Ontario

Ministry of Education

Curriculum Expectations
GRADE 8

for

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

2007

Oral Communication

Overall Expectations

8e1 1. listen in order to understand and respond appropriately in a variety of situations for a variety of purposes;

8e2 2. use speaking skills and strategies appropriately to communicate with different audiences for a variety of purposes;

8e3 3. reflect on and identify their strengths as listeners and speakers, areas for improvement, and the strategies they found most helpful in oral communication situations.

1. Listening to Understand

8e4 Purpose

1.1 identify a range of purposes for listening in a variety of situations, formal and informal, and set goals appropriate to specific listening tasks *(e.g., to evaluate the effectiveness of the arguments on both sides of a class debate on an environmental, social, or global issue; to respond to feedback in peer conferences and student/teacher conferences)*

8e5 Active Listening Strategies

1.2 demonstrate an understanding of appropriate listening behaviour by adapting active listening strategies to suit a wide variety of situations, including work in groups *(e.g., follow the conversation and make relevant contributions in a group discussion; express interest in what is being said by commenting and questioning)*

8e6 Comprehension Strategies

1.3 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 increasingly complex and challenging oral texts *(e.g., use background knowledge about the structure of oral texts such as debates, interviews, speeches, monologues, lectures, and plays to make predictions and identify important ideas while listening; ask questions for clarification or further information; use a range of note-taking strategies to keep track of or summarize important points; use self-questioning to monitor understanding of what is being said)*

8e7 Demonstrating Understanding

1.4 demonstrate an understanding of the information and ideas in increasingly complex and difficult oral texts in a variety of ways *(e.g., compare views about an oral text with two other classmates and prepare a joint summary to present to the class; cite details from an oral text to support their opinions about it in a small-group discussion; use visual art, music, or drama to represent important ideas in an oral text)*

8e8 Making Inferences/Interpreting Texts

1.5 develop and explain interpretations of oral texts using the language of the text and oral and visual cues to support their interpretations

Teacher prompt: "Why might different audiences interpret the same oral text in different ways? Give examples to support your opinion."

8e9 Extending Understanding

1.6 extend understanding of oral texts, including increasingly complex or difficult texts, by connecting, comparing, and contrasting the ideas and information in them to their own knowledge, experience, and insights; to other texts, including print and visual texts; and to the world around them *(e.g., respond in role as a character from an oral text while being interviewed by another student; discuss similarities and differences between oral and print texts on the same topic, focusing on specific elements such as the accuracy and relevance of information; debate the wisdom of the choices made by a historical personage depicted in an oral biography, based on ideas about what their own choices might have been)*

8e10 Analysing Texts

1.7 analyse a variety of complex or challenging oral texts in order to identify the strategies that have been used to inform, persuade, or entertain, and evaluate the effectiveness of those strategies *(e.g., compare the tone and the ideas emphasized in speeches about non-smoking regulations by a tobacco company representative and a person with asthma and suggest how each approach would influence an audience)*

8e11 Point of View

1.8 explain what the use of irony or satire in an oral text reveals about the speaker 's purpose and perspective

Teacher prompts: "What cues help you to recognize the use of irony or satire in a text?" "How does recognizing irony or satire help you to understand what is being said?"

8e12 Presentation Strategies

1.9 identify a wide variety of presentation strategies used in oral texts, evaluate their effectiveness, and suggest other strategies that might have been as effective or more so *(e.g., compare two oral presentations, with a focus on the effectiveness of the presentation strategies used by each speaker)*

Teacher prompt: "Did the speakers use facial expressions, vocal effects, and body language appropriately? Did the use of these strategies make the message more convincing?"

2. Speaking to Communicate

8e13 Purpose

2.1 identify a range of purposes for speaking in a variety of situations, both straightforward and more complex, and explain how the purpose and intended audience might influence the choice of speaking strategies *(e.g., to introduce a speaker; to support the resolution in a debate; to dramatize a favourite poem; to explain a complex procedure to an individual or group; to work towards the solution to a problem with a partner)*

8e14 Interactive Strategies

2.2 demonstrate an understanding of appropriate speaking behaviour in most situations, using a variety of speaking strategies and adapting them to suit the purpose and audience *(e.g., paraphrase different points of view on an issue to clarify alternative perspectives; affirm the contributions of others before responding; avoid making highly personal remarks in public or in formal situations)*

8e15 Clarity and Coherence

2.3 communicate in a clear, coherent manner, using a structure and style appropriate to the purpose, the subject matter, and the intended audience *(e.g., combine logic with an appeal to emotion in a charity fund-raising speech; use a cause-andeffect structure in a report on the rise of a political movement or the emergence of a contentious Aboriginal issue)*

