use (e.g., filtration plants, tourism, industrial applications, control of water flow);
- 8s140** – explain the different stages involved in processing water for use by humans (e.g., obtaining water from its source, treatment, distribution, disposal);
- 8s141** – evaluate the positive and negative effects on the earth's water supply of the development of natural resources (e.g., use of oil rigs, pulp and paper mills);
- 8s142** – describe technological innovations that have facilitated and improved scientific research into oceans (e.g., sonar mapping, core sampling, satellite imaging, underwater photography and videography, tracking devices, submersibles);
- 8s143** – analyse factors that affect the productivity and distribution of animal species in marine and fresh water environments (e.g., water released from a nuclear power plant, oil spills);
- 8s144** – compare the diversity of living organisms in salt water with that in fresh water (e.g., construct marine and freshwater food webs and compare them);
- 8s145** – explain how the geological features of the ocean floor interact with ocean currents to influence the productivity of the oceans and affect marine life (e.g., Grand Banks);
- 8s146** – identify ways in which humans have tried to contain damage caused by water (e.g., flood control, dune vegetation, coastline reconfiguration);
- 8s147** – explain how changes in the water table (e.g., changes in the water level in wells) relate to the water cycle;
- 8s148** – discuss the technologies used to extract and secure oil and natural gas from the ocean floor and the possible economic and environmental costs and benefits.

## Confederation

### Overall Expectations

- 8h1** • describe the internal and external political factors, key personalities, significant events, and geographical realities that led to the creation of the Dominion of Canada in 1867, and to the growth of Canada as other provinces and territories joined Confederation;
- 8h2** • use a variety of resources and tools to gather, process, and communicate information about the needs and challenges that led to the formation and expansion of the Canadian federation;
- 8h3** • compare Canada as it was in 1867 to the Canada of today, including political, social, and other issues facing the country in both periods.

### Knowledge and Understanding

- 8h4** – identify key social, political, economic, and physical characteristics of the British North American colonies between 1850 and 1860 (e.g., British, French, First Nation, and Black communities);
- 8h5** – identify external and internal factors and events leading to Confederation (e.g., political deadlock, intercolonial trade, reciprocity, Britain's repeal of the Corn Laws, the Fenian raids, the U.S. doctrine of Manifest Destiny, transportation and defence issues);
- 8h6** – identify the roles of key individuals (e.g., Sir George-Étienne Cartier, Sir John A. Macdonald), the main events leading to the signing of the British North America Act (e.g., the Charlottetown, Quebec, and London Conferences; coalition government in the Canadas), and the reasons for the exclusion of certain groups from the political process (e.g., First Nation peoples, women, the Chinese and Japanese).

### Inquiry/Research and Communication Skills

- 8h7** – formulate questions to guide research on issues and problems (e.g., Why did Nova Scotia join Confederation in 1867 while Prince Edward Island did not? What qualities made Louis Riel a good leader?);
- 8h8** – use a variety of primary and secondary sources to locate relevant information about the regional interests of each colony/ province before and after joining the Dominion of Canada (e.g., primary sources: artefacts, journals, letters, statistics, field trips, period documents and maps; secondary sources: maps, illustrations, print materials, videos, CD-ROMs, Internet sites);
- 8h9** – describe and analyse conflicting points of view about a historical issue or personality (e.g., British versus Canadian points of view about trade and defence; Queen Victoria, Sir John A. Macdonald, Joseph Howe, Louis Riel);
- 8h10** – construct and use a wide variety of graphs, charts, diagrams, maps, and models to organize and interpret information (e.g., a decision-making chart showing the advantages and disadvantages of joining Confederation for each colony);
- 8h11** – analyse, synthesize, and evaluate historical information (e.g., determine the changes in Canada's boundaries in 1867, 1870, 1871, 1873, 1898, 1905, 1949, and 1999, using a series of maps);
- 8h12** – communicate the results of inquiries for specific purposes and audiences, using media works, political cartoons, oral presentations, written notes and descriptions, drawings, tables, charts, and graphs (e.g., create captions for political cartoons of the time);
- 8h13** – use appropriate vocabulary (e.g., *Confederation, conference, political deadlock, reciprocity, intercolonial trade, Corn Laws, Fenians, Manifest Destiny*) to describe their inquiries and observations.

