

The Ontario Curriculum

Expectations for Grade 5

Parents' Guide



Durham District
School Board

GRADE 5

Dear Parents and Guardians:

At the Durham District School Board we believe that parents and guardians are partners in learning and we value involvement in your children's education. To support you, and in turn our students, we have prepared this clear and concise version of the curriculum expectations. This publication offers you a complete guide to the new Ontario Curriculum's learning expectations for Grade One.

The curriculum implemented in Durham District School Board schools includes general and specific expectations of knowledge and skills required of students in Grade One through to Grade Eight. There are eight separate publications, covering the expectations for each grade. By being familiar with the curriculum expectations, you can see what your child is learning in each grade and work with teachers to improve your child's academic success.

We also welcome you in our schools and encourage you to participate in parent-teacher conferences and school events, and to be active on school councils. Most of all, we urge you to provide your children with encouragement and support to be successful in school.

It is our hope that you will find the grade-by-grade curriculum guides helpful. Parents can also find further information on the Board's Website, www.durham.edu.on.ca in the "Parents" menu.

If you have questions or if you would like to discuss the curriculum expectations, we encourage you to contact your child's teacher or the school principal. Together, we can work in cooperation to ensure student success.

Sincerely,

A handwritten signature in black ink, appearing to read 'Martyn Beckett'.

*Martyn Beckett
Director of Education*

▶ These curriculum expectations have been taken directly from the **Ontario Curriculum, Grades 1-8**; as of **June 2010**, published by the Ministry of Education. The expectations are separated by grade to offer parents easy access to this information.

▶ The achievement charts identify four categories of knowledge and skills. The achievement chart is a standard province-wide guide to be used by teachers to guide the development of assessment tasks and tools, help teachers to plan instruction and assist in providing meaningful feedback to students. Level 3 is the provincial standard.

Oral Communication: Grade 5

The Importance of Literacy and Language

Language development is central to students' intellectual, social, and emotional growth, and must be seen as a key element of the curriculum. When students learn to use language in the elementary grades, they do more than master the basic skills. They learn to value the power of language and to use it responsibly. They learn to express feelings and opinions and, as they mature, to support their opinions with sound arguments and research. They become aware of the many purposes for which language is used and the diverse forms it can take to appropriately serve particular purposes and audiences.

They develop an awareness of how language is used in different formal and informal situations. In sum, they come to appreciate language both as an important medium for communicating ideas and information and as a source of enjoyment.

The expectations for Grades 4 to 6 focus on students' ability to use their knowledge and skills in listening, speaking, reading, writing, viewing, and representing to understand, critically analyse, and communicate a broad range of information and ideas from and about their multicultural, multimedia environment.

Getting Involved

- ✓ Establish a family time when everyone engages in reading, writing or drawing.
- ✓ Encourage your child to use a word processor when possible.

Overall Expectations

By the end of Grade 5, students will:

- ▶ listen in order to understand and respond appropriately in a variety of situations for a variety of purposes

Specific Expectations

By the end of Grade 5, students will:

Listen to Understand

Purpose

- identify a range of purposes for listening in a variety of situations, formal and informal, and set goals related to specific listening tasks

Active Listening Strategies

- demonstrate an understanding of appropriate listening behaviour by adapting active listening strategies to suit a range of situations, including work in groups

Comprehension Strategies

- identify a variety of listening comprehension strategies and use them appropriately before, during, and after listening in order to understand and clarify the meaning of oral texts

Demonstrating Understanding

- demonstrate an understanding of the information and ideas in oral texts by summarizing important ideas and citing a variety of supporting details

Making Inferences/Interpreting Texts

- make inferences about oral texts using stated and implied ideas in the texts as evidence

Extending Understanding

- extend understanding of oral texts by connecting the ideas in them to their own knowledge, experience, and insights; to other texts, including print and visual texts; and to the world around them

Analysing Texts

- analyse oral texts and explain how specific elements in them contribute to meaning

Point of View

- identify the point of view presented in oral texts and ask questions to identify missing or possible alternative points of view

Presentation Strategies

- identify a range of presentation strategies used in oral texts and analyse their effect on the audience

Overall Expectations

By the end of Grade 5, students will:

- ▶ use speaking skills and strategies appropriately to communicate with different audiences for a variety of purposes

Specific Expectations

By the end of Grade 5, students will:

Speak to Communicate

Purpose

- identify a variety of purposes for speaking

Interactive Strategies

- demonstrate an understanding of appropriate speaking behaviour in a variety of situations, including paired sharing, dialogue, and small- and large group discussions

Clarity and Coherence

- communicate orally in a clear, coherent manner, presenting ideas, opinions, and information in a readily understandable form

Appropriate Language

- use appropriate words and phrases from the full range of their vocabulary, including inclusive and non-discriminatory language, and stylistic devices suited to the purpose, to communicate their meaning accurately and engage the interest of their audience

Vocal Skills and Strategies

- identify some vocal effects, including tone, pace, pitch, volume, and a variety of sound effects, and use them appropriately and with sensitivity towards cultural differences to help communicate their meaning

Non-Verbal Cues

- identify a variety of non-verbal cues, including facial expression, gestures, and eye contact, and use them in oral communications, appropriately and with sensitivity towards cultural differences, to help convey their meaning

Visual Aids

- use a variety of appropriate visual aids

Overall Expectations

By the end of Grade 5, students will:

- ▶ reflect on and identify their strengths as listeners and speakers, areas for improvement, and the strategies they found most helpful in oral communication situations

Specific Expectations

By the end of Grade 5, students will:

Reflect on Oral Communication Skills and Strategies

Metacognition

- identify, in conversation with the teacher and peers, what strategies they found most helpful before, during, and after listening and speaking and what steps they can take to improve their oral communication skills

Interconnected Skills

- identify, in conversation with the teacher and peers, how their skills as viewers, representers, readers, and writers help them improve their oral communication skills

Reading: Grade 5

Overall Expectations

By the end of Grade 5, students will:

- ▶ read and demonstrate an understanding of a variety of literary, graphic, and informational texts, using a range of strategies to construct meaning

Specific Expectations

By the end of Grade 5, students will:

Read for Meaning

Variety of Texts

- read a variety of texts from diverse cultures, including literary texts

Purpose

- identify a variety of purposes for reading and choose reading materials appropriate for those purposes

Comprehension Strategies

- identify a variety of reading comprehension strategies and use them appropriately before, during, and after reading to understand texts

Demonstrating Understanding

- demonstrate understanding of a variety of texts by summarizing important ideas and citing supporting details

Making Inferences/Interpreting Texts

- use stated and implied ideas in texts to make inferences and construct meaning

Extending Understanding

- extend understanding of texts by connecting the ideas in them to their own knowledge, experience, and insights, to other familiar texts, and to the world around them

Analysing Texts

- analyse texts and explain how various elements in them contribute to meaning

Responding to and Evaluating Texts

- make judgements and draw conclusions about the ideas and information in texts and cite stated or implied evidence from the text to support their views

Point of View

- identify the point of view presented in texts, ask questions to identify missing or possible alternative points of view, and suggest some possible alternative perspectives

Overall Expectations

By the end of Grade 5, students will:

- ▶ recognize a variety of text forms, text features, and stylistic elements and demonstrate understanding of how they help communicate meaning

Specific Expectations

By the end of Grade 5, students will:

Understand Form and Style

Text Forms

- analyse a variety of text forms and explain how their particular characteristics help communicate meaning, with a focus on literary texts such as short stories, graphic texts such as a logo, and informational texts such as a movie review

Text Patterns

- identify a variety of organizational patterns in a range of texts and explain how they help readers understand the texts

Text Features

- identify a variety of text features and explain how they help readers understand texts

Elements of Style

- identify various elements of style – including word choice and the use of similes, personification, comparative adjectives, and sentences of different types, lengths, and structures – and explain how they help communicate meaning

Overall Expectations

By the end of Grade 5, students will:

- ▶ use knowledge of words and cueing systems to read fluently

Specific Expectations

By the end of Grade 5, students will:

Read With Fluency

Reading Familiar Words

- automatically read and understand most words in common use

Reading Unfamiliar Words

- predict the meaning of and rapidly solve unfamiliar words using different types of cues, including:
 - semantic (meaning) cues
 - syntactic (language structure) cues
 - graphophonic (phonological and graphic) cues

Reading Fluently

- read appropriate texts with expression and confidence, adjusting reading strategies and reading rate to match the form and purpose

Overall Expectations

By the end of Grade 5, students will:

- ▶ reflect on and identify their strengths as readers, areas for improvement, and the strategies they found most helpful before, during, and after reading

Specific Expectations

By the end of Grade 5, students will:

Reflect on Reading Skills and Strategies

Metacognition

- identify the strategies they found most helpful before, during, and after reading and explain, in conversation with the teacher and/or peers or in a reader's notebook, how they can use these and other strategies to improve as readers

Interconnected Skills

- explain, in conversations with peers and/or the teacher or in a reader's notebook, how their skills in listening, speaking, writing, viewing, and representing help them make sense of what they read

Writing: Grade 5

Overall Expectations

By the end of Grade 5, students will:

- ▶ generate, gather, and organize ideas and information to write for an intended purpose and audience

Specific Expectations

By the end of Grade 5, students will:

Develop and Organize Content

Purpose and Audience

- identify the topic, purpose, and audience for a variety of writing forms

Developing Ideas

- generate ideas about a potential topic and identify those most appropriate for the purpose

Research

- gather information to support ideas for writing, using a variety of strategies and a range of print and electronic resources

Classifying Ideas

- sort and classify ideas and information for their writing in a variety of ways

Organizing Ideas

- identify and order main ideas and supporting details and group them into units that could be used to develop several linked paragraphs, using a variety of strategies

Review

- determine whether the ideas and information they have gathered are relevant, appropriate, and adequate for the purpose, and do more research if necessary

Overall Expectations

By the end of Grade 5, students will:

- ▶ draft and revise their writing, using a variety of informational, literary, and graphic forms and stylistic elements appropriate for the purpose and audience

Specific Expectations

By the end of Grade 5, students will:

Use Knowledge of Form and Style in Writing

Form

- write longer and more complex texts using a variety of forms

Voice

- establish an appropriate voice in their writing, with a focus on modifying language and tone to suit different circumstances or audiences

Word Choice

- use some vivid and/or figurative language and innovative expressions to add interest

Sentence Fluency

- vary sentence types and structures, with a focus on using conjunctions to connect ideas, and pronouns to make links within and between sentences

Point of View

- identify their point of view and other possible points of view, and determine, when appropriate, if their own view is balanced and supported by evidence

Preparing for Revision

- identify elements of their writing that need improvement, using feedback from the teacher and peers, with a focus on specific features

Revision

- make revisions to improve the content, clarity, and interest of their written work, using a variety of strategies

Producing Drafts

- produce revised, draft pieces of writing to meet identified criteria based on the expectations related to content, organization, style, and use of conventions

Overall Expectations

By the end of Grade 5, students will:

- ▶ use editing, proofreading, and publishing skills and strategies, and knowledge of language conventions, to correct errors, refine expression, and present their work effectively

Specific Expectations

By the end of Grade 5, students will:

Apply Knowledge of Language Conventions and Present Written Work Effectively

Spelling Familiar Words

- spell familiar words correctly

Spelling Unfamiliar Words

- spell unfamiliar words using a variety of strategies that involve understanding sound-symbol relationships, word structures, word meanings, and generalizations about spelling

Vocabulary

- confirm spellings and word meanings or word choice using a variety of resources appropriate for the purpose

Punctuation

- use punctuation appropriately to help communicate their intended meaning, with a focus on the use of: a comma before **and** or **but** in compound sentences to join principal clauses; quotation marks for direct speech; and the placement of commas, question marks, and exclamation marks inside quotation marks in direct speech

Grammar

- use parts of speech correctly to communicate their intended meaning clearly, with a focus on the use of: common, proper, and abstract nouns, collective nouns, adjectives, including comparative adjectives, the helping verb *have*, adverbs modifying verbs, and comparative adverbs

Proofreading

- proofread and correct their writing using guidelines developed with peers and the teacher

Publishing

- use a range of appropriate elements of effective presentation in the finished product, including print, script, different fonts, graphics, and layout

Producing Finished Works

- produce pieces of published work to meet identified criteria based on the expectations related to content, organization, style, use of conventions, and use of presentation strategies

Overall Expectations

By the end of Grade 5, students will:

- ▶ reflect on and identify their strengths as writers, areas for improvement, and the strategies they found most helpful at different stages in the writing process

Specific Expectations

By the end of Grade 5, students will:

Reflect on Writing Skills and Strategies

Metacognition

- identify what strategies they found most helpful before, during, and after writing and what steps they can take to improve as writers

Interconnected Skills

- describe, with prompting by the teacher, how their skills in listening, speaking, reading, viewing, and representing help in their development as writers

Portfolio

- select pieces of writing that they think reflect their growth and competence as writers and explain the reasons for their choices

Media Literacy: Grade 5

Overall Expectations

By the end of Grade 5, students will:

- ▶ demonstrate an understanding of a variety of media texts

Specific Expectations

By the end of Grade 5, students will:

Understand Media Texts

Purpose and Audience

- identify the purpose and audience for a variety of media texts

Making Inferences/Interpreting Messages

- use overt and implied messages to draw inferences and construct meaning in media texts

Responding to and Evaluating Texts

- express opinions about ideas, issues, and/or experiences presented in media texts, and give evidence from the texts to support their opinions

Audience Responses

- explain why different audiences might respond differently to the same media text

Point of View

- identify whose point of view is presented or reflected in a media text, ask questions to identify missing or alternative points of view, and, where appropriate suggest how a more balanced view might be represented

Production Perspectives

- identify who produces various media texts, the reason for their production, how they are produced, and how they are funded

Overall Expectations

By the end of Grade 5, students will:

- ▶ identify some media forms and explain how the conventions and techniques associated with them are used to create meaning

Specific Expectations

By the end of Grade 5, students will:

Understand Media Forms, Conventions, and Techniques

Form

- describe in detail the main elements of some media forms

Conventions and Techniques

- identify the conventions and techniques used in some familiar media forms and

explain how they help convey meaning and influence or engage the audience

Overall Expectations

By the end of Grade 5, students will:

- ▶ create a variety of media texts for different purposes and audiences, using appropriate forms, conventions, and techniques

Specific Expectations

By the end of Grade 5, students will:

Create Media Texts

Purpose and Audience

- describe in detail the topic, purpose, and audience for media texts they plan to create

Form

- identify an appropriate form to suit the specific purpose and audience for a media text they plan to create, and explain why it is an appropriate choice

Conventions and Techniques

- identify conventions and techniques appropriate to the form chosen for a media text they plan to create, and explain how they will use the conventions and techniques to help communicate their message

Producing Media Texts

- produce a variety of media texts for specific purposes and audiences, using appropriate forms, conventions, and techniques;

Overall Expectations

By the end of Grade 5, students will:

- ▶ reflect on and identify their strengths as media interpreters and creators, areas for improvement, and the strategies they found most helpful in understanding and creating media texts

Specific Expectations

By the end of Grade 5, students will:

Metacognition

- identify, with some support and direction, what strategies they found most helpful in making sense of and creating media texts, and explain how these and other strategies can help them improve as media viewers/listeners/producers

Interconnected Skills

- explain, with some support and direction, how their skills in listening, speaking, reading, and writing help them to make sense of and produce media texts

Achievement Chart - Language, Grades 1-8

Categories	Level 1	Level 2	Level 3	Level 4
Knowledge and Understanding <i>Subject-specific content acquired in each grade (knowledge), and the comprehension of its meaning and significance (understanding)</i>				
The student:				
Knowledge of content <i>(e.g., forms of text; strategies associated with reading, writing, speaking, and listening; elements of style; terminology; conventions)</i>	→ demonstrates limited knowledge of content	→ demonstrates some knowledge of content	→ demonstrates considerable knowledge of content	→ demonstrates thorough knowledge of content
Understanding of content <i>(e.g., concepts, ideas, opinions; relationships among facts, ideas, concepts, themes)</i>	→ demonstrates limited understanding of content	→ demonstrates some understanding of content	→ demonstrates considerable understanding of content	→ demonstrates thorough understanding of content
Thinking <i>The use of critical and creative thinking skills and/or processes</i>				
The student:				
Use of planning skills <i>(e.g., generating ideas gathering information, focusing research, organizing information)</i>	→ uses planning skills with limited effectiveness	→ uses planning skills with some effectiveness	→ uses planning skills with considerable effectiveness	→ uses planning skills with a high degree of effectiveness
Use of processing skills <i>(e.g., making inferences, interpreting, analysing, detecting bias, synthesizing, evaluating, forming conclusions)</i>	→ uses processing skills with limited effectiveness	→ uses processing skills with some effectiveness	→ uses processing skills with considerable effectiveness	→ uses processing skills with a high degree of effectiveness
Use of critical/creative thinking processes <i>(e.g., reading process, writing process, oral discourse, research, critical/creative analysis, critical literacy, metacognition, invention)</i>	→ uses critical/creative thinking processes with limited effectiveness	→ uses critical/creative thinking processes with some effectiveness	→ uses critical/creative thinking processes with considerable effectiveness	→ uses critical/creative thinking processes with a high degree of effectiveness

Categories	Level 1	Level 2	Level 3	Level 4
Communication <i>The conveying of meaning through various forms</i>				
The student:				
Expressing and organization of ideas and information (e.g., clear expression, logical organization) in oral, visual, and written forms including media forms	- expresses and organizes ideas and information with limited effectiveness	- expresses and organizes ideas and information with some effectiveness	- expresses and organizes ideas and information with considerable effectiveness	- expresses and organizes ideas and information with a high degree of effectiveness
Communication for different audiences and purposes (e.g., use of appropriate style, voice, point of view, tone) in oral, visual, and written forms including media forms	- communicates for different audiences and purposes with limited effectiveness	- communicates for different audiences and purposes with some effectiveness	- communicates for different audiences and purposes with considerable effectiveness	- communicates for different audiences and purposes with a high degree of effectiveness
Use of conventions (e.g., grammar, spelling, punctuation, usage) and terminology of the discipline in oral, visual, and written forms including media forms	- uses conventions, vocabulary, and terminology of the discipline with limited effectiveness	- uses conventions, vocabulary, and terminology of the discipline with some effectiveness	- uses conventions, vocabulary, and terminology of the discipline with considerable effectiveness	- uses conventions, vocabulary, and terminology of the discipline with a high degree of effectiveness
Application <i>The use of knowledge and skills to make connections within and between various contexts</i>				
The student:				
Application of knowledge and skills (e.g., concepts, strategies, processes) in familiar contexts	- applies knowledge and skills in familiar contexts with limited effectiveness	- applies knowledge and skills in familiar contexts with some effectiveness	- applies knowledge and skills in familiar contexts with considerable effectiveness	- applies knowledge and skills in familiar contexts with a high degree of effectiveness
Transfer of knowledge and skills (e.g., concepts, strategies, processes) to new contexts	- transfers knowledge and skills to new contexts with limited effectiveness	- transfers knowledge and skills to new contexts with some effectiveness	- transfers knowledge and skills to new contexts with considerable effectiveness	- transfers knowledge and skills to new contexts with a high degree of effectiveness
Making connections within and between various contexts (e.g., between the text and personal knowledge or experience, other texts, and the world outside the school; between disciplines)	- makes connections within and between various contexts with limited effectiveness	- makes connections within and between various contexts with some effectiveness	- makes connections within and between various contexts with considerable effectiveness	- makes connections within and between various contexts with a high degree of effectiveness

The Importance of Mathematics

Since mathematics is a key element of the curriculum, parents, students, and teachers need to understand why mathematics is important. When students learn mathematics, they do more than master basic skills; they acquire a concise and powerful means of analysis, problem solving, and communication.

Competence using mathematical language, structures, and operations within mathematical processes will help students to reason, justify their conclusions, and express ideas clearly. Students need to be able to use mathematics in connection with technology, their daily lives and eventually, in the workplace.

Mathematics is an essential learning tool. As students identify relationships between mathematical concepts and everyday situations, and make connections between mathematics and other subjects, they gain the ability to extend and apply their knowledge in other curriculum areas (such as science, music and language).

Grade 5: Mathematical Process Expectations

The mathematical process expectations are to be integrated into student learning associated with all the strands.

Throughout Grade 5, students will:

Problem Solving

- ▶ develop, select, and apply problem-solving strategies as they pose and solve problems and conduct investigations, to help deepen their mathematical understanding;

Reasoning and Proving

- ▶ develop and apply reasoning skills (e.g., classification, recognition of relationships, use of counter-examples) to make and investigate conjectures and construct and defend arguments;

Reflecting

- ▶ 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 comparing and adjusting strategies used, by explaining why they think their results are reasonable, by recording their thinking in a math journal);

Selecting Tools and Computational Strategies

- ▶ 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

- ▶ make connections among simple mathematical concepts and procedures, and relate mathematical ideas to situations or phenomena drawn from other contexts (e.g., other curriculum areas, daily life, sports);

Representing

- ▶ create a variety of representations of mathematical ideas (e.g., using physical models, pictures, numbers, variables, diagrams, graphs, onscreen dynamic representations), make connections among them, and apply them to solve problems;

Communicating

- ▶ communicate mathematical thinking orally, visually, and in writing, using everyday language, a basic mathematical vocabulary, and a variety of representations, and observing basic mathematical conventions.

Getting Involved

- ✓ Ask your child to use a chart to record the types of food you eat for dinner for a week. Your child should be able to use a bar graph or a circle graph to display the information.
- ✓ Ask your children to use the information to analyse your eating patterns.

Number Sense and Numeration: Grade 5

Overall Expectations

By the end of Grade 5, students will:

- ▶ read, represent, compare, and order whole numbers to 100 000, decimal numbers to hundredths, proper and improper fractions, and mixed numbers;
- ▶ demonstrate an understanding of magnitude by counting forward and backwards by 0.01;
- ▶ solve problems involving the multiplication and division of multi-digit whole numbers, and involving the addition and subtraction of decimal numbers to hundredths, using a variety of strategies;
- ▶ demonstrate an understanding of proportional reasoning by investigating whole-number rates.

Specific Expectations

By the end of Grade 5, students will:

Quantity Relationships

- represent, compare, and order whole numbers and decimal numbers from 0.01 to 100 000, using a variety of tools (e.g., number lines with appropriate increments, base ten materials for decimals);
- demonstrate an understanding of place value in whole numbers and decimal numbers from 0.01 to 100 000, using a variety of tools and strategies (e.g., use numbers to represent 23 011 as 20 000 + 3000 + 0 + 10 + 1; use base ten materials to represent the relationship between 1, 0.1, and 0.01) (**Sample problem:** How many thousands cubes would be needed to make a base ten block for 100 000?);
- read and print in words whole numbers to ten thousand, using meaningful contexts (e.g., newspapers, magazines);
- round decimal numbers to the nearest tenth, in problems arising from real-life situations;
- represent, compare, and order fractional amounts with like denominators, including proper and improper fractions and mixed numbers, using a variety of tools (e.g., fraction circles, Cuisenaire rods, number lines) and using standard fractional notation;
- demonstrate and explain the concept of equivalent fractions, using concrete materials (e.g., use fraction strips to show that $\frac{3}{4}$ is equal to $\frac{9}{12}$);
- demonstrate and explain equivalent representations of a decimal number, using concrete materials and drawings (e.g., use base ten materials to show that three tenths [0.3] is equal to thirty hundredths [0.30]);

- read and write money amounts to \$1000 (e.g., \$455.35 is 455 dollars and 35 cents, or four hundred fifty-five dollars and thirty-five cents);
- solve problems that arise from real-life situations and that relate to the magnitude of whole numbers up to 100 000 (**Sample problem:** How many boxes hold 100 000 sheets of paper, if one box holds 8 packages of paper, and one package of paper contains 500 sheets of paper?).

Counting

- count forward by hundredths from any decimal number expressed to two decimal places, using concrete materials and number lines (e.g., use base ten materials to represent 2.96 and count forward by hundredths: 2.97, 2.98, 2.99, 3.00, 3.01, ...; “Two and ninety-six hundredths, two and ninety-seven hundredths, two and ninety-eight hundredths, two and ninety-nine hundredths, three, three and one hundredth, ...”) (**Sample problem:** What connections can you make between counting by hundredths and measuring lengths in centimetres and metres?).

Operational Sense

- solve problems involving the addition, subtraction, and multiplication of whole numbers, using a variety of mental strategies (e.g., use the commutative property: $5 \times 18 \times 2 = 5 \times 2 \times 18$, which gives $10 \times 18 = 180$);
- add and subtract decimal numbers to hundredths, including money amounts, using concrete materials, estimation, and algorithms (e.g., use 10 x 10 grids to add 2.45 and 3.25);
- multiply two-digit whole numbers by two-digit whole numbers, using estimation, student-generated algorithms and standard algorithms;
- divide three-digit whole numbers by one-digit whole numbers, using concrete materials, estimation, student-generated algorithms, and standard algorithms;
- multiply decimal numbers by 10, 100, 1000, and 10 000, and divide decimal numbers by 10 and 100, using mental strategies (e.g., use a calculator to look for patterns and generalize to develop a rule);
- use estimation when solving problems involving the addition, subtraction, multiplication, and division of whole numbers, to help judge the reasonableness of a solution (**Sample problem:** Mori used a calculator to add 7.45 and 2.39. The calculator display showed 31.35. Explain why this result is not reasonable, and suggest where you think Mori made his mistake.).

Proportional Relationships

- describe multiplicative relationships between quantities by using simple fractions and decimals (e.g., “If you have 4 plums and I have 6 plums, I can say that I have $1\frac{1}{2}$ or 1.5 times as many.);
- determine and explain, through investigation using concrete materials, drawings, and calculators, the relationship between fractions (i.e., with denominators of 2, 4, 5, 10, 20, 25, 50, and 100) and their equivalent decimal forms (e.g., use a 10 x 10 grid to show that $\frac{2}{5} = \frac{40}{100}$, which can also be represented as 0.4);
- demonstrate an understanding of simple multiplicative relationships involving whole-number rates, through investigation using concrete materials and drawings (**Sample problem:** If 2 books cost \$6, how would you calculate the cost of 8 books?).

Measurement: Grade 5

Overall Expectations

By the end of Grade 5, students will:

- ▶ estimate, measure, and record perimeter, area, temperature change, and elapsed time, using a variety of strategies;
- ▶ determine the relationships among units and measurable attributes, including the area of a rectangle and the volume of a rectangular prism.

Specific Expectations

By the end of Grade 5, students will:

Attributes, Units, and Measurement Sense

- estimate, measure (i.e., using an analogue clock), and represent time intervals to the nearest second;
- estimate and determine elapsed time, with and without using a time line, given the durations of events expressed in minutes, hours, days, weeks, months, or years (**Sample problem:** You are travelling from Toronto to Montreal by train. If the train departs Toronto at 11:30 a.m. and arrives in Montreal at 4:56 p.m., how long will you be on the train?);
- measure and record temperatures to determine and represent temperature changes over time (e.g., record temperature changes in an experiment or over a season) (**Sample problem:** Investigate the relationship between weather, climate, and temperature changes over time in different locations.)

- estimate and measure the perimeter and area of regular and irregular polygons, using a variety of tools (e.g., grid paper, geoboard, dynamic geometry software) and strategies.