8e16 Appropriate Language

2.4 use appropriate words, phrases, and terminology from the full range of their vocabulary, including inclusive and non-discriminatory language, and a range of stylistic devices, to communicate their meaning effectively and engage the interest of their intended audience *(e.g., use imagery, figurative language such as similes and analogies, and other stylistic elements such as idioms and onomatopoeia to evoke a particular mood in a dramatic monologue or an appeal for support)*

8e17 Vocal Skills and Strategies

2.5 identify a range of vocal effects, including tone, pace, pitch, volume, and a variety of sound effects, and use them appropriately and with sensitivity towards cultural differences to communicate their meaning *(e.g., use changes in pitch to differentiate voices in a storytelling session; use tone and volume to clarify implied messages in a rap poem)*

8e18 Non-Verbal Cues

2.6 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 *(e.g., rehearse and use hand gestures and increased volume to emphasize points during a formal presentation)*

8e19 Visual Aids

2.7 use a variety of appropriate visual aids *(e.g., photographs, multimedia, diagrams, graphs, charts, costumes, props, artefacts)* to support and enhance oral presentations *(e.g., use a chart to clarify the order of events in a report about a scientific breakthrough; use a video clip from an animated cartoon to show how sound is used to complement the image)*

3. Reflecting on Oral Communication Skills and Strategies

8e20 Metacognition

3.1 identify 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

Teacher prompts: "What listening strategies help you to contribute effectively in a group discussion?" "What questions do you ask yourself to check whether you are understanding what is being said?" "Can you identify the most effective elements in your oral presentation? How do you know they were effective?" "What would you do differently next time?"

8e21 Interconnected Skills

3.2 identify how their skills as viewers, representers, readers, and writers help them improve their oral communication skills

Teacher prompt: "How does your experience of creating media texts help you understand oral texts?"

Reading

Overall Expectations

8e22 1. read and demonstrate an understanding of a variety of literary, graphic, and informational texts, using a range of strategies to construct meaning;

8e23 2. recognize a variety of text forms, text features, and stylistic elements and demonstrate understanding of how they help communicate meaning;

8e24 3. use knowledge of words and cueing systems to read fluently;

8e25 4. reflect on and identify their strengths as readers, areas for improvement, and the strategies they found most helpful before, during, and after reading.

1. Reading for Meaning

8e26 Variety of Texts

1.1 read a wide variety of increasingly complex or difficult texts from diverse cultures, including literary texts *(e.g., short stories, novels, poetry, essays, science fiction, memoirs, scripts, satire)*, graphic texts *(e.g., graphs and graphic organizers, charts and tables, surveys, maps, spreadsheets)*, and informational texts *(e.g., essays, Canadian and global print and online sources, electronic texts, textbooks, dictionaries, thesauri, websites, transcripts)*

8e27 Purpose

1.2 identify a variety of purposes for reading and choose increasingly complex or difficult reading materials appropriate for those purposes (*e.g., several online or print articles by the same author to identify consistency or change in the author 's point of view; websites for information on a topic from different sources; stories from different cultures, including Aboriginal cultures, to compare treatments of similar themes)*

8e28 Comprehension Strategies

1.3 identify a variety of reading comprehension strategies and use them appropriately before, during, and after reading to understand increasingly complex or difficult texts *(e.g., activate prior knowledge on a topic through dialogue or by developing mind maps; use visualization and comparisons with images in other texts or media to clarify impressions of characters, scenes, or concepts; ask questions to monitor and clarify understanding; identify important ideas; synthesize ideas to broaden understanding)*

8e29 Demonstrating Understanding

1.4 demonstrate understanding of increasingly complex and difficult texts by summarizing important ideas and explaining how the details support the main idea *(e.g., theme or argument and supporting evidence in reviews, essays, plays, poems; key information and related data in public documents, online and print reference articles, manuals, surveys, graphs, tables and charts, websites, transcripts)*

8e30 Making Inferences/Interpreting Texts

1.5 develop and explain interpretations of increasingly complex or difficult texts using stated and implied ideas from the texts to support their interpretations

Teacher prompt: "How do the stated and unstated messages in the dialogue between these characters complicate the plot of this story? What details in the dialogue support your interpretation?"

8e31 Extending Understanding

1.6 extend understanding of texts, including increasingly complex or difficult texts, by connecting the ideas in them to their own knowledge, experience, and insights, to other texts, and to the world around them

Teacher prompts: "Do you have knowledge or experiences that affect the way you interpret the author's message?" "How does the author's approach differ from the approach in other articles you have read on this topic?"