## Application

- 8h14** – illustrate the growth of Canada, using outline maps or other tools, identifying the physical regions of Canada, the colonies that joined Confederation, and their boundaries and dates of entry (e.g., 1867 – Ontario, Quebec, New Brunswick, Nova Scotia; 1870 – Manitoba, as a province, and Northwest Territories, as a territory; 1871 – British Columbia; 1873 – Prince Edward Island; 1898 – Yukon, as a territory; 1905 – Alberta, Saskatchewan; 1949 – Newfoundland; 1999 – Nunavut, as a territory);
- 8h15** – use sections 91 and 92 of the British North America Act to outline how and why responsibilities are divided between the federal and provincial governments and relate these divisions to some present-day disagreements between the two levels of government (e.g., federal responsibilities for First Nation peoples, health care, the environment, trade, telecommunications).

## The Development of Western Canada

### Overall Expectations

- 8h16** • outline the main factors contributing to the settlement and development of the Prairie provinces, British Columbia, and Yukon, and describe the effects of development on various groups of people in the region from a variety of perspectives;
- 8h17** • use a variety of resources and tools to gather, process, and communicate information about conflicts and changes that occurred during the development of western Canada;
- 8h18** • show how the history of the Canadian west has influenced both artistic/imaginative works and Canadian institutions.

### Knowledge and Understanding

- 8h19** – describe the everyday life of various groups (e.g., First Nation peoples, Métis, Europeans) in western Canada in the late nineteenth century;
- 8h20** – explain the factors that led to the settlement of the Canadian west (e.g., federal government policy of opening up the prairies for European settlement, protective tariffs, railroad construction);
- 8h21** – analyse how treaties and the Indian Act of 1876 transformed the lifestyles of First Nation peoples in the Canadian west;
- 8h22** – describe the role of the Canadian Pacific Railway in furthering Canada's expansion, and identify the key individuals (e.g., Donald Smith, William Van Horne) and groups (e.g., Chinese workers) whose efforts led to the railway's completion;
- 8h23** – describe the causes and results of the Red River Rebellion of 1869-70 and the North-West Rebellion of 1885 and explain the role of key individuals and groups (e.g., Louis Riel, Gabriel Dumont, the North-West Mounted Police, Thomas Scott, Big Bear, Poundmaker, General Wolseley, Catherine Schubert);
- 8h24** – explain the effects of post-Confederation immigration, new wheat strains, and the Klondike gold rush on the expansion of western Canada and British Columbia (e.g., the development of prairie towns, the entry of the Yukon Territory into Confederation, the growth of Dawson City).

### Inquiry/Research and Communication Skills

- 8h25** – formulate questions to guide research on issues and problems (e.g., Why did Big Bear receive the treatment he did from Canada's legal system?);

- 8h26** – use a variety of primary and secondary sources to locate relevant information about the building of the railway, the settling of the land, and social and cultural life in the developing west (e.g., *primary sources*: photographs of Chinese labourers and prairie sodbusters, the poetry of Robert W. Service; *secondary sources*: maps, illustrations, print materials, videos, CD-ROMs, Internet sites);
- 8h27** – analyse, synthesize, and evaluate historical information (e.g., trends in immigration, the impact of Treaties 1 to 8);
- 8h28** – describe and analyse conflicting points of view about a historical event (e.g., the Pacific Scandal, the hanging of Louis Riel, the imprisonment of Big Bear);
- 8h29** – communicate the results of inquiries for specific purposes and audiences, using media works, political cartoons, oral presentations, written notes and reports, drawings, tables, charts, and graphs (e.g., create diary entries depicting Louis Riel as a hero or a traitor);
- 8h30** – use appropriate vocabulary (e.g., *treaties, Métis, Rupert’s Land, provisional government, prospector, panning for gold, staking a claim*) to describe their inquiries and observations.

### Application

- 8h31** – compare the image and duties of the North-West Mounted Police to the image and duties of the Royal Canadian Mounted Police today;
- 8h32** – show how examples of art, poetry, music, and video reflect the history of the Canadian west (e.g., the art of Emily Carr, “The Cremation of Sam McGee” by Robert W. Service, “The Canadian Railroad Trilogy” by Gordon Lightfoot, Paul Yee’s writings).