Measurement Relationships

- select and justify the most appropriate standard unit (i.e., millimetre, centimetre, decimetre, metre, kilometre) to measure length, height, width, and distance, and to measure the perimeter of various polygons;
- solve problems requiring conversion from metres to centimetres and from kilometres to metres (**Sample problem:** Describe the multiplicative relationship between the number of centimetres and the number of metres that represent a length. Use this relationship to convert 5.1 m to centimetres.);
- solve problems involving the relationship between a 12-hour clock and a 24-hour clock (e.g., 15:00 is 3 hours after 12 noon, so 15:00 is the same as 3:00 p.m.);
- create, through investigation using a variety of tools (e.g., pattern blocks, geoboard, grid paper) and strategies, two-dimensional shapes with the same perimeter or the same area (e.g., rectangles and parallelograms with the same base and the same height) (**Sample problem:** Using dot paper, how many different rectangles can you draw with a perimeter of 12 units? With an area of 12 square units?);
- determine, through investigation using a variety of tools (e.g., concrete materials, dynamic geometry software, grid paper) and strategies (e.g., building arrays), the relationships between the length and width of a rectangle and its area and perimeter, and generalize to develop the formulas [i.e., $Area = length \times width$; $Perimeter = (2 \times length) + (2 \times width)$];
- solve problems requiring the estimation and calculation of perimeters and areas of rectangles (**Sample problem:** You are helping to fold towels, and you want them to stack nicely. By folding across the length and/or the width, you fold each towel a total of three times. You want the shape of each folded towel to be as close to a square as possible. Does it matter how you fold the towels?);
- determine, through investigation, the relationship between capacity (i.e., the amount a container can hold) and volume (i.e., the amount of space taken up by an object), by comparing the volume of an object with the amount of liquid it can contain or displace (e.g., a bottle has a volume, the space it takes up, and a capacity, the amount of liquid it can hold) (**Sample problem:** Compare the volume and capacity of a thin-walled container in

the shape of a rectangular prism to determine the relationship between units for measuring capacity [e.g., millilitres] and units for measuring volume [e.g., cubic centimetres].);

- determine, through investigation using stacked congruent rectangular layers of concrete materials, the relationship between the height, the area of the base, and the volume of a rectangular prism, and generalize to develop the formula (i.e., $Volume = area \text{ of base} \times height$) (**Sample problem:** Create a variety of rectangular prisms using connecting cubes. For each rectangular prism, record the area of the base, the height, and the volume on a chart. Identify relationships.);
- select and justify the most appropriate standard unit to measure mass (i.e., milligram, gram, kilogram, tonne).

Geometry & Spatial Sense: Grade 5

Overall Expectations

By the end of Grade 5, students will:

- ▶ identify and classify two-dimensional shapes by side and angle properties, and compare and sort three-dimensional figures;
- ▶ identify and construct nets of prisms and pyramids;
- ▶ identify and describe the location of an object, using the cardinal directions and translate two-dimensional shapes.

Specific Expectations

By the end of Grade 5, students will:

Geometric Properties

- distinguish among polygons, regular polygons, and other two-dimensional shapes;
- distinguish among prisms, right prisms, pyramids, and other three-dimensional figures;
- identify and classify acute, right, obtuse, and straight angles;
- measure and construct angles up to 90° , using a protractor;
- identify triangles (i.e., acute, right, obtuse, scalene, isosceles, equilateral), and classify them according to angle and side properties;
- construct triangles, using a variety of tools (e.g., protractor, compass, dynamic geometry software), given acute or right angles and side measurements (**Sample problem:** Use a protractor, ruler, and pencil to construct a scalene triangle with a 30° angle and a side measuring 12 cm.).

Geometric Relationships

- identify prisms and pyramids from their nets;
- construct nets of prisms and pyramids, using a variety of tools (e.g., grid paper, isometric dot paper, Polydrons, computer application).

Location and Movement

- locate an object using the cardinal directions (i.e., north, south, east, west) and a coordinate system (e.g., "If I walk 5 steps north and 3 steps east, I will arrive at the apple tree.");
- compare grid systems commonly used on maps (i.e., the use of numbers and letters to identify an area; the use of a coordinate system based on the cardinal directions to describe a specific location);
- identify, perform, and describe translations, using a variety of tools (e.g., geoboard, dot paper, computer program);
- create and analyse designs by translating and/or reflecting a shape, or shapes, using a variety of tools (e.g., geoboard, grid paper, computer program) (**Sample problem:** Identify translations and/or reflections that map congruent shapes onto each other in a given design.).

Patterning and Algebra: Grade 5

Overall Expectations

By the end of Grade 5, students will:

- ▶ determine, through investigation using a table of values, relationships in growing and shrinking patterns, and investigate repeating patterns involving translations;
- ▶ demonstrate, through investigation, an understanding of the use of variables in equations.

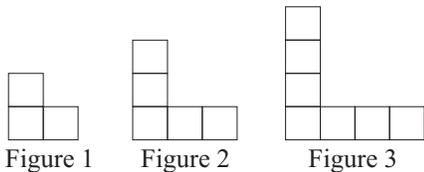
Specific Expectations

By the end of Grade 5, students will:

Patterns and Relationships

- create, identify, and extend numeric and geometric patterns, using a variety of tools (e.g., concrete materials, paper and pencil, calculators, spreadsheets);
- build a model to represent a number pattern presented in a table of values that shows the term number and the term;
- make a table of values for a pattern that is generated by adding or subtracting a number (i.e., a constant) to get the next term, or by multiplying or dividing by a constant to get the next term, given either the sequence (e.g., 12, 17, 22, 27, 32, ...) or the pattern rule in words (e.g., start with 12 and add 5 to each term to get the next term);

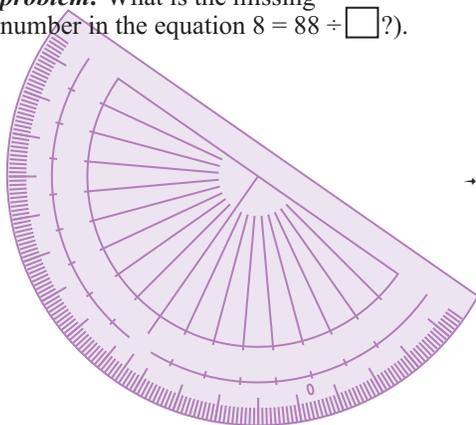
- make predictions related to growing and shrinking geometric and numeric patterns (**Sample problem:** Create growing L's using tiles. The first L has 3 tiles, the second L has 5 tiles, the third L has 7 tiles, and so on. Predict the number of tiles you would need to build the 10th L in the pattern.);



- extend and create repeating patterns that result from translations, through investigation using a variety of tools (e.g., pattern blocks, dynamic geometry software, dot paper).

Variables, Expressions, and Equations

- demonstrate, through investigation, an understanding of variables as changing quantities, given equations with letters or other symbols that describe relationships involving simple rates (e.g., the equations $C = 3 \times n$ and $3 \times n = C$ both represent the relationship between the total cost (C), in dollars, and the number of sandwiches purchased (n), when each sandwich costs \$3);
- demonstrate, through investigation, an understanding of variables as unknown quantities represented by a letter or other symbol (e.g., $12 = 5 + \square$ or $12 = 5 + s$ can be used to represent the following situation: "I have 12 stamps altogether and 5 of them are from Canada. How many are from other countries?");
- determine the missing number in equations involving addition, subtraction, multiplication, or division and one- or two-digit numbers, using a variety of tools and strategies (e.g., modelling with concrete materials, using guess and check with and without the aid of a calculator) (**Sample problem:** What is the missing number in the equation $8 = 88 \div \square$?).



Data Management & Probability: Grade 5

Overall Expectations

By the end of Grade 5, students will:

- ▶ collect and organize discrete or continuous primary data and secondary data and display the data using charts and graphs, including broken-line graphs;
- ▶ read, describe, and interpret primary data and secondary data presented in charts and graphs, including broken-line graphs;
- ▶ represent as a fraction the probability that a specific outcome will occur in a simple probability experiment, using systematic lists and area models.

Specific Expectations

By the end of Grade 5, students will:

Collection and Organization

- distinguish between discrete data (i.e., data organized using numbers that have gaps between them, such as whole numbers, and often used to represent a count, such as the number of times a word is used) and continuous data (i.e., data organized using all numbers on a number line that fall within the range of the data, and used to represent measurements such as heights or ages of trees);
- collect data by conducting a survey or an experiment (e.g., gather and record air temperature over a two-week period) to do with themselves, their environment, issues in their school or community, or content from another subject, and record observations or measurements;
- collect and organize discrete or continuous primary data and secondary data and display the data in charts, tables, and graphs (including broken-line graphs) that have appropriate titles, labels (e.g., appropriate units marked on the axes), and scales that suit the range and distribution of the data (e.g., to represent precipitation amounts ranging from 0 mm to 50 mm over the school year, use a scale of 5 mm for each unit on the vertical axis and show months on the horizontal axis), using a variety of tools (e.g., graph paper, simple spreadsheets, dynamic statistical software);
- demonstrate an understanding that sets of data can be samples of larger populations (e.g., to determine the most common shoe size in your class, you would include every member of the class in the data; to determine the most common shoe size in Ontario for your age group, you might collect a large sample from classes across the province);

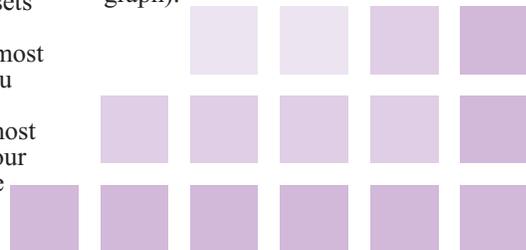
- describe, through investigation, how a set of data is collected (e.g., by survey, measurement, observation) and explain whether the collection method is appropriate.

Data Relationships

- read, interpret, and draw conclusions from primary data (e.g., survey results, measurements, observations) and from secondary data (e.g., precipitation or temperature data in the newspaper, data from the Internet about heights of buildings and other structures), presented in charts, tables, and graphs (including broken-line graphs);
- calculate the mean for a small set of data and use it to describe the shape of the data set across its range of values, using charts, tables, and graphs (e.g., "The data values fall mainly into two groups on both sides of the mean."; "The set of data is not spread out evenly around the mean.");
- compare similarities and differences between two related sets of data, using a variety of strategies (e.g., by representing the data using tally charts, stem-and-leaf plots, double bar graphs, or broken-line graphs; by determining measures of central tendency [i.e., mean, median, and mode]; by describing the shape of a data set across its range of values).

Probability

- determine and represent all the possible outcomes in a simple probability experiment (e.g., when tossing a coin, the possible outcomes are heads and tails; when rolling a number cube, the possible outcomes are 1, 2, 3, 4, 5, and 6), using systematic lists and area models (e.g., a rectangle is divided into two equal areas to represent the outcomes of a coin toss experiment);
- represent, using a common fraction, the probability that an event will occur in simple games and probability experiments (e.g., "My spinner has four equal sections and one of those sections is coloured red. The probability that I will land on red is $\frac{1}{4}$.");
- pose and solve simple probability problems, and solve them by conducting probability experiments and selecting appropriate methods of recording the results (e.g., tally chart, line plot, bar graph).



Achievement Chart - Mathematics, Grades 1-8

Categories	Level 1	Level 2	Level 3	Level 4
Knowledge and Understanding <i>Subject-specific content acquired in each grade (knowledge), and the comprehension of its meaning and significance (understanding)</i>				
The student:				
Knowledge of content (e.g., facts, terms, procedural skills, use of tools)	→ demonstrates limited knowledge of content	→ demonstrates some knowledge of content	→ demonstrates considerable knowledge of content	→ demonstrates thorough knowledge of content
Understanding of mathematical concepts	→ demonstrates limited understanding of concepts	→ demonstrates some understanding of concepts	→ demonstrates considerable understanding of concepts	→ demonstrates thorough understanding of concepts
Thinking <i>The use of critical and creative thinking skills and/or processes*</i>				
The student:				
Use of planning skills ▶ understanding the problem (e.g., formulating and interpreting the problem, making conjectures) ▶ making a plan for solving the problem	→ uses planning skills with limited effectiveness	→ uses planning skills with some effectiveness	→ uses planning skills with considerable effectiveness	→ uses planning skills with a high degree of effectiveness
Use of processing skills* ▶ carrying out a plan (e.g., collecting data, questioning, testing, revising, modelling, solving, inferring, forming conclusions) ▶ looking back at the solution (e.g., evaluating reasonableness, making convincing arguments, reasoning, justifying, proving, reflecting)	→ uses processing skills with limited effectiveness	→ uses processing skills with some effectiveness	→ uses processing skills with considerable effectiveness	→ uses processing skills with a high degree of effectiveness
Use of critical/creative thinking processes* (e.g., problem solving, inquiry)	→ uses of critical/creative thinking process with limited effectiveness	→ uses of critical/creative thinking process with some effectiveness	→ uses of critical/creative thinking process with considerable effectiveness	→ uses of critical/creative thinking process with a high degree of effectiveness

* The processing skills and critical/creative thinking processes in the Thinking category include some but not all aspects of the *mathematical processes* described in the Ministry document. Some aspects of the mathematical processes relate to the other categories of the achievement chart.