8e32 Analysing Texts

1.7 analyse a variety of texts, including complex or difficult texts, and explain how the various elements in them contribute to meaning and influence the reader's reaction *(e.g., narrative:* rising action holds attention and creates suspense; *report on an investigation:* the opening paragraph tells the reader about the purpose, goals, and audience for the report*)*

Teacher prompts: "Why does the author spend so much time describing the preparation for the race?" "How does the information in the opening paragraph help you understand the rest of the report?"

8e33 Responding to and Evaluating Texts

1.8 evaluate the effectiveness of a text based on evidence taken from that text

Teacher prompts: "Were the instructions for doing the experiment clear and easy to follow? Why or why not?" "Were the author's arguments well supported by credible evidence? Did the arguments make sense? Why, or why not?" "Identify three uses of imagery in the poem and explain how they help the poet communicate the theme effectively."

8e34 Point of View

1.9 identify the point of view presented in texts, including increasingly complex or difficult texts; give evidence of any biases they may contain; and suggest other possible perspectives *(e.g., determine whether an environmental argument should include an economic perspective or an economic argument should include an environmental perspective)*

Teacher prompt: "How will the addition of another perspective affect the impact or appeal of the text?"

2. Understanding Form and Style

8e35 Text Forms

2.1 analyse a variety of text forms and explain how their particular characteristics help communicate meaning, with a focus on literary texts such as a memoir *(e.g., the author's personality and/or special experience of the subject are an important part of the narrative, even if the author is not the subject of the narrative)*, graphic texts such as a map *(e.g., the different colours for land and water help readers understand what geographical features they are looking at)*, and informational texts such as a magazine article *(e.g., sidebars allow minor themes to be developed in detail without interrupting the main narrative)*

8e36 Text Patterns

2.2 analyse increasingly complex texts to identify different types of organizational patterns used in them and explain how the patterns help communicate meaning *(e.g., a "before-and-after"comparison in an advertisement; time order and cause and effect in an online magazine or newspaper article)*

8e37 Text Features

2.3 identify a variety of text features and explain how they help communicate meaning *(e.g., tree diagrams, tables, endnotes, and "Works Cited"or "References" lists help readers locate information and understand its context)*

Teacher prompt: "What do the types of sources in the 'References' list tell you about the author's research?"

8e38 Elements of Style

2.4 identify a range of elements of style – including symbolism, irony, analogy, metaphor, and other rhetorical devices – and explain how they help communicate meaning and enhance the effectiveness of texts (*e.g., the use of dramatic irony, in which the audience understands the implications of words or actions better than the characters do themselves, can create humour or a sense of foreboding)*

3. Reading With Fluency

8e39 Reading Familiar Words

3.1 automatically read and understand most words in a wide range of reading contexts *(e.g., words from grade-level texts; terminology used in discussions and posted in the classroom; words from shared-, guided-, and independent-reading texts, electronic texts, and resource material used in the curriculum subject areas)*

8e40 Reading Unfamiliar Words

3.2 predict the meaning of and rapidly solve unfamiliar words using different types of cues, including:
- semantic (meaning) cues *(e.g., base words, prefixes, suffixes, phrases, sentences, and visuals that activate existing knowledge of oral and written language)* ;
- syntactic (language structure) cues *(e.g., word order and the relationship between words, language patterns, punctuation)* ;
- graphophonic (phonological and graphic) cues *(e.g., familiar words within larger words, syllables within larger words, similarities between words with known spelling patterns and unknown words)*

Teacher prompt: "Read to the end of the paragraph and see if the context will help you solve the word. Is the word essential to your understanding? If so, reread and see if you can solve the word by…"

8e41 Reading Fluently

3.3 read appropriate texts with expression and confidence, adjusting reading strategies and reading rate to match the form and purpose *(e.g., orally read to entertain a younger class, using suitable emphasis, intonation, and phrasing)*

4. Reflecting on Reading Skills and Strategies

8e42 Metacognition

4.1 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/reflective journal, how they can use these and other strategies to improve as readers

Teacher prompts: "What strategies do you use most consistently to help you understand a new text?" "What types of questions do you ask yourself to help you monitor your reading?" "What 'fix-up' strategies do you use when you don't understand?" "What strategies do you use confidently and effectively?"