## Canada: A Changing Society

### Overall Expectations

- 8h33** • describe key characteristics of Canada between 1885 and 1914, including social and economic conditions, the roles and contributions of various people and groups, internal and external pressures for change, and the political responses to these pressures;
- 8h34** • use a variety of resources and tools to gather, process, and communicate information about the factors that shaped Canada as it was entering the twentieth century;
- 8h35** • compare living and working conditions, technological developments, and social roles near the beginning of the twentieth century with similar aspects of life in present-day Canada.

### Knowledge and Understanding

- 8h36** – describe the factors contributing to change in Canadian society (e.g., immigration, technology, politics, globalization);
- 8h37** – describe the achievements of individuals and groups in Canada who have contributed significantly to the technological development of Canada and the world (e.g., Martha Black, Guglielmo Marconi, Alexander Graham Bell, J.A.D. McCurdy, Samuel McLaughlin, George Ross, Adam Beck) and analyse the impact on society of new technologies (e.g., prospecting, radio, the telephone, the automobile, electricity);
- 8h38** – describe the social and working conditions of Canadians around the beginning of the twentieth century (e.g., in mining, forestry, factory work; on farms; in cities);
- 8h39** – describe how specific individuals and events helped change the position of women and children in Canada (e.g., Nellie McClung, Emily Carr, Lucy Maud Montgomery, Pauline Johnson; the Temperance Movement, laws establishing compulsory education);

- 8h40 – outline the advantages and disadvantages of Clifford Sifton’s immigration policy in the Laurier era;
- 8h41 – identify and explain the factors that led to Laurier’s electoral defeat in 1911 (e.g., the reciprocity issue, political compromise, French-English tensions);
- 8h42 – identify key events that illustrate Canada’s role within the British Empire and explain their significance (e.g., the Boer War, the Naval Question, Canada’s participation in Imperial conferences);
- 8h43 – describe the treaties, alliances, events, and people that contributed to the start of the First World War, and explain their relevance to Canada.

## **Inquiry/Research and Communication Skills**

- 8h44 – formulate questions to facilitate research on particular topics (e.g., Why did Canadians support Laurier’s leadership for fifteen years? Who started the First World War?);
- 8h45 – use a variety of primary and secondary sources to locate relevant information (e.g., *primary sources*: immigration posters, photographs of working conditions, journals and diaries; *secondary sources*: print materials, videos, CD-ROMs, Internet sites);
- 8h46 – analyse, synthesize, and evaluate historical information (e.g., immigration tables, population growth tables);
- 8h47 – describe and analyse conflicting points of view about a historical issue (e.g., child labour, the Boer War, the causes of the First World War);
- 8h48 – communicate the results of inquiries for specific purposes and audiences, using media works, political cartoons, oral presentations, written notes and reports, drawings, tables, charts, and graphs (e.g., prepare a report on a selected topic and individual);
- 8h49 – use appropriate vocabulary (e.g., *advocate, movement, temperance, reciprocity, entrepreneurs, multiculturalism, alliance, entente*) to describe their inquiries and observations.

## **Application**

- 8h50 – create an immigration campaign to attract immigrants to Canada around the beginning of the twentieth century and today, using media appropriate to the period (e.g., poster, pamphlet);
- 8h51 – compare the challenges facing farmers and workers at the beginning of the twentieth century to those facing farmers and workers today;
- 8h52 – compare family roles at the beginning of the twentieth century to family roles today (e.g., responsibilities and roles of men, women, and children).

## Patterns in Human Geography

### Overall Expectations

- 8g1** • identify the main patterns of human settlement and identify the factors that influence population distribution and land use;
- 8g2** • use a variety of geographic representations, resources, tools, and technologies to gather, process, and communicate geographic information about patterns in human geography;
- 8g3** • compare living and working conditions in countries with different patterns of settlement, and examine how demographic factors could affect their own lives in the future.

### Knowledge and Understanding

- 8g4** – identify the three main patterns of human settlement – linear, scattered, and clustered;
- 8g5** – identify and explain the factors affecting population distribution (e.g., history, natural environment, technological development, immigration trends/patterns);
- 8g6** – compare the characteristics of places with high and low population densities;
- 8g7** – explain how site and situation influence settlement patterns;
- 8g8** – identify and describe the types of land use (e.g., residential, recreational, institutional, commercial, industrial, agricultural; for transportation, communication, utilities; public space);
- 8g9** – summarize the factors that affect patterns of urbanization, industrialization, and transportation.