Categories	Level 1	Level 2	Level 3	Level 4
Communication <i>The conveying of meaning through various forms</i>				
The student:				
Expression and organization of ideas and mathematical thinking (e.g., clarity of expression, logical organization), using oral, visual, and written forms (e.g., pictorial, graphic, dynamic, numeric, algebraic forms; concrete materials)	→ expresses and organizes mathematical thinking with limited effectiveness	→ expresses and organizes mathematical thinking with some effectiveness	→ expresses and organizes mathematical thinking with considerable effectiveness	→ expresses and organizes mathematical thinking with a high degree of effectiveness
Communication for different audiences (e.g., peers, teachers) and purposes (e.g., to present data, justify a solution, express a mathematical argument) in oral, visual, and written forms	→ communicates for different audiences and purposes with limited effectiveness	→ communicates for different audiences and purposes with some effectiveness	→ communicates for different audiences and purposes with considerable effectiveness	→ communicates for different audiences and purposes with a high degree of effectiveness
Use of conventions, vocabulary, and terminology of the discipline (e.g., terms, symbols) in oral, visual, and written forms	→ uses conventions, vocabulary, and terminology of the discipline with limited effectiveness	→ uses conventions, vocabulary, and terminology of the discipline with some effectiveness	→ uses conventions, vocabulary, and terminology of the discipline with considerable effectiveness	→ uses conventions, vocabulary, and terminology of the discipline with a high degree of effectiveness
Application <i>The use of knowledge and skills to make connections within and between various contexts</i>				
The student:				
Application of knowledge and skills in familiar contexts	→ applies knowledge and skills in familiar contexts with limited effectiveness	→ applies knowledge and skills in familiar contexts with some effectiveness	→ applies knowledge and skills in familiar contexts with considerable effectiveness	→ applies knowledge and skills in familiar contexts with a high degree of effectiveness
Transfer of knowledge and skills to new contexts	→ transfers knowledge and skills to new contexts with limited effectiveness	→ transfers knowledge and skills to new contexts with some effectiveness	→ transfers knowledge and skills to new contexts with considerable effectiveness	→ transfers knowledge and skills to new contexts with a high degree of effectiveness
Making connections within and between various contexts (e.g., connections between concepts, representations, and forms within mathematics; connections involving use of prior knowledge and experience; connections between mathematics, other disciplines, and the real world)	→ makes connections within and between various contexts with limited effectiveness	→ makes connections within and between various contexts with some effectiveness	→ makes connections within and between various contexts with considerable effectiveness	→ makes connections within and between various contexts with a high degree of effectiveness

French As A Second Language: Grade 5

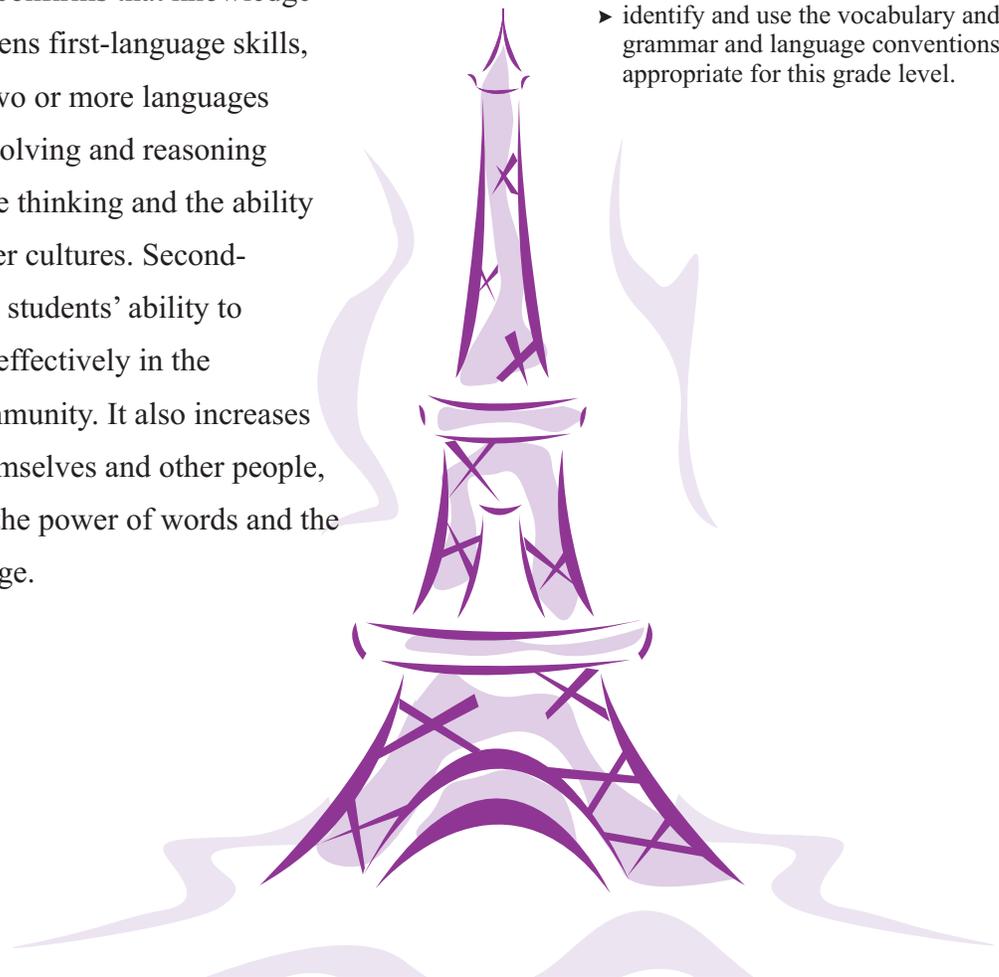
The Importance of French As a Second Language

The ability to communicate in French is a valuable skill, because French is one of Canada's two official languages and is also widely used around the world. Second-language learning in general is valuable for a number of reasons. Research confirms that knowledge of a second language strengthens first-language skills, and that the ability to speak two or more languages generally enhances problem-solving and reasoning skills, the capacity for creative thinking and the ability to respect and understand other cultures. Second-language learning strengthens students' ability to communicate and participate effectively in the workplace and the global community. It also increases their ability to understand themselves and other people, and helps them to appreciate the power of words and the many different uses of language.

Overall Expectations

By the end of Grade 5, students will:

- ▶ listen and talk about short, simple oral texts dealing with familiar topics;
- ▶ read a variety of simple materials, 100 to 150 words long, and demonstrate understanding;
- ▶ write ideas and facts, or provide written responses to simple questions using simple sentences;
- ▶ identify and use the vocabulary and the grammar and language conventions appropriate for this grade level.



Getting Involved

- ✓ Encourage your child to read to you in French.
- ✓ Practice new vocabulary by asking your child for the French equivalent.
- ✓ Encourage your child to watch a cartoon on television in French. Listen to music on a French radio station with your child.
- ✓

The Goals of the Science and Technology Program

A scientifically and technologically literate person is one who can read and understand common media reports about science and technology, critically evaluate the information presented, and confidently engage in discussions and decision-making activities that involve science and technology.

Science Co-ordinators' and Consultants' Association of Ontario (SCCAO) and Science Teachers' Association of Ontario (STAO/APSO), "Position Paper: The Nature of Science" (2006), p. 1

During the twentieth century, science and technology played an increasingly important role in the lives of all Canadians. Science and technology underpin much of what we take for granted, including clean water, the places in which we live and work, and the ways in which we communicate with others. The impact of science and technology on our lives will continue to grow. Consequently, scientific and technological literacy for all has become the overarching objective of science and technology education throughout the world.

Achievement of both excellence and equity underlies the three major goals of the science and technology program at the elementary level. Accordingly, The Ontario Curriculum, Grades 1–8: Science and Technology, 2007 outlines the skills and knowledge that students will develop, as well as the attitudes that they need to develop in order to use their knowledge and skills responsibly. The three goals are the following:

1. to relate science and technology to society and the environment
2. to develop the skills, strategies, and habits of mind required for scientific inquiry and technological problem solving
3. to understand the basic concepts of science and technology

Fundamental Concepts

Fundamental concepts are key ideas that provide a framework for the acquisition of all scientific and technological knowledge. They also help students to integrate scientific and technological knowledge with knowledge in other subject areas, such as mathematics and social studies.

These fundamental concepts are described in the following chart.

Fundamental Concepts	
Matter	Matter is anything that has mass and occupies space. Matter has particular structural and behavioural characteristics.
Energy	Energy comes in many forms, and can change forms. It is required to make things happen (to do work). Work is done when a force causes movement.
Systems and Interactions	A system is a collection of living and/or non-living things and processes that interact to perform some function. A system includes inputs, out-puts, and relationships among system components. Natural and human systems develop in response to, and are limited by, a variety of environmental factors.
Structure and Function	This concept focuses on the interrelationship between the function or use of a natural or human-made object and the form that the object takes.
Sustainability and Stewardship	Sustainability is the concept of meeting the needs of the present without compromising the ability of future generations to meet their needs. Stewardship involves understanding that we need to use and care for the natural environment in a responsible way and making the effort to pass on to future generations no less than what we have access to ourselves. Values that are central to responsible stewardship are: using non-renewable resources with care; reusing and recycling what we can; switching to renewable resources where possible.
Change and Continuity	Change is the process of becoming different over time, and can be quantified. Continuity represents consistency and connectedness within and among systems over time. Interactions within and among systems result in change and variations in consistency.

Understanding Life Systems

Human Organ Systems

Fundamental Concepts	Big Ideas
Systems and Interactions	Organ systems are components of a larger system (the body) and, as such, work together and affect one another. <i>(Overall expectations 2 and 3)</i>
Structure and Function	Organ structures are linked to their functions. <i>(Overall expectations 2 and 3)</i> Systems in the human body work together to meet our basic needs. <i>(Overall expectations 2 and 3)</i> Choices we make affect our organ systems and, in turn, our overall health. <i>(Overall expectations 1 and 3)</i>

Understanding Life Systems - Human Organ Systems: Grade 5

Overall Expectations

By the end of Grade 5, students will:

1. analyse the impact of human activities and technological innovations on human health;
2. investigate the structure and function of the major organs of various human body systems;
3. demonstrate an understanding of the structure and function of human body systems and interactions within and between systems.

Specific Expectations

By the end of Grade 5, students will:

Relating Science and Technology to Society and the Environment

- 1.1 assess the effects of social and environmental factors on human health, and propose ways in which individuals can reduce the harmful effects of these factors and take advantage of those that are beneficial

- 1.2 evaluate the effects, both beneficial and harmful, of various technologies on human body systems, taking different perspectives into account (e.g., the perspectives of the developers of the technologies, advertisers, children and young people, parents)

Specific Expectations

By the end of Grade 5, students will:

Developing Investigation and Communication Skills

- 2.1 follow established safety procedures for physical activities (e.g., make the teacher aware of any physical limitations that might affect ability to perform activities)
- 2.2 use scientific inquiry/experimentation skills to investigate changes in body systems (e.g., heart rate, breathing, body temperature) as a result of physical activity (e.g., exercise, resting, eating)
- 2.3 design and build a model to demonstrate how organs or components of body systems in the human body work and interact with other components (e.g., build a model that shows how muscles, bones, and joints in the human body work together as a system to allow movement of the arms or legs; build a model to show how the lungs and heart work as a system)
- 2.4 use appropriate science and technology vocabulary, including circulation, respiration, digestion, organs, and nutrients, in oral and written communication

- 2.5 use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g., create labelled charts or graphs to show changes in heart rate and breathing as a result of exercising)

Specific Expectations

By the end of Grade 5, students will:

Understanding Basic Concepts

- 3.1 identify major systems in the human body (e.g., musculoskeletal system, digestive system, nervous system, circulatory system) and describe their roles and interrelationships
- 3.2 describe the basic structure and function of major organs in the respiratory, circulatory, and digestive systems (e.g., we have two lungs; each one is about 25–30 cm long and cone-shaped; the right lung is slightly bigger because it has three lobes and the left lung has only two; our lungs are responsible for gas exchanges)
- 3.3 identify interrelationships between body systems (e.g., the respiratory system provides oxygen and removes carbon dioxide for the circulatory system)
- 3.4 identify common diseases and the organs and/or body systems that they affect (e.g., epilepsy affects the brain [central nervous system]; appendicitis affects the appendix [digestive system]; asthma and emphysema affect the lungs [respiratory system])

Understanding Structures and Mechanisms

Forces Acting on Structures and Mechanisms

Fundamental Concepts	Big Ideas
Structure and Function	<p>Structures and mechanisms throughout our environment have forces that act on and within them. (Overall expectations 1 and 3)</p> <p>We can measure forces in order to determine how they affect structures and mechanisms. This information can be used to guide the design of new structures and mechanisms. (Overall expectations 1 and 2)</p> <p>Forces that result from natural phenomena have an effect on society and the environment. (Overall expectations 1 and 3)</p>

Understanding Structures and Mechanisms - Forces Acting on Structures and Mechanisms: Grade 5

Overall Expectations

By the end of Grade 5, students will:

1. analyse social and environmental impacts of forces acting on structures and mechanisms;
2. investigate forces that act on structures and mechanisms;
3. identify forces that act on and within structures and mechanisms, and describe the effects of these forces on structures and mechanisms.

Specific Expectations

By the end of Grade 5, students will:

Relating Science and Technology to Society and the Environment

- 1.1 analyse the effects of forces from natural phenomena (e.g., tornadoes, hurricanes, earthquakes, tsunamis) on the natural and built environment
- 1.2 evaluate the impact of society and the environment on structures and mechanisms, taking different perspectives into account (e.g., the perspectives of golfers, local bird-watching groups, families, a school board), and suggest ways in which structures and mechanisms can be modified to best achieve social and environmental objectives

Specific Expectations

By the end of Grade 5, students will:

Developing Investigation and Communication Skills

- 2.1 follow established safety procedures for working with tools and materials (e.g., wear protective eyewear when testing structures to the breaking point)
- 2.2 measure and compare, quantitatively and/or qualitatively, the force required to move a load (e.g., to lift a book, to open a drawer) using different mechanical systems (e.g., different pulley systems, a lever, a gear system), and describe the relationship between the force required and the distance over which the force moves
- 2.3 use scientific inquiry/research skills to investigate how structures are built to withstand forces
- 2.4 use technological problem-solving skills to design, build, and test a frame structure (e.g., a bridge, a tower) that will withstand the application of an external force (e.g., a strong wind or simulated vibrations from a train) or a mechanical system that performs a specific function (e.g., a building crane)
- 2.5 use appropriate science and technology vocabulary, including tension, compression, torque, system, and load, in oral and written communication
- 2.6 use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g., make an oral presentation explaining the techniques they used to build a model of a bridge that can withstand vibrations from a train)

Specific Expectations

By the end of Grade 5, students will:

Understanding Basic Concepts

- 3.1 identify internal forces acting on a structure (e.g., compression [squeezing], tension [stretching]), and describe their effects on the structure
- 3.2 identify external forces acting on a structure (e.g., the weight of people and furniture in a house, wind blowing on a tent, the movement caused by a passing train), and describe their effects on the structure, using diagrams
- 3.3 explain the advantages and disadvantages of different types of mechanical systems (e.g., a hoist in a lifting system that comprises four pulleys will decrease the amount of force needed by four times, but the force will have to move four times as fast)
- 3.4 describe forces resulting from natural phenomena that can have severe consequences for structures in the environment (e.g., a house loses its roof in a wind storm), and identify structural features that help overcome some of these forces (e.g., cross supports for roofs, steel beams in bridges)
- 3.5 describe how protective sports equipment protects the body from the impact of forces (e.g., helmets reduce the intensity of the force of the impact, spreading the impact over a larger area and preventing direct impact to the skull; knee and shin pads spread the impact over a larger area and protect against cuts and scrapes)

Understanding Matter and Energy

Properties of and Changes in Matter

Fundamental Concepts	Big Ideas
Matter	There are three states of matter. (Overall expectations 2 and 3)
Energy	Matter that changes state is still the same matter. (Overall expectations 2 and 3)
Sustainability and Stewardship	Physical change refers to the fact that a substance can be changed from one form to another. (Overall expectations 2 and 3) Chemical change implies the formation of a new substance. (Overall expectations 2 and 3) The properties of materials determine their use and may have an effect on society and the environment. (Overall expectation 1)

Understanding Matter and Energy - Properties of and Changes in Matter: Grade 5

Overall Expectations

By the end of Grade 5, students will:

1. evaluate the social and environmental impacts of processes used to make everyday products;
2. conduct investigations that explore the properties of matter and changes in matter;
3. demonstrate an understanding of the properties of matter, changes of state, and physical and chemical change.