8e43 4.2 explain, in conversation with the teacher and/or peers or in a reader's notebook/reflective journal, how their skills in listening, speaking, writing, viewing, and representing help them make sense of what they read

Teacher prompts: "Did watching the television program about space exploration help you when you were reading the newspaper reports of the space probe?" "How does creating online texts help you read electronic texts?" "What lessons have you learned as a writer/listener that will make you a better reader?"

Writing

Overall Expectations

8e44 1. generate, gather, and organize ideas and information to write for an intended purpose and audience;

8e45 2. draft and revise their writing, using a variety of informational, literary, and graphic forms and stylistic elements appropriate for the purpose and audience;

8e46 3. use editing, proofreading, and publishing skills and strategies, and knowledge of language conventions, to correct errors, refine expression, and present their work effectively;

8e47 4. 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.

1. Developing and Organizing Content

8e48 Purpose and Audience

1.1 identify the topic, purpose, and audience for more complex writing forms *(e.g., a personal memoir about the school experience to share with classmates, family, and friends at graduation; a report on a topic of current interest in the style of a newspaper article, including headlines, for a school or community newspaper; a campaign flyer or brochure to promote a candidate for school government)*

8e49 Developing Ideas

1.2 generate ideas about more challenging topics and identify those most appropriate to the purpose

8e50 Research

1.3 gather information to support ideas for writing, using a variety of strategies and a wide range of print and electronic sources *(e.g., produce a plan and timeline for carrying out research tasks; interview people with knowledge of the topic; identify and use graphic and multimedia resources; record sources used and information gathered in a form that makes it easy to understand and retrieve)*

8e51 Classifying Ideas

1.4 sort and classify ideas and information for their writing in a variety of ways that allow them to manipulate information and see different combinations and relationships in their data *(e.g., by using electronic graphic organizers, tables, charts)*

8e52 Organizing Ideas

1.5 identify and order main ideas and supporting details and group them into units that could be used to develop a summary, a debate, or a report of several paragraphs, using a variety of strategies *(e.g., making jot notes; making sketchboard outlines of a procedure or series of events)* and organizational patterns *(e.g., combined/multiple orders such as order of importance and cause and effect)*

8e53 Review

1.6 determine whether the ideas and information they have gathered are relevant, appropriate, and sufficiently specific for the purpose, and do more planning and research if necessary *(e.g., check for depth and breadth of coverage of the topic)*

2. Using Knowledge of Form and Style in Writing

8e54 Form

2.1 write complex texts of a variety of lengths using a wide range of forms *(e.g., a memoir of a significant Canadian; a report comparing the economies of two nations and explaining how a new industry might affect each nation's economy; briefing notes for an oral debate outlining both sides of an argument, including appeals to both logic and emotion; a narrative in the style of a particular author, adding to or extending a text by that author; an original satirical, science-fiction, or realistic fiction piece modelled on the structures and conventions of the genre; a free verse or narrative poem, or a limerick)*

8e55 Voice

2.2 establish a distinctive voice in their writing appropriate to the subject and audience, *(e.g., use emotive language to persuade the audience to share their feelings, and explain the effect they think it will have on the audience)*

8e56 Word Choice

2.3 regularly use vivid and/or figurative language and innovative expressions in their writing (*e.g., adjective phrases:* The car with the fluorescent red racing stripe; *adverb phrases:* He walked with the gait of a sailor; *specialized vocabulary and terminology; analogies and idioms)*

Teacher prompt: "Identify three language choices you have made and explain the effect they will have on a reader."

8e57 Sentence Fluency

2.4 vary sentence types and structures for different purposes *(e.g., to alter the pace or mood)*, with a focus on using a range of relative pronouns *(e.g., who, which)*, subordinate conjunctions *(e.g., whenever, because, although)* , and both the active and passive voice

8e58 Point of View

2.5 identify their point of view and other possible points of view, evaluate other points of view, and find ways to respond to other points of view, if appropriate

Teacher prompt: "How can you address in your writing the questions that would come from others who hold a different point of view?"

8e59 Preparing for Revision

2.6 identify elements in their writing that need improvement, selectively using feedback from the teacher and peers, with a focus on depth of content and appropriateness of tone

Teacher prompts: "Are there any key ideas that are missing or need more explanation?" "Does your writing have an identifiable tone *(e.g., sincerity, humour, horror, irony, pathos)*? Is the tone appropriate to the subject matter? Does it accurately reflect your point of view?"