### Inquiry/Research and Communication Skills

- 8g10** – formulate questions to guide and synthesize research on the study of population characteristics and patterns (e.g., What conditions are needed to maintain a high quality of life? What is the relationship between literacy rate and GNP? What action can students take to aid a developing nation?);
- 8g11** – locate relevant information from a variety of primary and secondary sources (e.g., *primary sources*: interviews, field studies, surveys; *secondary sources*: statistics, maps, diagrams, illustrations, print materials, videos, CD-ROMs, Internet sites);
- 8g12** – communicate the results of inquiries for specific purposes and audiences using computer slide shows, videos, websites, oral presentations, written notes and reports, illustrations, tables, charts, maps, models, and graphs (e.g., create graphs to compare factors affecting quality of life; create an illustrated brochure outlining positive features of a developing nation; map the ten highest and lowest countries on the Human Development Index; interpret population pyramids to predict population trends in other countries);
- 8g13** – use appropriate vocabulary (e.g., *site, situation, rural, developed, developing, urbanization, population density, population distribution, gross domestic product [GDP], gross national product [GNP], correlation, birth and death rates, literacy rate, life expectancy*) to describe their inquiries and observations.

### Map, Globe, and Graphic Skills \*

- 8g14** – create and use a variety of maps for specific purposes (e.g., to show land use, transportation routes, population distribution, popular tourist destinations);
- 8g15** – produce and interpret simple scatter graphs to determine the correlation between population characteristics;
- 8g16** – construct and examine population pyramids to make predictions about future trends in population characteristics.

### Application

- 8g17** – compare key characteristics (e.g., quality of life, level of industrialization and urbanization) of a number of developed and developing countries;

- 8g18** – research job trends and predict the skills that will be needed to meet the challenges of Canada’s changing demographics.

## Economic Systems

### Overall Expectations

- 8g19** • describe the characteristics of different types of economic systems and the factors that influence them, including economic relationships and levels of industrial development;
- 8g20** • use a variety of geographic representations, resources, tools, and technologies to gather, process, and communicate geographic information about regional, national, and international economic systems;
- 8g21** • compare the economies of different communities, regions, or countries, including the influence of factors such as industries, access to resources, and access to markets.

### Knowledge and Understanding

- 8g22** – outline the fundamental questions that all economic systems must answer: what goods are produced; how they are produced; for whom they are produced; by whom they are produced; and how they are distributed;
- 8g23** – describe the characteristics of different types of economic systems (e.g., traditional, command, market) and explain why most countries, including Canada, have a mixed economy that includes features from more than one system;
- 8g24** – explain how the availability of particular economic resources (e.g., quantity and quality of land, labour, capital, entrepreneurial ability) influences the economic success of a region;
- 8g25** – identify and give examples of the three major types of industries – primary (resource), secondary (manufacturing), and tertiary (service) – and describe how these industries have developed in Canada.

### Inquiry/Research and Communication Skills

- 8g26** – formulate questions to guide and analyse research on economic influences and relationships (e.g., Where would be the best place to start a new logging industry in Canada? How have the types of industries in Canada changed since the nineteenth century? How has technology changed a specific industry?);
- 8g27** – locate relevant information from a variety of primary and secondary sources (e.g., *primary sources*: statistics, interviews, published field studies, a field trip to a local industry; *secondary sources*: maps, illustrations, print materials, videos, CD-ROMs, Internet sites);
- 8g28** – communicate the results of inquiries for specific purposes and audiences, using computer slide shows, videos, websites, oral presentations, written notes and reports, illustrations, tables, charts, maps, models, and graphs (e.g., use a brief dramatization to explain an industry to the class; produce a map showing the locations of natural resources and raw materials needed by an industry);
- 8g29** – use appropriate vocabulary (e.g., *economy; traditional, command, market, and mixed economies; supply and demand; production; goods; services; consumer; market; distribution; imports; exports; land; entrepreneurial; capital; primary, secondary, and tertiary industries*) to describe their inquiries and observations.

### Map, Globe, and Graphic Skills \*

- 8g30** – use thematic maps to identify economic patterns (e.g., the location of industries in relation to sources of raw materials, markets, and transportation; the proportional flow of trade between countries; sources of labour).