Specific Expectations

By the end of Grade 5, students will:

Relating Science and Technology to Society and the Environment

- 1.1 evaluate the environmental impacts of processes that change one product into another product through physical or chemical changes
- 1.2 assess the social and environmental impact of using processes that rely on chemical changes to produce consumer products, taking different perspectives into account (e.g., the perspectives of food manufacturers, consumers, landfill operators, people concerned about the environment), and make a case for maintaining the current level of use of the product or for reducing it

Specific Expectations

By the end of Grade 5, students will:

Developing Investigation and Communication Skills

- 2.1 follow established safety procedures for working with heating appliances and hot materials (e.g., switch hot plates off immediately after use)
- 2.2 measure temperature and mass, using appropriate instruments (e.g., a thermometer, a single-pan balance)
- 2.3 use scientific inquiry/experimentation skills to investigate changes of state and changes in matter
- 2.4 use scientific inquiry/experimentation skills to determine how the physical properties of materials make them useful for particular tasks (e.g., when cleaning up a liquid spill in the kitchen, which material is best suited to do the job: a piece of sponge, a piece of terry cloth, a paper towel?)
- 2.5 use appropriate science and technology vocabulary, including mass, volume, properties, matter, physical/reversible changes, and chemical/irreversible changes, in oral and written communication
- 2.6 use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g., create a labelled chart or graph to show the time required for an ice cube to melt completely)

Specific Expectations

By the end of Grade 5, students will:

Understanding Basic Concepts

- 3.1 identify matter as everything that has mass and occupies space

3.2 identify properties of solids, liquids, and gases (e.g., solids have definite volume and hold their shape; liquids have definite volume but take the shape of their container or spread when they are not contained; gases have no definite volume and take the volume and shape of their container or spread when they are not contained), and state examples of each

3.3 explain changes of state in matter (e.g., evaporation, condensation, solidification or freezing, fusion or melting, sublimation), and give examples of each (e.g., water from wet clothes evaporates; steam from a boiling kettle condenses on a cold window; water in ponds and lakes solidifies or freezes in winter; a frozen treat melts on a warm summer day; a moth ball sublimates in the closet)

3.4 describe physical changes in matter as changes that are reversible (e.g., a melted ice cube can be refrozen; a bottle of frozen water can be thawed to a liquid state again; water vapour that has condensed on a cold window can evaporate into a vaporous state again; water from a puddle that has evaporated will fall to the ground as rain)

3.5 describe chemical changes in matter as changes that are irreversible (e.g., when the chrome on a bicycle rusts, it can never go back to being chrome; when an egg is boiled it can never go back to being a raw egg)

3.6 explain how changes of state involve the release of heat (e.g., when water freezes it releases heat) or the absorption of heat (e.g., when an ice cube melts, it absorbs heat)

3.7 identify indicators of a chemical change (e.g., production of a gas, change in colour, formation of precipitate)

3.8 distinguish between a physical change and a chemical change (e.g., a physical change can be reversed [ice to water to ice], whereas a chemical change creates new substance[s] [wood to smoke and ash])

Understanding Earth and Space Systems

Conservation of Energy and Resources

Fundamental Concepts	Big Ideas
<p>Energy</p> <p>Sustainability and Stewardship</p>	<p>Energy sources are either renewable or non-renewable. (Overall expectation 3)</p> <p>Energy can neither be created nor destroyed, but it can be transformed. (Overall expectations 2 and 3)</p> <p>Choices about using energy and resources have both immediate and long-term impacts. (Overall expectation 1)</p> <p>Conservation (reducing our use of energy and resources) is one way of reducing the impacts of using energy and resources. (Overall expectation 1)</p>

Understanding Earth and Space Systems - Conservation of Energy and Resources: Grade 5

Overall Expectations

By the end of Grade 5, students will:

1. analyse the immediate and long-term effects of energy and resource use on society and the environment, and evaluate options for conserving energy and resources;
2. investigate energy transformation and conservation;
3. demonstrate an understanding of the various forms and sources of energy and the ways in which energy can be transformed and conserved.

Specific Expectations

By the end of Grade 5, students will:

Relating Science and Technology to Society and the Environment

- 1.1 analyse the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts (e.g., turning off the faucet while brushing teeth or washing and rinsing dishes conserves water; reusing or recycling products, or using fewer products, conserves natural resources and energy)
- 1.2 evaluate the effects of various technologies on energy consumption (e.g., improving our home's insulation allows us to conserve heat and reduce energy

consumption; aerodynamic design can improve the energy efficiency of cars and buses; household appliances designed to make our lives easier use large amounts of energy; some cars and recreational vehicles use energy less efficiently than others), and propose ways in which individuals can improve energy conservation

Specific Expectations

By the end of Grade 5, students will:

Developing Investigation and Communication Skills

- 2.1 follow established safety procedures for using tools and materials (e.g., use hand drills correctly when making holes in wood)
- 2.2 use scientific inquiry/research skills to investigate issues related to energy and resource conservation (e.g., interview an Aboriginal person about his or her traditional teachings on conservation)
- 2.3 use technological problem-solving skills to design, build, and test a device that transforms one form of energy into another (e.g., create a child's toy that uses the electrical energy from a battery or solar cell to move across the floor [kinetic energy] and make a noise [sound energy]), and examine ways in which energy is being "lost" in the device
- 2.4 use appropriate science and technology vocabulary, including energy, heat, light, sound, electrical, mechanical, and chemical, in oral and written communication
- 2.5 use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g., in a small

group, discuss ways in which technological innovations increase and/or decrease our ability to conserve energy)

Specific Expectations

By the end of Grade 5, students will:

Understanding Basic Concepts

- 3.1 identify a variety of forms of energy (e.g., electrical, chemical, mechanical, heat, light, kinetic) and give examples from everyday life of how that energy is used (e.g., electrical energy for cooking; chemical/electrical energy to run our cars; mechanical energy to hit a baseball; light energy for managing traffic on the roads; heat energy to warm homes and schools)
- 3.2 identify renewable and non-renewable sources of energy (e.g., renewable: sun, wind, ocean waves and tides, wood; non-renewable: fossil fuels such as coal and natural gas)
- 3.3 describe how energy is stored and transformed in a given device or system (e.g., in a portable electric device, chemical energy stored in a battery is transformed into electrical energy and then into other forms of energy such as mechanical, sound, and/or light energy)
- 3.4 recognize that energy cannot be created or destroyed but can only be changed from one form to another (e.g., chemical energy in a battery becomes electrical energy)
- 3.5 explain that energy that is apparently "lost" from a system has been transformed into other energy forms (usually heat or sound) that are not useful to the system (e.g., sound from a car's engine does not help the car move)

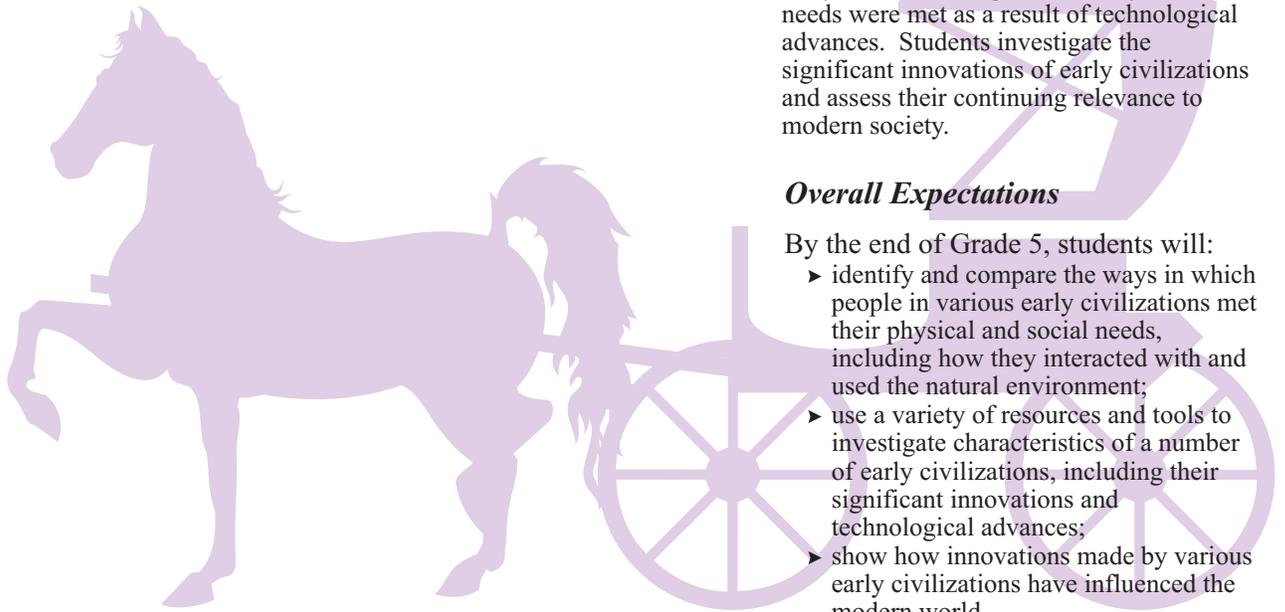
Achievement Chart - Science and Technology, - Grades 1-8

Categories	Level 1	Level 2	Level 3	Level 4
Knowledge and Understanding <i>Subject-specific content acquired in each grade (knowledge), and the comprehension of its meaning and significance (understanding)</i>				
The student:				
Knowledge of content <i>(e.g., facts; terminology; definitions; safe use of tools, equipment, and materials)</i>	→ demonstrates limited knowledge of content	→ demonstrates some knowledge of content	→ demonstrates considerable knowledge of content	→ demonstrates thorough knowledge of content
Understanding of content <i>(e.g., concepts, ideas, theories, principles, procedures, processes)</i>	→ demonstrates limited understanding of content	→ demonstrates some understanding of content	→ demonstrates considerable understanding of content	→ demonstrates thorough understanding of content
Thinking and Investigation <i>The use of critical and creative thinking skills and inquiry and problem solving skills and/or processes</i>				
The student:				
Use of initiating and planning skills and strategies <i>(e.g., formulating questions, identifying the problem, developing hypotheses, scheduling, selecting strategies and resources, developing plans)</i>	→ uses initiating and planning skills and strategies with limited effectiveness	→ uses initiating and planning skills and strategies with some effectiveness	→ uses initiating and planning skills and strategies with considerable effectiveness	→ uses initiating and planning skills and strategies with a high degree of effectiveness
Use of processing skills and strategies <i>(e.g., performing and recording, gathering evidence and data, observing, manipulating materials and using equipment safely, solving equations, proving)</i>	→ uses processing skills and strategies with limited effectiveness	→ uses processing skills and strategies with some effectiveness	→ uses processing skills and strategies with considerable effectiveness	→ uses processing skills and strategies with a high degree of effectiveness
Use of critical/creative thinking processes, skills, and strategies <i>(e.g., analysing, interpreting, problem solving, evaluating, forming and justifying conclusions on the basis of evidence)</i>	→ uses critical/creative thinking processes, skills, and strategies with limited effectiveness	→ uses critical/creative thinking processes, skills, and strategies with some effectiveness	→ uses critical/creative thinking processes, skills, and strategies with considerable effectiveness	→ uses critical/creative thinking processes, skills, and strategies with a high degree of effectiveness
Communication <i>The conveying of meaning through various forms</i>				
The student:				
Expression and organization of ideas and information <i>(e.g., clear expression, logical organization) in oral, visual, and/or written forms</i> <i>(e.g., diagrams, models)</i>	→ expresses and organizes ideas and information with limited effectiveness	→ expresses and organizes ideas and information with some effectiveness	→ expresses and organizes ideas and information with considerable effectiveness	→ expresses and organizes ideas and information with a high degree of effectiveness

Categories	Level 1	Level 2	Level 3	Level 4
Communication (continued)				
The student:				
Communication for different audiences (e.g., peers, adults) and purposes (e.g., to inform, to persuade) in oral, visual, and/or written forms	→ communicates for different audiences and purposes with limited effectiveness	→ communicates for different audiences and purposes with some effectiveness	→ communicates for different audiences and purposes with considerable effectiveness	→ communicates for different audiences and purposes with a high degree of effectiveness
Use of conventions, vocabulary, and terminology of the discipline in oral, visual, and/or written forms (e.g., symbols, formulae, scientific notation, SI units)	→ uses conventions, vocabulary, and terminology of the discipline with limited effectiveness	→ uses conventions, vocabulary, and terminology of the discipline with some effectiveness	→ uses conventions, vocabulary, and terminology of the discipline with considerable effectiveness	→ uses conventions, vocabulary, and terminology of the discipline with a high degree of effectiveness
Application <i>The use of knowledge and skills to make connections within and between various contexts</i>				
The student:				
Application of knowledge and skills (e.g., concepts and processes, safe use of equipment and technology, investigation skills) in familiar contexts	→ applies knowledge and skills in familiar contexts with limited effectiveness	→ applies knowledge and skills in familiar contexts with some effectiveness	→ applies knowledge and skills in familiar contexts with considerable effectiveness	→ applies knowledge and skills in familiar contexts with a high degree of effectiveness
Transfer of knowledge and skills (e.g., concepts and processes, safe use of equipment and technology, investigation skills) to unfamiliar contexts	→ transfers knowledge and skills to unfamiliar contexts with limited effectiveness	→ transfers knowledge and skills to unfamiliar contexts with some effectiveness	→ transfers knowledge and skills to unfamiliar contexts with considerable effectiveness	→ transfers knowledge and skills to unfamiliar contexts with a high degree of effectiveness
Making connections between science, technology, society, and the environment (e.g., assessing the impact of science and technology on people, other living things, and the environment)	→ makes connections between science, technology, society, and the environment with limited effectiveness	→ makes connections between science, technology, society, and the environment with some effectiveness	→ makes connections between science, technology, society, and the environment with considerable effectiveness	→ makes connections between science, technology, society, and the environment with a high degree of effectiveness
Proposing courses of practical action to deal with problems relating to science, technology, society, and the environment	→ proposes courses of practical action of limited effectiveness	→ proposes courses of practical action of some effectiveness	→ makes connections between science, technology, society, and the environment with considerable effectiveness	→ makes connections between science, technology, society, and the environment with a high degree of effectiveness

The Importance of Social Studies

Students, their parents, friends, teachers and all citizens are part of a variety of communities from local to global in scale. Social studies courses allow students to discover and appreciate the various heritages and nature of citizenship within these communities. Through the year students gain a knowledge of key social studies concepts, including change, culture, environment, power and basic economic forces within the marketplace. They learn about Canada and the role of citizens in a democratic society and its connections around the globe. This social studies course also helps students acquire skills of inquiry and communication through field studies, research projects, the use of maps, globes and models, and the consideration of various forms of historical evidence. Students apply these skills to develop an understanding of Canadian identity and democratic values, to evaluate different points of view, and to examine information critically in order to solve problems and make decisions on issues that are relevant to their lives.