8e60 Revision

2.7 make revisions to improve the content, clarity, and interest of their written work, using a variety of strategies *(e.g., use sticky notes while rereading to record questions and ideas; cut and paste to improve logic of organization; add or substitute words and phrases, including vocabulary from other subject areas; use idioms, figurative language, and rhetorical devices such as analogy to achieve particular effects; adjust sentence length, type, and complexity to suit the audience and purpose; use patterns such as repetition with variations to emphasize important points and hold the attention of the audience)*

Teacher prompt: "Could you use two different sentence lengths and patterns to highlight the two points of view in your argument?"

8e61 Producing Drafts

2.8 produce revised draft pieces of writing to meet identified criteria based on the expectations *(e.g., adequate development of information and ideas, logical organization, appropriate use of form and style, appropriate use of conventions)*

3. Applying Knowledge of Language Conventions and Presenting Written Work Effectively

8e62 Spelling Familiar Words

3.1 spell familiar words correctly *(e.g., words from their oral vocabulary, anchor charts, and shared-, guided-, and independent-reading texts; words used regularly in instruction across the curriculum)*

8e63 Spelling Unfamiliar Words

3.2 spell unfamiliar words using a variety of strategies that involve understanding sound-symbol relationships, word structures, word meanings, and generalizations about spelling *(e.g., orally emphasize differences in easily confused words:* affect/effect, technicality/technically*; compare complicated words to words with known letter patterns; use knowledge of the history of a word to help spell it:* sheep herder/shepherd*; use knowledge of familiar words to spell technical terms)*

8e64 Vocabulary

3.3 confirm spellings and word meanings or word choice using a wide variety of resources appropriate for the purpose *(e.g., locate entry words, pronunciation keys, prefixes, and information about word origins in online and print dictionaries, including thematic dictionaries such as a dictionary of synonyms, antonyms, and homonyms, a science dictionary)*

8e65 Punctuation

3.4 use punctuation appropriately to communicate their intended meaning in more complex writing forms, including forms specific to different subjects across the curriculum, with a focus on the use of: commas to separate introductory phrases from the main part of a sentence and to separate words, phrases, and clauses in a series; quotation marks to distinguish words being discussed as words and to indicate titles; ellipses (…) and dashes to indicate sentence breaks, ambiguities, or parenthetical statements

8e66 Grammar

3.5 use parts of speech correctly to communicate their meaning clearly, with a focus on subject/verb agreement and the use of nouns, pronouns, adjectives, adverbs, and prepositions

8e67 Proofreading

3.6 proofread and correct their writing using guidelines developed with peers and the teacher *(e.g., an editing checklist specific to the writing task)*

8e68 Publishing

3.7 use a wide range of appropriate elements of effective presentation in the finished product, including print, script, different fonts, graphics, and layout *(e.g., use legible printing and cursive writing; use an imaginative text layout, drawings, and a table of contents in a class poetry anthology for the school library; use a spreadsheet to display detailed specific information)*

8e69 Producing Finished Works

3.8 produce pieces of published work to meet identified criteria based on the expectations *(e.g., adequacy of information and ideas, logic and effectiveness of organization, effective use of form and stylistic elements, appropriate use of conventions, effective presentation)*

4. Reflecting on Writing Skills and Strategies

8e70 Metacognition

4.1 identify a variety of strategies they used before, during, and after writing, explain which ones were most helpful, and suggest future steps they can take to improve as writers *(e.g., use a three-column reflection journal to monitor the writing process:* What I learned/How I learned it/How I can use it*)*

Teacher prompt: "Explain how you used your writer's notebook/journal to help you identify your strengths as a writer and your next steps for writing."

8e71 Interconnected Skills

4.2 describe how their skills in listening, speaking, reading, viewing, and representing help in their development as writers

Teacher prompts: "How does assuming the role of the reader of your own writing help you revise your writing?" "How do you think listening to oral texts has helped you become a better writer?" "How can reading texts from different cultures improve your writing?"

8e72 Portfolio

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

Media Literacy

Overall Expectations

8e73 1. demonstrate an understanding of a variety of media texts;

8e74 2. identify some media forms and explain how the conventions and techniques associated with them are used to create meaning;

8e75 3. create a variety of media texts for different purposes and audiences, using appropriate forms, conventions, and techniques;

8e76 4. 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.

1. Understanding Media Texts

8e77 Purpose and Audience

1.1 explain how a variety of media texts address their intended purpose and audience *(e.g., this stage production based on a popular novel uses music and lighting to enhance the original and appeal to its fans; this commercial for a sports car uses fast-paced editing and rock music to appeal to the target audience – young, single men and women)*

Teacher prompts: "Why might a producer think that yet another version of this well-known story would attract a wide audience?" "What kind of driver is this car advertisement designed to appeal to?"