## Application

- 8g31 – compare the economies of some top trading nations and explain the reasons for their success, taking into account factors such as industries, access to resources, and access to markets;
- 8g32 – investigate and explain the advantages and disadvantages of Canada's involvement in major trade associations/agreements (e.g., North American Free Trade Agreement [NAFTA], World Trade Organization [WTO]);
- 8g33 – investigate and describe how a new or existing industry affects the economy of a region.

## Migration

### Overall Expectations

- 8g34 • identify factors that affect migration and mobility, describe patterns and trends of migration in Canada, and identify the effects of migration on Canadian society;
- 8g35 • use a variety of geographic representations, resources, tools, and technologies to gather, process, and communicate geographic information about migration and its effects on people and communities;
- 8g36 • connect the real experiences of Canadians to information about the causes and effects of migration.

### Knowledge and Understanding

- 8g37 – identify the push and pull factors that influence people to move (e.g., *push*: drought, war, lack of freedom, discrimination and persecution; *pull*: employment opportunities, security, climate);
- 8g38 – identify barriers to migration (e.g., physical, financial, legal, political, emotional);
- 8g39 – describe how technology has improved human mobility;
- 8g40 – explain how the components of culture (e.g., language, social organization, educational systems, beliefs and customs) can be affected by migration;
- 8g41 – describe the effects that migration has had on the development of Canada (e.g., its multicultural character, rural and urban resettlement, interprovincial movement, the brain drain).

### Inquiry/Research and Communication Skills

- 8g42 – formulate questions to guide and analyse research on migration and mobility (e.g., What barriers exist today for new immigrants? In which time period would it be harder for people to immigrate to Canada – now or a hundred years ago? Where would be the best place to migrate to in Canada?);
- 8g43 – locate relevant information from a variety of primary and secondary sources (e.g., *primary sources*: surveys, statistics, interviews, field studies; *secondary sources*: maps, illustrations, print materials, videos, CD-ROMs, Internet sites);
- 8g44 – communicate the results of inquiries for specific purposes and audiences, using computer slide shows, videos, websites, oral presentations, written notes and reports, illustrations, tables, charts, maps, models, and graphs (e.g., write a story/journal relating the difficulties faced by past or present immigrants; create a slide show to show how technological changes have affected mobility; create a video presentation encouraging immigrants to come and live in Canada);
- 8g45 – use appropriate vocabulary (e.g., *accessible, barriers, migration, mobility, immigration, emigration, refugees, modes of transportation, push factors, pull factors*) to describe their inquiries and observations.

### Map, Globe, and Graphic Skills \*

- 8g46 – use thematic maps to identify patterns in migration (e.g., location of regions that were sources of significant immigration to Canada, proportional flow along migrational routes to Canada).

### Application

- 8g47** – use a decision-making model to select an ideal place to live, and present this decision to other members of the class;
- 8g48** – investigate the migrational roots of the members of the class and relate them to Canada's cultural development.

## Healthy Living

### Overall Expectations

- 8p1** • adopt personal goals that reflect healthy eating practices;
- 8p2** • identify the physical, emotional, interpersonal, and spiritual aspects of healthy sexuality (e.g., respect for life, ethical questions in relationships, contraception);
- 8p3** • identify local support groups and community organizations (e.g., public health offices) that provide information or services related to health and well-being;
- 8p4** • analyse situations that are potentially dangerous to personal safety (e.g., gang violence) and determine how to seek assistance;
- 8p5** • apply living skills (e.g., decision-making, problem-solving, and refusal skills) to respond to matters related to sexuality, drug use, and healthy eating habits.

### Healthy Eating

- 8p6** – analyse the effects of undereating (e.g., as a result of bulimia or sports dieting) and overeating (e.g., obesity) on health and well-being;
- 8p7** – identify ways to maintain a healthy body weight (e.g., physical activity);
- 8p8** – adopt personal food plans, based on nutritional needs and personal goals, to improve or maintain their eating practices

### Growth and Development

- 8p9** – explain the importance of abstinence as a positive choice for adolescents;
- 8p10** – identify symptoms, methods of transmission, prevention, and high-risk behaviours related to common STDs, HIV, and AIDS;
- 8p11** – identify methods used to prevent pregnancy;
- 8p12** – apply living skills (e.g., decision-making, assertiveness, and refusal skills) in making informed decisions, and analyse the consequences of engaging in sexual activities and using drugs;
- 8p13** – identify sources of support (e.g., parents/ guardians, doctors) related to healthy sexuality issues;