Heritage & Citizenship: Early Civilizations: Grade 5

Overview:

Students investigate the influence of the natural environment on the development of various early civilizations around the world. They examine changes in the ways human needs were met as a result of technological advances. Students investigate the significant innovations of early civilizations and assess their continuing relevance to modern society.

Overall Expectations

- By the end of Grade 5, students will:
- ▶ identify and compare the ways in which people in various early civilizations met their physical and social needs, including how they interacted with and used the natural environment;
 - ▶ use a variety of resources and tools to investigate characteristics of a number of early civilizations, including their significant innovations and technological advances;
 - ▶ show how innovations made by various early civilizations have influenced the modern world.

Canada & World Connections - Aspects of Citizenship & Government in Canada: Grade 5

Overview:

Students examine the structure and function of the three levels of government in Canada and how they relate to one another. Students use research skills and critical thinking skills to extend their understanding of the rights of groups and individuals and the responsibilities of citizenship of Canada. Students also identify ways in which government and the responsibilities of citizenship directly affect their own lives.

Overall Expectations:

By the end of Grade 5, students will:

- ▶ summarize the structures, functions, and interactions of Canada's federal provincial/territorial, and municipal governments, and identify and describe significant Canadian symbols, ceremonies, buildings, and political figures;
- ▶ use a variety of resources and tools to gather and analyse information about government processes, the rights of groups and individuals, and the responsibilities of citizenship in Canada, including participation in the electoral process;
- ▶ identify concrete examples of how government plays a role in contemporary society and of how the rights of groups and individuals and the responsibilities of citizenship apply to their own lives.



Getting Involved

- ✓ Encourage your child to ask questions about the world.
- ✓ Stimulate your child's interest in current events and issues.
- ✓ Become familiar with the course expectations to better discuss your child's work.
- ✓ Communicate regularly with your child's teacher.
- ✓ Encourage your child to participate in activities that develop responsible citizenship.

Achievement Chart for Social Studies, History, and Geography - Grades 1-8

Categories	Level 1	Level 2	Level 3	Level 4
Knowledge and Understanding <i>Subject-specific content acquired in each grade (knowledge), and the comprehension of its meaning and significance (understanding)</i>				
The student:				
Knowledge of content (e.g., facts, terms, definitions)	→ demonstrates limited knowledge of content	→ demonstrates some knowledge of content	→ demonstrates considerable knowledge of content	→ demonstrates thorough knowledge of content
Understanding of content (e.g., concepts, ideas, theories, procedures, processes, methodologies, and/or technologies)	→ demonstrates limited understanding of content	→ demonstrates some understanding of content	→ demonstrates considerable understanding of content	→ demonstrates thorough understanding of content
Thinking <i>The use of critical and creative thinking skills and/or processes</i>				
The student:				
Use of planning skills (e.g., focusing research, gathering information, organizing an inquiry, asking questions, setting goals)	→ uses planning skills with limited effectiveness	→ uses planning skills with some effectiveness	→ uses planning skills with considerable effectiveness	→ uses planning skills with a high degree of effectiveness
Use of processing skills (e.g., analyzing, generating, integrating, synthesizing, evaluating, detecting point of view and bias)	→ uses processing skills with limited effectiveness	→ uses processing skills with some effectiveness	→ uses processing skills with considerable effectiveness	→ uses processing skills with a high degree of effectiveness
Use of critical/creative thinking processes (e.g., inquiry process, problem-solving process, decision-making process, research process)	→ uses critical/creative thinking processes with limited effectiveness	→ uses critical/creative thinking processes with some effectiveness	→ uses critical/creative thinking processes with considerable effectiveness	→ uses critical/creative thinking processes with a high degree of effectiveness
Communication <i>The conveying of meaning through various forms</i>				
The student:				
Expression and organization of ideas and information (e.g., clear expression, logical organization) in oral, visual, and written forms	→ expresses and organizes ideas and information with limited effectiveness	→ expresses and organizes ideas and information with some effectiveness	→ expresses and organizes ideas and information with considerable effectiveness	→ expresses and organizes ideas and information with a high degree of effectiveness

Categories	Level 1	Level 2	Level 3	Level 4
Communication <i>The conveying of meaning through various forms</i>				
The student:				
Communication for different audiences (e.g., peers, adults) and purposes (e.g., to inform, to persuade) in oral, visual, and written forms	→ communicates for different audiences and purposes with limited effectiveness	→ communicates for different audiences and purposes with some effectiveness	→ communicates for different audiences and purposes with considerable effectiveness	→ communicates for different audiences and purposes with a high degree of effectiveness
Use of conventions (e.g., conventions of form, map conventions), vocabulary, and terminology of the discipline in oral, visual, and written forms	→ uses conventions, vocabulary, and terminology of the discipline with limited effectiveness	→ uses conventions, vocabulary, and terminology of the discipline with some effectiveness	→ uses conventions, vocabulary, and terminology of the discipline with considerable effectiveness	→ uses conventions, vocabulary, and terminology of the discipline with a high degree of effectiveness
Application <i>The use of knowledge and skills to make connections within and between various contexts</i>				
The student:				
Application of knowledge and skills (e.g., Concepts, procedures, processes, and/or technologies) in familiar contexts	→ applies knowledge and skills in familiar contexts with limited effectiveness	→ applies knowledge and skills in familiar contexts with some effectiveness	→ applies knowledge and skills in familiar contexts with considerable effectiveness	→ applies knowledge and skills in familiar contexts with a high degree of effectiveness
Transfer of knowledge and skills (e.g., concepts, procedures, methodologies, technologies) to new contexts	→ transfers knowledge and skills to new contexts with limited effectiveness	→ transfers knowledge and skills to new contexts with some effectiveness	→ transfers knowledge and skills to new contexts with considerable effectiveness	→ transfers knowledge and skills to new contexts with a high degree of effectiveness
Making connections within and between various contexts (e.g., past, present, and future; environment; social; cultural; spatial; personal; multidisciplinary)	→ makes connections within and between various contexts with limited effectiveness	→ makes connections within and between various contexts with some effectiveness	→ makes connections within and between various contexts with considerable effectiveness	→ makes connections within and between various contexts with a high degree of effectiveness

The Importance of Health & Physical Education in the Curriculum

The health and physical education curriculum helps students develop an understanding of what they need in order to make a commitment to lifelong healthy, active living and develop the capacity to live satisfying, productive lives. Healthy, active living benefits both individuals and society in many ways – for example, by increasing productivity and readiness for learning, improving morale, decreasing absenteeism, reducing health-care costs, decreasing anti-social behaviour such as bullying and violence, promoting safe and healthy relationships, and heightening personal satisfaction. Research has shown a connection between increased levels of physical activity and better academic achievement, better concentration, better classroom behaviour, and more focused learning. Other benefits include improvements in psychological well-being, physical capacity, self-concept, and the ability to cope with stress. The expectations that make up this curriculum also provide the opportunity for students to develop social skills and emotional well-being. This practical, balanced approach will help students move successfully through elementary and secondary school and beyond. In health and physical education, students will learn the skills needed to be successful in life as active, socially responsible citizens.

Living Skills: Grade 5

Overall Expectations:

By the end of Grade 5, students will:

- ▶ demonstrate personal and interpersonal skills and the use of critical and creative thinking processes as they acquire knowledge and skills in connection with the expectations in the Active Living, Movement Competence, and Healthy Living strands for this grade.

Specific Expectations:

By the end of Grade 5, students will:

Personal Skills:

- ▶ use self-awareness and self-monitoring skills to help them understand their strengths and needs, take responsibility for their actions, recognize sources of stress, and monitor their own progress, as they participate in physical activities, develop movement competence, and acquire knowledge and skills related to healthy living

Interpersonal Skills:

- ▶ communicate effectively, using verbal or non-verbal means, as appropriate, and interpret information accurately as they participate in physical activities, develop movement competence, and acquire knowledge and skills related to healthy living
- ▶ apply relationship and social skills as they participate in physical activities, develop movement competence, and acquire knowledge and skills related to healthy living to help them interact positively with others, build healthy relationships, and become effective team members

Critical and Creative Thinking:

- ▶ use a range of critical and creative thinking skills and processes to assist them in making connections, planning and setting goals, analysing and solving problems, making decisions, and evaluating their choices in connection with learning in health and physical education

Active Living: Grade 5

Overall Expectations:

By the end of Grade 5, students will:

- ▶ participate actively and regularly in a wide variety of physical activities, and demonstrate an understanding of factors that encourage lifelong participation in physical activity;
- ▶ demonstrate an understanding of the importance of being physically active, and apply physical fitness concepts and practices that contribute to healthy, active living;
- ▶ demonstrate responsibility for their own safety and the safety of others as they participate in physical activities.

Specific Expectations:

By the end of Grade 5, students will:

Active Participation:

- ▶ actively participate in a wide variety of program activities, according to their capabilities, while applying behaviours that enhance their readiness and ability to take part
- ▶ demonstrate an understanding of factors that contribute to their personal enjoyment of being active, as they participate in a wide variety of individual and small-group activities and lead-up games
- ▶ identify factors that can either motivate or make it difficult for people to be physically active every day, and describe ways of overcoming obstacles to staying active

Physical Fitness:

- ▶ Daily physical activity (DPA): participate in sustained moderate to vigorous physical activity, with appropriate warm-up and cool-down activities, to the best of their ability for a minimum of twenty minutes each day
- ▶ identify the components of health-related fitness and the benefits associated with developing and maintaining each of them
- ▶ assess a specific component of their health-related fitness by noting physical responses during various physical activities, and monitor changes over time
- ▶ develop and implement personal plans relating to a specific component of health-related fitness, chosen on the basis of their personal fitness assessments and interests

Safety:

- ▶ demonstrate behaviours and apply procedures that maximize their safety and that of others during physical activity
- ▶ demonstrate an understanding of proactive measures that should be taken to minimize environmental health risks that may interfere with their safe participation in and enjoyment of outdoor physical activities

Movement Competence: Skills, Concepts, and Strategies: Grade 5

Overall Expectations:

By the end of Grade 5, students will:

- ▶ perform movement skills, demonstrating an understanding of the basic requirements of the skills and applying movement concepts as appropriate, as they engage in a variety of physical activities;
- ▶ apply movement strategies appropriately, demonstrating an understanding of the components of a variety of physical activities, in order to enhance their ability to participate successfully in those activities.

Specific Expectations:

By the end of Grade 5, students will:

Movement Skills and Concepts:

- ▶ perform controlled transfers of weight in a variety of situations involving static and dynamic balance, using changes in speed and levels, with and without equipment
- ▶ demonstrate the ability to jump in control for height or distance, using a variety of body actions
- ▶ explore different combinations of locomotor movements with and without equipment, alone and with others, moving at different speeds and levels, and using different pathways
- ▶ send and receive objects using different body parts and equipment, adjusting for speed, while applying basic principles of movement
- ▶ retain objects with and without equipment in a variety of situations while moving in different pathways around others and equipment

Movement Strategies:

- ▶ demonstrate an understanding of the components of physical activities, and apply this understanding as they participate in a variety of physical activities
- ▶ describe common features of specific categories of physical activities, and describe strategies that they found effective while participating in a variety of physical activities in different categories
- ▶ apply a variety of tactical solutions to increase their chances of success as they

Healthy Living: Grade 5

Overall Expectations:

By the end of Grade 5, students will:

- ▶ demonstrate an understanding of factors that contribute to healthy development;
- ▶ demonstrate the ability to apply health knowledge and living skills to make reasoned decisions and take appropriate actions relating to their personal health and well-being;
- ▶ demonstrate the ability to make connections that relate to health and well-being – how their choices and behaviours affect both themselves and others, and how factors in the world around them affect their own and others' health and well-being.