8e78 Making Inferences/Interpreting Messages

1.2 interpret increasingly complex or difficult media texts, using overt and implied messages as evidence for their interpretations *(e.g., compare the coverage of a lead story in a morning newspaper to the coverage of that story on the evening news; compare the order in which news stories are reported on two different television channels and suggest reasons for the differences; compare the treatment of a historical figure in a movie to his or her treatment in a print biography)*

Teacher prompts: "Did the newspaper and the television news program use the same lead story? Why or why not? Did the different news sources provide different information on the same topic? Did they take a different position?" "Which historical portrait is more convincing? More accurate? More interesting? Why?"

8e79 Responding to and Evaluating Texts

1.3 evaluate the effectiveness of the presentation and treatment of ideas, information, themes, opinions, issues, and/or experiences in media texts *(e.g., explain how a series of newspaper stories on a controversial issue captured and maintained their interest; explain the similarities and differences in the treatment of a particular topic or theme in different media texts and evaluate the relative effectiveness of the treatments; as a class, evaluate the media's coverage of a social or environmental issue over a two-week period)*

8e80 Audience Responses

1.4 explain why different audiences *(e.g., with respect to gender, age, culture, race, income level)* might have different responses to a variety of media texts *(e.g., predict how a member of a particular age/gender/ ethnocultural/socio-economic group might react to a controversial article in a print or online news magazine and give reasons for their prediction)*

Teacher prompt: "Do you think all members of a particular group would react the same way to this issue? Could an older person react the same way as a teenager? Why, or why not?"

8e81 Point of View

1.5 demonstrate understanding that different media texts reflect different points of view and that some texts reflect multiple points of view *(e.g., a television broadcast of a sports game presents the views of fans, the announcers, the sponsors, and the television network; different media texts represent people of different age, gender, income level, or ethnocultural background differently, communicating obvious or subtle messages that might indicate bias or stereotyping; different points of view are often presented in a news report of a conflict)*

Teacher prompts: "What different groups are represented in the text? Are the different groups treated differently? If so, how?" "In this news report about a conflict between two countries, does the reporter appear to favour one side over the other? Give evidence for your view."

8e82 Production Perspectives

1.6 identify who produces various media texts and determine the commercial, ideological, political, cultural, and/or artistic interests or perspectives that the texts may involve *(e.g., a music company's interest in a recording may be different from that of the artist; the company that produces a video game and the game's creator may have different views on how the game should be promoted)*

*Teacher prompt: "*How are commercial and artistic interests reflected in the contents and presentation of this CD by your favourite group?" "Explain how a more ideological approach might affect the appeal of this magazine for its current broad range of readers "

2. Understanding Media Forms, Conventions, and Techniques

8e83 Form

2.1 explain how individual elements of various media forms combine to create, reinforce, and/or enhance meaning *(e.g., print advertisements use text, images, colour, different fonts, and different camera angles in a seamless combination to create an effect)*

*Teacher prompt: "*Why do you think each of these elements is included? How are the elements combined to create a coherent message?"

8e84 Conventions and Techniques

2.2 identify the conventions and techniques used in a variety of media forms and explain how they help convey meaning and influence or engage the audience *(e.g., website conventions:* home pages provide users with a convenient preview of the types of information available; *website techniques:* "sidebars" with inviting audio/video elements entice viewers to browse and explore new topics that might not have been their first priority*)*

3. Creating Media Texts

8e85 Purpose and Audience

3.1 explain why they have chosen the topic for a media text they plan to create *(e.g., a poster advertising a class fund-raising campaign to appeal to local parent groups, businesses, or service organizations)*, and identify challenges they may face in engaging and/or influencing their intended audience

Teacher prompt: "What are the challenges involved in reaching each of these groups? How can you appeal to all of the groups in a single poster? If you were to develop three posters, one for each of them, how would the posters differ?"

8e86 Form

3.2 identify an appropriate form to suit the purpose and audience for a media text they plan to create *(e.g., a multimedia resentation about their class or grade, to be presented to parents during graduation ceremonies)* and explain why it is an appropriate choice

Teacher prompt: "What different types of media could you use for the presentation? How would they be organized and combined?"

8e87 Conventions and Techniques

3.3 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 *(e.g., conventions in advertisements for a product to appeal to different age groups among the students:* text, images, "free offer" promotional gimmicks; *techniques:* use of age-appropriate content in all elements of the advertisement)

Teacher prompt: "What are the important things you need to know about your audience when designing your media text?"