### Personal Safety / Injury Prevention

- 8p14** – analyse situations (e.g., hitchhiking, gang violence, violence in relationships) that are potentially dangerous to personal safety;
- 8p15** – identify support services (e.g., the school guidance department, shelters, Kids' Help Phone) that assist victims of violence, and explain how to access them;

### Substance Use / Abuse

- 8p16** – outline the possible negative consequences of substance use and abuse (e.g., fetal alcohol syndrome, effects of steroid use, accidents when drinking and driving);
- 8p17** – identify those school and community resources that are involved in education about substance use and abuse, and those involved in preventing and treating substance abuse;
- 8p18** – describe causes and symptoms of stress and positive ways (as opposed to substance use) to relieve stress;
- 8p19** – apply the steps of a decision-making process to address age-specific situations related to personal health and well-being in which substance use or abuse is one of the factors.

## Fundamental Movement Skills

### Overall Expectations

- 8p20** • apply a variety of movement skills in combination and in sequence (locomotion/travelling, manipulation, and stability) in physical activities (e.g., dance) and formal games (e.g., badminton, soccer);
- 8p21** • apply the principles of movement while refining movement skills (e.g., dribbling a ball quickly and slowly in basketball).

## Locomotion / Travelling Skills

- 8p22** – apply locomotion/travelling, manipulation, and stability skills in combination and in sequence in specific physical activities (e.g., in volleyball: moving into a ready position to contact the ball);

## Manipulation Skills

- 8p23** – throw, pass, or shoot an object (e.g., a ball) to a partner or a target while being defended;
- 8p24** – shoot an object at a target (e.g., a basket or a goal) for distance and accuracy;
- 8p25** – hit an object (e.g., a ball or badminton bird) using the hand or a piece of equipment, using backhand and forehand motions;
- 8p26** – dribble a ball, using the dominant hand or foot, in different directions and at different speeds, while being defended;
- 8p27** – perform movement skills in sequence (e.g., shoot or pass a ball from a dribble);

## Stability Skills

- 8p28** – balance in control while moving on and off equipment (e.g., step aerobics);
- 8p29** – perform rolls and balances in sequence (e.g., consecutive straddle rolls to a front support balance);
- 8p30** – perform rotations on equipment (e.g., front roll on a bench).

## Active Participation

### Overall Expectations

- 8p31** • participate on a regular basis in physical activities that maintain or improve physical fitness (e.g., aerobics to music);
- 8p32** • apply living skills (e.g., basic problem-solving, decision-making, goal-setting, and conflict-resolution techniques) in physical activities (e.g., games, gymnastics, dance, outdoor pursuits);
- 8p33** • transfer appropriate interpersonal skills (e.g., exhibiting etiquette, fair play, co-operation, and respectful behaviour) to new physical activities;
- 8p34** • follow safety procedures related to physical activity, equipment, and facilities, and continue to take responsibility for personal safety.

### Physical Activity

- 8p35** – participate vigorously in all aspects of the program (e.g., indoor soccer, cricket);
- 8p36** – apply the factors that motivate their daily activities (e.g., health benefits, interpersonal interaction) to positively influence others (e.g., family, friends, members of the community) to become physically active;

### Physical Fitness

- 8p37** – improve or maintain their personal fitness levels by participating in sustained moderate to vigorous fitness activity for a minimum of twenty minutes each day, including appropriate warm-up and cool-down procedures;
- 8p38** – assess their personal levels of physical fitness on an ongoing basis comparing to past performances, and apply the information to their short- and long-term goals;

### Living Skills

- 8p39** – apply a goal-setting process (e.g., set a realistic goal, identify and address barriers, prepare an action plan, determine and access sources of support, and identify how to know when the goal has been reached) to short- and long-term goals related to physical activity or fitness;
- 8p40** – demonstrate respectful behaviour towards the feelings and ideas of others;
- 8p41** – follow the rules of fair play and sports etiquette in games and activities (e.g., maintaining self-control whether winning or losing).