Specific Expectations:

By the end of Grade 5, students will:

Personal Safety and Injury Prevention

- ▶ identify people and supportive services that can assist with injury prevention, emergencies, bullying, and abusive and violent situations

Substance Use, Addictions, and Related Behaviours:

- ▶ describe the short- and long-term effects of alcohol use, and identify factors that can affect intoxication

Making Healthy Choices:

Healthy Eating

- ▶ explain how to use nutrition facts tables and ingredient lists on food labels to make healthier personal food choices

Personal Safety and Injury Prevention

- ▶ demonstrate the ability to deal with threatening situations by applying

appropriate living skills

Substance Use, Addictions, and Related Behaviours

- ▶ demonstrate the ability to apply decision-making, assertiveness, and refusal skills to deal with pressures pertaining to alcohol use or other behaviours that could later lead to addiction

Making Connections for Healthy Living:

Healthy Eating

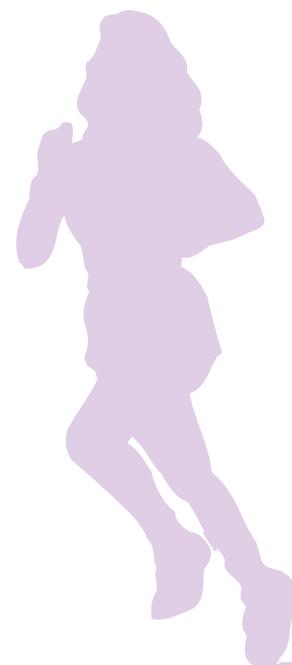
- ▶ describe how advertising and media influences affect food choices, and explain how these influences can be evaluated to make healthier choices

Personal Safety and Injury Prevention

- ▶ explain how a person's actions can affect the feelings, self-concept, emotional well-being, and reputation of themselves and others

Substance Use, Addictions, and Related Behaviours

- ▶ identify personal and social factors that can affect a person's decision to drink alcohol at different points in his or her life



Achievement Chart for Health and Physical Education - Grades 1-8

Categories	Level 1	Level 2	Level 3	Level 4
Knowledge and Understanding <i>Subject-specific content acquired in each grade (knowledge), and the comprehension of its meaning and significance (understanding)</i>				
The student:				
Knowledge of content (e.g., facts, definitions, skills, principles and strategies, safe practices and procedures)	→ demonstrates limited knowledge of content	→ demonstrates some knowledge of content	→ demonstrates considerable knowledge of content	→ demonstrates thorough knowledge of content
Understanding of content (e.g., processes, techniques, ideas, relationships between concepts)	→ demonstrates limited understanding of content	→ demonstrates some understanding of content	→ demonstrates considerable understanding of content	→ demonstrates thorough understanding of content
Thinking <i>The use of critical and creative thinking skills and/or processes</i>				
The student:				
Use of planning skills (e.g., identifying the problem, formulating questions and ideas, gathering and organizing information; developing fitness plans; selecting strategies)	→ uses planning skills with limited effectiveness	→ uses planning skills with some effectiveness	→ uses planning skills with considerable effectiveness	→ uses planning skills with a high degree of effectiveness
Use of processing skills (e.g., synthesizing information, evaluating risk and determining appropriate safety measures, revising fitness goals, detecting bias)	→ uses processing skills with limited effectiveness	→ uses processing skills with some effectiveness	→ uses processing skills with considerable effectiveness	→ uses processing skills with a high degree of effectiveness
Use of critical/creative thinking processes (e.g., goal setting, decision making, problem solving; analysing movement skills, strategizing, reflecting on learning and determining steps for improvement, critiquing)	→ uses critical/creative thinking processes with limited effectiveness	→ uses critical/creative thinking processes with some effectiveness	→ uses critical/creative thinking processes with considerable effectiveness	→ uses critical/creative thinking processes with a high degree of effectiveness
Communication <i>The conveying of meaning through various forms</i>				
The student:				
Expression and organization of ideas and information in oral, visual, and/or written forms (e.g., demonstrations, role plays, conferences, presentations, posters, pamphlets, journals)	→ expresses and organizes ideas and information with limited effectiveness	→ expresses and organizes ideas and information with some effectiveness	→ expresses and organizes ideas and information with considerable effectiveness	→ expresses and organizes ideas and information with a high degree of effectiveness
Communication for different audiences (e.g., peers, teammates, adults) and purposes (e.g., to inform, instruct, promote) and in oral, visual, and/or written forms	→ communicates for different audiences and purposes with limited effectiveness	→ communicates for different audiences and purposes with some effectiveness	→ communicates for different audiences and purposes with considerable effectiveness	→ communicates for different audiences and purposes with a high degree of effectiveness

Categories	Level 1	Level 2	Level 3	Level 4
<p>Communication <i>The conveying of meaning through various forms</i></p> <p>Use of health and physical education conventions, vocabulary, and terminology (e.g., using and interpreting signals and body language; using correct terminology to discuss parts of the body, health-related components of fitness, phases of movement [preparation, execution, follow-through]) in oral, visual and/or written forms</p>	<p>The student:</p> <p>→ uses conventions, vocabulary, and terminology with limited effectiveness</p>	<p>→ uses conventions, vocabulary, and terminology with some effectiveness</p>	<p>→ uses conventions, vocabulary, and terminology with considerable effectiveness</p>	<p>→ uses conventions, vocabulary, and terminology with a high degree of effectiveness</p>
<p>Application <i>The use of knowledge and skills to make connections within and between various contexts</i></p> <p>Application of knowledge and skills (e.g., movement skills, concepts, principles, strategies; training principles; health concepts; safe practices; personal and interpersonal skills, including teamwork, fair play, etiquette, leadership) in familiar contexts (e.g., physical activities, healthy living discussions)</p> <p>Transfer of knowledge and skills to new contexts (e.g., transfer of movement skills, strategies, and tactics from a familiar physical activity to a new activity, transfer of planning skills to contexts such as fitness, healthy eating, healthy sexuality)</p> <p>Making connections within and between various contexts (e.g., between active participation, learning in the health and physical education program, and healthy, active living; between health and physical education, other subjects, and personal experiences in and beyond school)</p>	<p>The student:</p> <p>→ applies knowledge and skills in familiar contexts with limited effectiveness</p> <p>→ applies knowledge and skills in familiar contexts with a high degree of effectiveness</p> <p>→ makes connections within and between various contexts with limited effectiveness</p>	<p>→ applies knowledge and skills in familiar contexts with some effectiveness</p> <p>→ transfers knowledge and skills to new contexts with some effectiveness</p> <p>→ makes connections within and between various contexts with some effectiveness</p>	<p>→ applies knowledge and skills in familiar contexts with considerable effectiveness</p> <p>→ transfers knowledge and skills to new contexts with considerable effectiveness</p> <p>→ makes connections within and between various contexts with considerable effectiveness</p>	<p>→ applies knowledge and skills in familiar contexts with a high degree of effectiveness</p> <p>→ transfers knowledge and skills to new contexts with a high degree of effectiveness</p> <p>→ makes connections within and between various contexts with a high degree of effectiveness</p>

Physical Literacy

Individuals who are physically literate move with competence in a wide variety of physical activities that benefit the development of the whole person.

Health Literacy

Health literacy involves the skills needed to get, understand and use information to make good decisions for health. The Canadian Public Health Association’s Expert Panel on Health Literacy defines it as the ability to access, understand, evaluate and communicate information as a way to promote, maintain and improve health in a variety of settings across the life-course.



Health and Physical Education: Strands, Subgroups, and Living Skills

Living Skills

Personal Skills

- Self-awareness and self-monitoring skills
- Adaptive, management, and coping skills

Interpersonal Skills

- Communication skills
- Relationship and social skills

Critical and Creative Thinking

- Planning
- Processing
- Drawing conclusions/presenting results
- Reflecting/evaluating

Active Living

Active Participation

- Regular participation, variety, lifelong activity
- Enjoyment, motivation

Physical Fitness

- Fitness development through daily physical activity, personal fitness plans

Safety

- Personal safety and safety of others during physical activity

Movement Competence: Skills, Concepts, Strategies

Movement Skills and Concepts

- Movement skills – stability, locomotion, manipulation
- Movement concepts – body awareness, effort, spatial awareness, relationships
- Movement principles

Movement Strategies

- Components of physical activities
- Strategies and tactics in all physical activities

Healthy Living

Understanding Health Concepts

- Understanding the factors that contribute to healthy growth and development

Making Healthy Choices

- Applying health knowledge, making decisions about personal health and well-being

Making Connections for Healthy Living

- Making connections to link personal health and well-being to others and the world around them

Expectations in the Healthy Living strand focus on the following four health topics. Positive behaviours in relation to each topic area contribute to overall mental health and emotional well-being.

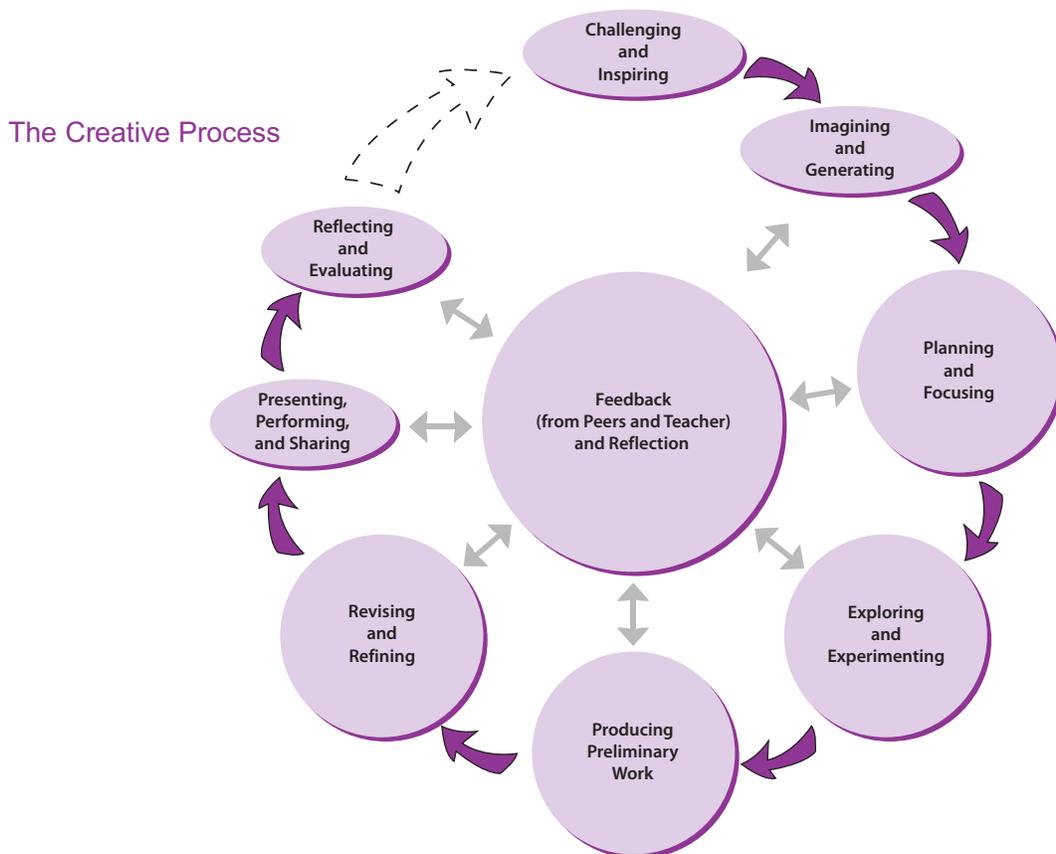
- Healthy Eating
- Personal Safety and Injury Prevention
- Substance Use, Addictions, and Related Behaviours
- Human Development and Sexual Health

Mental Health and Emotional Well-being

The Importance of the Arts

Education in the arts is essential to students' intellectual, social, physical, and emotional growth and well-being. Experiences in the arts – in dance, drama, music, and visual arts – play a valuable role in helping students to achieve their potential as learners and to participate fully in their community and in society as a whole. The arts provide a natural vehicle through which students can explore and express themselves and through which they can discover and interpret the world around them. Participation in the arts contributes in important ways to students' lives and learning – it involves intense engagement, development of motivation and confidence, and the use of creative and

dynamic ways of thinking and knowing. It is well documented that the intellectual and emotional development of children is enhanced through study of the arts. Through the study of dance, drama, music, and visual arts, students develop the ability to think creatively and critically. The arts nourish and stimulate the imagination, and provide students with an expanded range of tools, techniques, and skills to help them gain insights into the world around them and to represent their understandings in various ways. Study of the arts also provides opportunities for differentiation of both instruction and learning environments.