8e88 Producing Media Texts

3.4 produce a variety of media texts of some technical complexity for specific purposes and audiences, using appropriate forms, conventions, and techniques *(e.g.,*

- *a multimedia presentation examining two or more elements of a narrative, such as theme, plot, setting, or character*
- *a one-minute video advertising a class fund-raising project*
- *a website based on the content of a unit of study*
- *a report on school sports events to be presented during morning announcements*
- *magazine advertisements for a particular product, aimed at different age groups among the students in the school*
- *an interview with a family member about his or her cultural heritage for publication in a school or community magazine/newspaper*
- *a public-service announcement on a current issue that is relevant to their fellow students, such as daily physical activity, literacy, or bullying*
- *a storyboard for a video of a favourite song that is not available as a video)*

4. Reflecting on Media Literacy Skills and Strategies

8e89 Metacognition

4.1 identify 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

Teacher prompt: "Why was it helpful to think about your audience's needs or wants before creating your advertisement?"

8e90 Interconnected Skills

4.2 explain how their skills in listening, speaking, reading, and writing help them to make sense of and produce media texts

Teacher prompt: "How could reading about food and health help you when you are trying to create an advertisement for a 'healthy eating' ad campaign?"

French as a Second Language Expectations — Grade 08

Oral Communication, Reading, and Writing

Overall Expectations

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

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

Reading

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

Writing

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

Mathematical Process Expectations

Problem Solving

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

Reasoning And Proving

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

Reflecting

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

Selecting Tools and Computational Strategies

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

Connecting

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

Representing

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

Communicating

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

Number Sense and Numeration

Overall Expectations

8m8 • represent, compare, and order equivalent representations of numbers, including those involving positive exponents;

8m9 • solve problems involving whole numbers, decimal numbers, fractions, and integers, using a variety of computational strategies;

8m10 • solve problems by using proportional reasoning in a variety of meaningful contexts.

Quantity Relationships

8m11 – express repeated multiplication using exponential notation (e.g., $2 \times 2 \times 2 \times 2 = 2^4$);

8m12 – represent whole numbers in expanded form using powers of ten (e.g., $347 = 3 \times 10^2 + 4 \times 10^1 + 7$);

8m13 – represent, compare, and order rational numbers (i.e., positive and negative fractions and decimals to thousandths);

8m14 – translate between equivalent forms of a number (i.e., decimals, fractions, percents) (e.g., 3/4 = 0.75);

8m15 – determine common factors and common multiples using the prime factorization of numbers (e.g., the prime factorization of 12 is 2 x 2 x 3; the prime factorization of 18 is 2 x 3 x 3; the greatest common factor of 12 and 18 is 2 x 3 or 6; the least common multiple of 12 and 18 is 2 x 2 x 3 x 3 or 36).

Operational Sense

8m16 – solve multi-step problems arising from real-life contexts and involving whole numbers and decimals, using a variety of tools (e.g., graphs, calculators) and strategies (e.g., estimation, algorithms);

8m17 – solve problems involving percents expressed to one decimal place (e.g., 12.5%) and whole-number percents greater than 100 (e.g., 115%) (Sample problem: The total cost of an item with tax included [115%] is $23.00. Use base ten materials to determine the price before tax.);

8m18 – use estimation when solving problems involving operations with whole numbers, decimals, percents, integers, and fractions, to help judge the reasonableness of a solution;

8m19 – represent the multiplication and division of fractions, using a variety of tools and strategies (e.g., use an area model to represent 1/4 multiplied by 1/3);

8m20 – solve problems involving addition, subtraction, multiplication, and division with simple fractions;

8m21 – represent the multiplication and division of integers, using a variety of tools [e.g., if black counters represent positive amounts and red counters represent negative amounts, you can model 3 x (–2) as three groups of two red counters];

8m22 – solve problems involving operations with integers, using a variety of tools (e.g., two-colour counters, virtual manipulatives, number lines);

8m23 – evaluate expressions that involve integers, including expressions that contain brackets and exponents, using order of operations;

8m24 – multiply and divide decimal numbers by various powers of ten (e.g., "To convert 230 000 cm^3 to cubic metres, I calculated in my head $230000 \div 10^6$ to get 0.23 m^3."") (Sample problem: Use a calculator to help you generalize a rule for dividing numbers by 1 000 000.);

8m25 – estimate, and verify using a calculator, the positive square roots of whole numbers, and distinguish between whole numbers that have whole-number square roots (i.e., perfect square numbers) and those that do not (Sample problem: Explain why a square with an area of 20 cm^2 does not have a whole-number side length.).