## Music

### Overall Expectations

- 8a1** • demonstrate an understanding of the basic elements of music specified for this grade (see below) through listening to, performing, and creating music;
- 8a2** • sing and play instruments with expression and proper technique (e.g., with correct breathing or fingering);
- 8a3** • use correctly the musical terminology associated with the specific expectations for this grade;
- 8a4** • read, write, and perform from musical notation accurately and fluently;
- 8a5** • communicate their understanding and knowledge of music in appropriate ways (e.g., compare the characteristics of music of different historical periods; represent their response to music through painting);
- 8a6** • identify and perform music of a variety of cultures and historical periods.

### Knowledge of Elements

- 8a7** – read music appropriate for this grade, showing their understanding of the necessary aspects of notation (e.g., clefs, key signatures);
- 8a8** – identify and perform the major scale in keys that they encounter in the music they sing or play;
- 8a9** – demonstrate the ability to produce the same pitch as others, vocally or instrumentally (e.g., in pairs, in sections, in a large group);
- 8a10** – identify metres and the corresponding time signatures in the pieces they play or sing;
- 8a11** – play or sing music with appropriate articulation and phrasing;
- 8a12** – conduct 2/4, 3/4, and 4/4 time, or a metre in a piece appropriate for their grade, correctly using standard conducting patterns (e.g., indications of upbeats, downbeats, and entries);
- 8a13** – demonstrate understanding of the markings and Italian terms for dynamics, tempo, articulation, and phrasing in the music they play or sing;
- 8a14** – explain the meaning of D.C. al coda, d.s. al fine, and d.s. al coda;
- 8a15** – identify the type of texture in music appropriate for the grade;
- 8a16** – recognize rondo form (ABACA) and theme-and-variations form (A, A1, A2, etc.) in music they perform and hear.

### Creative Work

- 8a17** – sing or play expressively pieces in various styles;
- 8a18** – create musical compositions that make use of elements of music studied in this grade, write them in standard notation, and perform them;
- 8a19** – create and perform a short musical that consists of contrasting songs, dialogue, and drama;
- 8a20** – improvise a solo melodic line (accompanied or unaccompanied).

### Critical Thinking

- 8a21** – recognize and describe the difference between program music (e.g., The Moldau by Smetana) and absolute music (e.g., Symphony No. 40 in G Minor by Mozart);
- 8a22** – describe some aspects of the historical context of music that they sing, play, or listen to (e.g., identify some major political events, social or philosophical movements, architectural or painting styles);
- 8a23** – communicate their thoughts and feelings about the music they hear, using language and a variety of art forms and media (e.g., videotape, improvisation, watercolour paintings);
- 8a24** – describe their response to a musical performance in their community.

## Visual Arts

## Overall Expectations

- 8a25** • produce two- and three-dimensional works of art that communicate a variety of ideas (thoughts, feelings, experiences) for specific purposes and to specific audiences, using a variety of art forms;
- 8a26** • define the principles of design (emphasis, balance, rhythm, unity, variety, proportion), and use them in ways appropriate for this grade when producing and responding to works of art;
- 8a27** • explain how an artist has used the expressive qualities of the elements and principles of design to affect the viewer, and support their analyses with evidence from the work;
- 8a28** • use correctly vocabulary and art terminology associated with the specific expectations for this grade.

## Knowledge of Elements

- 8a29** – describe how the repetition of elements of design creates rhythm, which unifies the composition (e.g., the diagonal lines in the trees are repeated in the horses and jockeys, and this repetition helps to link the foreground and the background);
- 8a30** – describe how the elements of design are used to create the area of emphasis (focal point) in a work of art (e.g., contrasts in colour, line, shape, or texture can serve to emphasize specific aspects of the work);
- 8a31** – describe how the elements of design are used to create formal (symmetrical) and informal (asymmetrical) balance in compositions;
- 8a32** – explain how the size, scope, and intent of a work determine which tools, materials, and techniques the artist will use (e.g., liquid tempera, large brushes, and mural paper for making a mural);
- 8a33** – use tools, materials, and techniques correctly, selecting those that are appropriate for the size, scope, and intent of the work.

## Creative Work

- 8a34** – organize their art works to create a specific effect, using at least two of the principles of design specified for this grade (e.g., create a work of art using rhythm and emphasis to communicate a particular mood);
- 8a35** – produce two- and three-dimensional works of art (i.e., works involving media and techniques used in drawing, painting, sculpting, printmaking) that communicate a range of thoughts, feelings, and experiences for specific purposes and to specific audiences (e.g., create an illustration for a children’s book, using pen and ink and watercolour washes);
- 8a36** – describe, in their plan for a work of art, the main idea they wish to communicate and the artistic decisions they have made to support that message;
- 8a37** – identify strengths and areas for improvement in their own work and that of others, and describe possible strategies for improving their work.