Achievement Chart - The Arts, Grades 1–8

Categories	Level 1	Level 2	Level 3	Level 4
Knowledge and Understanding <i>Subject-specific content acquired in each grade (knowledge), and the comprehension of its meaning and significance (understanding)</i>				
The student:				
Knowledge of content <i>(e.g., facts, genres, terms, definitions, techniques, elements, principles, forms, structures, conventions)</i>	→ demonstrates limited knowledge of content	→ demonstrates some knowledge of content	→ demonstrates considerable knowledge of content	→ demonstrates thorough knowledge of content
Understanding of content <i>(e.g., concepts, ideas, procedures, processes, themes, relationships among elements, informed opinions)</i>	→ demonstrates limited understanding of content	→ demonstrates some understanding of content	→ demonstrates considerable understanding of content	→ demonstrates thorough understanding of content
Thinking <i>The use of critical and creative thinking skills and/or processes</i>				
The student:				
Use of planning skills <i>(e.g., formulating questions, generating ideas, gathering information, focusing research, outlining, organizing an arts presentation or project, brainstorming/ bodystorming, blocking, sketching, using visual organizers, listing goals in a rehearsal log, inventing notation)</i>	→ uses planning skills with limited effectiveness	→ uses planning skills with some effectiveness	→ uses planning skills with considerable effectiveness	→ uses planning skills with a high degree of effectiveness
Use of processing skills <i>(e.g., analysing, evaluating, inferring, interpreting, editing, revising, refining, forming conclusions, detecting bias, synthesizing)</i>	→ uses processing skills with limited effectiveness	→ uses processing skills with some effectiveness	→ uses processing skills with considerable effectiveness	→ uses processing skills with a high degree of effectiveness
Use of critical/creative thinking processes <i>(e.g., creative and analytical processes, design process, exploration of the elements, problem solving, reflection, elaboration, oral discourse, evaluation, critical literacy, metacognition, invention, critiquing, reviewing)</i>	→ uses critical/creative thinking processes with limited effectiveness	→ uses critical/creative thinking processes with some effectiveness	→ uses critical/creative thinking processes with considerable effectiveness	→ uses critical/creative thinking processes with a high degree of effectiveness

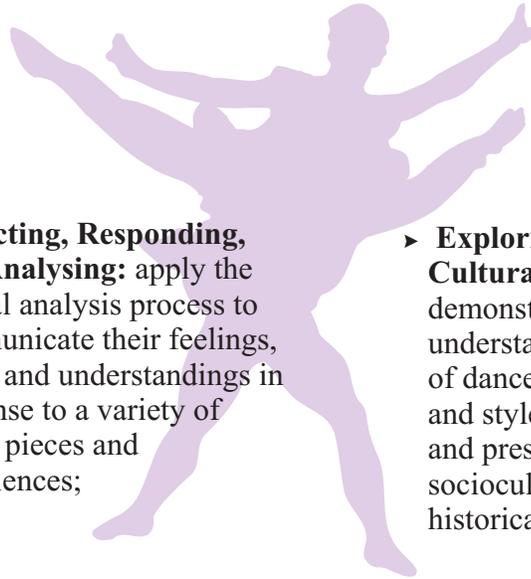
Categories	Level 1	Level 2	Level 3	Level 4
Communication <i>The conveying of meaning through various forms</i>				
The student:				
Expression and organization of ideas and understandings in art forms (<i>dance, drama, music, and the visual arts</i>), including media/multimedia forms (<i>e.g., expression of ideas and feelings using visuals, movements, the voice, gestures, phrasing, techniques</i>), and in oral and written forms (<i>e.g., clear expression and logical organization in critical responses to art works and informed opinion pieces</i>)	→ expresses and organizes ideas and understandings with limited effectiveness	→ expresses and organizes ideas and understandings with some effectiveness	→ expresses and organizes ideas and understandings with considerable effectiveness	→ expresses and organizes ideas and understandings with a high degree of effectiveness
Communication for different audiences (<i>e.g., peers, adults, younger children</i>) and purposes through the arts (<i>e.g., drama presentations, visual arts exhibitions, dance and music performances</i>) and in oral and written forms (<i>e.g., debates, analyses</i>)	→ communicates for different audiences and purposes with limited effectiveness	→ communicates for different audiences and purposes with some effectiveness	→ communicates for different audiences and purposes with considerable effectiveness	→ communicates for different audiences and purposes with a high degree of effectiveness
Use of conventions in dance, drama, music, and the visual arts (<i>e.g., allegory, narrative or symbolic representation, style, articulation, drama conventions, choreographic forms, movement vocabulary</i>) and arts vocabulary and terminology in oral and written forms	→ uses conventions, vocabulary, and terminology of the arts with limited effectiveness	→ uses conventions, vocabulary, and terminology of the arts with some effectiveness	→ uses conventions, vocabulary, and terminology of the arts with considerable effectiveness	→ uses conventions, vocabulary, and terminology of the arts with a high degree of effectiveness
Application <i>The use of knowledge and skills to make connections within and between various contexts</i>				
The student:				
Application of knowledge and skills (<i>e.g., performance skills, composition, choreography, elements, principles, processes, technologies, techniques, strategies, conventions</i>) in familiar contexts (<i>e.g., guided improvisation, performance of a familiar work, use of familiar forms</i>)	→ applies knowledge and skills in familiar contexts with limited effectiveness	→ applies knowledge and skills in familiar contexts with some effectiveness	→ applies knowledge and skills in familiar contexts with considerable effectiveness	→ applies knowledge and skills in familiar contexts with a high degree of effectiveness
Transfer of knowledge and skills (<i>e.g., concepts, strategies, processes, techniques</i>) to new contexts (<i>e.g., a work requiring stylistic variation, an original composition, student-led choreography, an interdisciplinary or multidisciplinary project</i>)	→ transfers knowledge and skills to new contexts with limited effectiveness	→ transfers knowledge and skills to new contexts with some effectiveness	→ transfers knowledge and skills to new contexts with considerable effectiveness	→ transfers knowledge and skills to new contexts with a high degree of effectiveness
Making connections within and between various contexts (<i>e.g., between the arts; between the arts and personal experiences and the world outside the school; between cultural and historical, global, social, and/or environmental contexts; between the arts and other subjects</i>)	→ makes connections within and between various contexts with limited effectiveness	→ makes connections within and between various contexts with some effectiveness	→ makes connections within and between various contexts with considerable effectiveness	→ makes connections within and between various contexts with a high degree of effectiveness

Dance: Grade 5

Overall Expectations

By the end of Grade 5, students will:

- ▶ **Creating and Presenting:** apply the creative process to the composition of movement sequences and short dance pieces, using the elements of dance to communicate feelings and ideas;
- ▶ **Reflecting, Responding, and Analysing:** apply the critical analysis process to communicate their feelings, ideas, and understandings in response to a variety of dance pieces and experiences;
- ▶ **Exploring Forms and Cultural Contexts:** demonstrate an understanding of a variety of dance forms, traditions, and styles from the past and present, and their sociocultural and historical contexts.

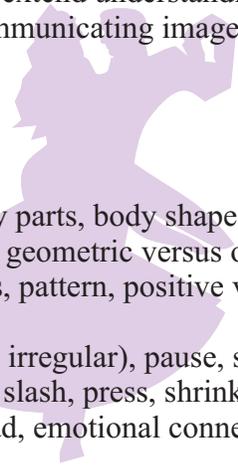


Dance: Fundamental Concepts for Grade 5

Students in Grade 5 will develop or extend understanding of the following concepts through participation in various dance experiences (e.g., communicating images and ideas through movement), with particular emphasis on relationship.

ELEMENTS OF DANCE

- **body:** body awareness, use of body parts, body shapes, locomotor and non-locomotor movements, body bases, symmetry versus asymmetry, geometric versus organic shape, angular versus curved shape
- **space:** levels, pathways, directions, pattern, positive versus negative space, various group formations, proximity of dancers to one another
- **time:** tempo, rhythm (e.g., regular, irregular), pause, stillness, with music, without music, duration
- **energy:** effort, force, quality (e.g., slash, press, shrink, open)
- **relationship:** meet/part, follow/lead, emotional connections between dancers, groupings

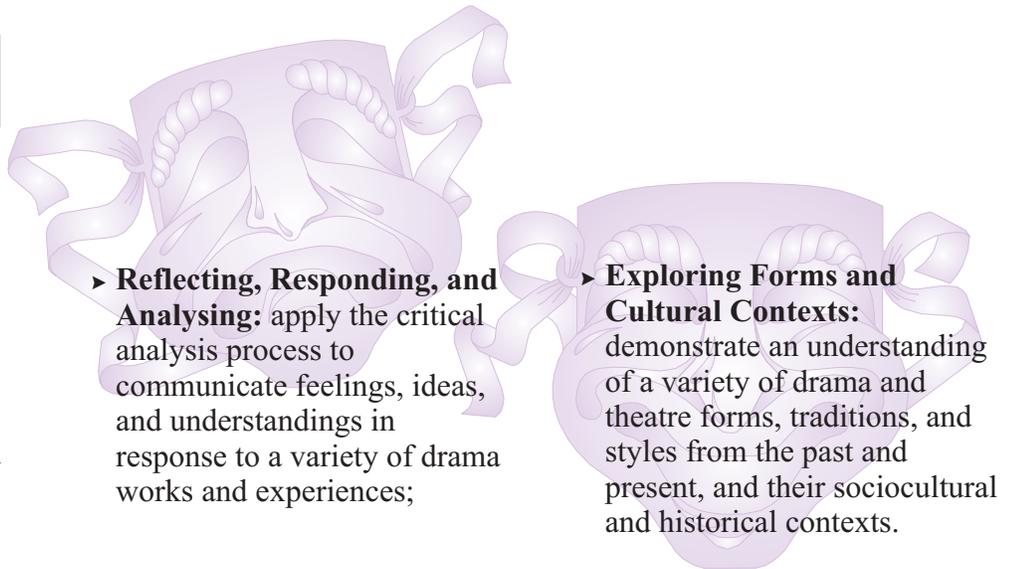


Drama: Grade 5

Overall Expectations:

By the end of Grade 5, students will:

- ▶ **Creating and Presenting:** apply the creative process to process drama and the development of drama works, using the elements and conventions of drama to communicate feelings, ideas, and stories;
- ▶ **Reflecting, Responding, and Analysing:** apply the critical analysis process to communicate feelings, ideas, and understandings in response to a variety of drama works and experiences;
- ▶ **Exploring Forms and Cultural Contexts:** demonstrate an understanding of a variety of drama and theatre forms, traditions, and styles from the past and present, and their sociocultural and historical contexts.



Drama: Fundamental Concepts for Grade 5

Students in Grade 5 will develop or extend understanding of the following concepts through participation in various drama experiences.

ELEMENTS OF DRAMA

- **role/character:** adopting a variety of roles; considering both the inner and outer life in developing a character; sustaining familiar and unfamiliar roles; varying position (e.g., full front, quarter, profile, full back)
- **relationship:** developing and analysing a character in terms of his/her relationships with other characters
- **time and place:** establishing a clear setting (e.g., using simple objects and props to represent time and place)
- **tension:** using audio, visual, and/or technological aids and stage effects to heighten suspense and engage the audience
- **focus and emphasis:** using drama conventions to reveal/communicate key emotions and motivations to the audience and/or to draw audience attention to specific aspects of the drama

Music: Grade 5

Overall Expectations:

By the end of Grade 5, students will:

- ▶ **Creating and Performing:** apply the creative process to create and perform music for a variety of purposes, using the elements and techniques of music;
- ▶ **Reflecting, Responding, and Analysing:** apply the critical analysis process to communicate their feelings, ideas, and understandings in response to a variety of music and musical experiences;
- ▶ **Exploring Forms and Cultural Contexts:** demonstrate an understanding of a variety of musical genres and styles from the past and present, and their sociocultural and historical contexts.

Music: Fundamental Concepts for Grade 5

In Grade 5, students will build on their knowledge of the elements of music and related musical concepts that were introduced in Grades 1 to 4. Students will develop understanding of musical concepts through participation in musical experiences that involve listening, creating, and performing (e.g., singing, moving, playing instruments).

ELEMENTS OF MUSIC

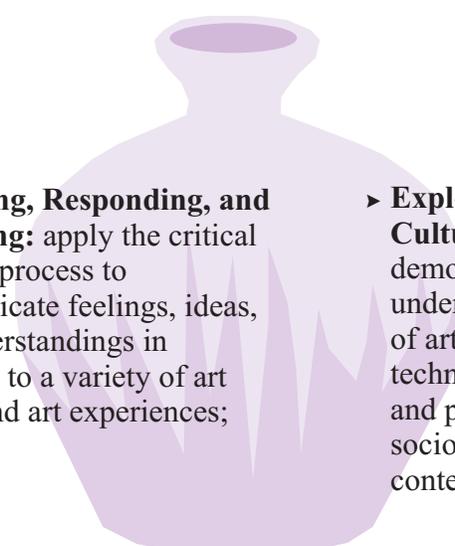
- **duration:** dotted quarter note followed by an eighth note (oral prompt: “tam-ti”); dotted eighth note and sixteenth note (oral prompt: “tim-ka”); rhythms, including those with eighth notes (“ti-ti”) and sixteenth notes (“tika-tika”), in various combinations (e.g., “tika-ti, ti-tika, ti-ti, ta”); metre (oral count, with primary emphasis on “one” and secondary emphasis on “two”: “**one-and-a-two-and-a**”)
- **pitch:** key signatures in the music they perform (e.g., D major, G minor), clefs used for any instruments they play
- **dynamics and other expressive controls:** dynamics and articulation encountered in music listened to, sung, and played, and their signs
- **timbre:** tone colour for particular purposes (e.g., use of trumpets for a fanfare, flutes for depicting birds, various instruments for creating specific moods)
- **texture/harmony:** part singing (homophonic or polyphonic), chord progressions using I and V
- **form:** compositions in four or more sections (e.g., AABA, ABAC [alternation between a chorus, A, and improvisations, B and C], rondo [e.g., ABACADA])

Visual Arts: Grade 5

Overall Expectations:

By the end of Grade 5, students will:

- ▶ **Creating and Presenting:** apply the creative process to produce a variety of two- and three-dimensional art works, using elements, principles, and techniques of visual arts to communicate feelings, ideas, and understandings;
- ▶ **Reflecting, Responding, and Analysing:** apply the critical analysis process to communicate feelings, ideas, and understandings in response to a variety of art works and art experiences;
- ▶ **Exploring Forms and Cultural Contexts:** demonstrate an understanding of a variety of art forms, styles, and techniques from the past and present, and their sociocultural and historical contexts.



Visual Arts: Fundamental Concepts for Grade 5

In addition to the concepts introduced in Grades 1 to 4, students in Grade 5 will develop understanding of the following concepts through participation in a variety of hands-on, open-ended visual arts experiences.

ELEMENTS OF DESIGN

Students will develop understanding of all elements of design.

- **line:** linear and curved hatching and cross-hatching that add a sense of depth to shape and form; gesture drawings; chenille stick sculptures of figures in action; implied lines for movement and depth
- **shape and form:** symmetrical and asymmetrical shapes and forms in front and image; positive and negative shapes that occur in the environment; convex, concave, non-objective shapes
- **space:** shading and cast shadows that create the illusion of depth; atmospheric perspective; microscopic and telescopic views
- **colour:** complementary colours, hue, intensity (e.g., dulling, or neutralizing, colour intensity by mixing the colour with a small amount of its complementary hue)
- **texture:** textures created with a variety of tools, materials, and techniques; patterning
- **value:** gradations of value to create illusion of depth, shading

PRINCIPLES OF DESIGN

Students will develop understanding of all principles of design (that is, contrast, repetition and rhythm, variety, emphasis, proportion, balance, unity and harmony, and movement), but the focus in Grade 5 will be on proportion.

- **proportion:** the relationship of the size and shape of the parts of a figure to the whole figure; the scale of one object compared to its surroundings, with indications of how close and how large the object is (e.g., figures with childlike proportions that are approximately “five heads high” and adult figures that are approximately “seven or eight heads high”; caricature; use of improbable scale for imaginary settings and creatures)