## Critical Thinking

- 8a38** – describe how artists representing various periods, styles, and cultures have used similar materials, tools, and the principles of design for a variety of purposes (e.g., the use of design principles in textiles like raffia cloth from Zaire, gowns from the Mandingos of West Africa, and embroidered dresses from Palestine), and recognize that many modern artists and designers (e.g., textile designers) are influenced by designs from other periods and cultures;
- 8a39** – explain how the effective use of the elements and principles of design contributes to an art work’s ability to communicate feelings, convey ideas, and enrich people’s lives (e.g., the effective use of formal balance in the design of a building can enable people to feel a sense of order and harmony when looking at or being in that building);

- 8a40** – explain their preference for specific art works, with reference to the artist’s use of the principles of design and their understanding of the ideas and feelings expressed in the work (e.g., Colville’s use of sombre colours and informal balance in *Horse and Train* conveys a strong sense of impending disaster).

## Drama & Dance

### Overall Expectations

- 8a41** • evaluate the overall effect of various aspects of drama and dance (i.e., elements, principles, techniques, style);
- 8a42** • interpret and communicate ideas and feelings drawn from fictional accounts, documentaries, and other material from a wide variety of sources and cultures, selecting and combining complex drama and dance techniques (e.g., “forum theatre”);
- 8a43** • create drama pieces, selecting and using a variety of techniques;
- 8a44** • critique, orally and in writing, their own and others’ work in drama and dance, using criteria developed independently and in a group;
- 8a45** • critique solutions to problems presented in drama and dance, make decisions in large and small groups, and defend their artistic choices;
- 8a46** • create different multimedia interpretations of a single work, using available technology to enhance their work in drama and dance performances.

### Knowledge of Elements

- 8a47** – demonstrate understanding of the appropriate use of the voice, gestures, and the level of language in different dramatic situations;
- 8a48** – describe theatrical dance performances, and distinguish between the types or styles used (e.g., ballet, modern, jazz, folk, ethnic);
- 8a49** – write in role in various forms (e.g., monologues, speeches, radio or television broadcasts), showing understanding of the complexity of a dramatic situation and using appropriate vocabulary, tone, and voice for the character portrayed;
- 8a50** – use the vocabulary of drama and dance correctly (e.g., metaphor in drama, symmetry in dance composition) in analysing, explaining, and critiquing the meaning and effect of their own and others’ work;
- 8a51** – identify ways of sustaining concentration in drama and dance (e.g., focusing on the character’s motives in order to stay in role);
- 8a52** – identify and evaluate the variety of choices made in drama and dance that influence groups to make different interpretations or representations of the same materials;
- 8a53** – choose technology for enhancing their drama and dance work, and evaluate the effectiveness of their choice (e.g., camcorders, lighting dimmers).

### Creative Work

- 8a54** – write in role, analysing the subtext of a script and the attitudes and points of view of the characters portrayed;
- 8a55** – write, memorize, and present, through drama and dance, short documentary scenes based on their improvisational work and on source material drawn from diverse cultures;
- 8a56** – create dance compositions based on material explored in drama;
- 8a57** – create a dance warm-up program, alone or with another student;
- 8a58** – select appropriate themes that deal with specific situations and that are aimed at a specific audience;
- 8a59** – organize and carry out a group improvisation;
- 8a60** – produce pieces that deal appropriately with youth problems (e.g., pieces created through forum theatre);
- 8a61** – produce work as a member of an ensemble.

## Critical Thinking

- 8a62** – review drama and dance performances, orally or in writing, critiquing the use of elements and techniques in the particular genre of the piece;
- 8a63** – evaluate the overall effect of a performance in drama and dance, analysing the key elements;
- 8a64** – identify and discuss the qualities and skills needed to create and perform productions in drama and dance;
- 8a65** – produce pieces of writing in which they reflect on their experiences in drama and dance, and in which they show their ability to analyse and find solutions to problems in real life;
- 8a66** – dramatize material that they have researched from primary sources (e.g., historical documents), and use it effectively in presenting documentary scenes.