Proportional Relationships

8m26 – identify and describe real-life situations involving two quantities that are directly proportional (e.g., the number of servings and the quantities in a recipe, mass and volume of a substance, circumference and diameter of a circle);

8m27 – solve problems involving proportions, using concrete materials, drawings, and variables (Sample problem: The ratio of stone to sand in HardFast Concrete is 2 to 3. How much stone is needed if 15 bags of sand are used?);

8m28 – solve problems involving percent that arise from real-life contexts (e.g., discount, sales tax, simple interest) (Sample problem: In Ontario, people often pay a provincial sales tax [PST] of 8% and a federal sales tax [GST] of 7% when they make a purchase. Does it matter which tax is calculated first? Explain your reasoning.);

8m29 – solve problems involving rates (Sample problem: A pack of 24 CDs costs $7.99. A pack of 50 CDs costs $10.45. What is the most economical way to purchase 130 CDs?).

Measurement

Overall Expectations

8m30 • research, describe, and report on applications of volume and capacity measurement;

8m31 • determine the relationships among units and measurable attributes, including the area of a circle and the volume of a cylinder.

Attributes, Units, and Measurement Sense

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

Measurement Relationships

8m33 – solve problems that require conversions involving metric units of area, volume, and capacity (i.e., square centimetres and square metres; cubic centimetres and cubic metres; millilitres and cubic centimetres) (Sample problem: What is the capacity of a cylindrical beaker with a radius of 5 cm and a height of 15 cm?);

8m34 – measure the circumference, radius, and diameter of circular objects, using concrete materials (Sample Problem: Use string to measure the circumferences of different circular objects.);

8m35 – determine, through investigation using a variety of tools (e.g., cans and string, dynamic geometry software) and strategies, the relationships for calculating the circumference and the area of a circle, and generalize to develop the formulas [i.e., Circumference of a circle $=\pi$ x diameter; Area of a circle $= \pi$ x $(\text{radius})^2$] (Sample problem: Use string to measure the circumferences and the diameters of a variety of cylindrical cans, and investigate the ratio of the circumference to the diameter.);

8m36 – solve problems involving the estimation and calculation of the circumference and the area of a circle;

8m37 – determine, through investigation using a variety of tools and strategies (e.g., generalizing from the volume relationship for right prisms, and verifying using the capacity of thin-walled cylindrical containers), the relationship between the area of the base and height and the volume of a cylinder, and generalize to develop the formula (i.e., Volume = area of base x height);

8m38 – determine, through investigation using concrete materials, the surface area of a cylinder (Sample problem: Use the label and the plastic lid from a cylindrical container to help determine its surface area.);

8m39 – solve problems involving the surface area and the volume of cylinders, using a variety of strategies (Sample problem: Compare the volumes of the two cylinders that can be created by taping the top and bottom, or the other two sides, of a standard sheet of paper.).

Geometry and Spatial Sense

Overall Expectations

8m40 • demonstrate an understanding of the geometric properties of quadrilaterals and circles and the applications of geometric properties in the real world;

8m41 • develop geometric relationships involving lines, triangles, and polyhedra, and solve problems involving lines and triangles;

8m42 • represent transformations using the Cartesian coordinate plane, and make connections between transformations and the real world.

Geometric Properties

8m43 – sort and classify quadrilaterals by geometric properties, including those based on diagonals, through investigation using a variety of tools (e.g., concrete materials, dynamic geometry software) (Sample problem: Which quadrilaterals have diagonals that bisect each other perpendicularly?);

8m44 – construct a circle, given its centre and radius, or its centre and a point on the circle, or three points on the circle;

8m45 – investigate and describe applications of geometric properties (e.g., properties of triangles, quadrilaterals, and circles) in the real world.

Geometric Relationships

8m46 – determine, through investigation using a variety of tools (e.g., dynamic geometry software, concrete materials, geoboard), relationships among area, perimeter, corresponding side lengths, and corresponding angles of similar shapes (Sample problem: Construct three similar rectangles, using grid paper or a geoboard, and compare the perimeters and areas of the rectangles.);

8m47 – determine, through investigation using a variety of tools (e.g., dynamic geometry software, concrete materials, protractor) and strategies (e.g., paper folding), the angle relationships for intersecting lines and for parallel lines and transversals, and the sum of the angles of a triangle;

8m48 – solve angle-relationship problems involving triangles (e.g., finding interior angles or complementary angles), intersecting lines (e.g., finding supplementary angles or opposite angles), and parallel lines and transversals (e.g., finding alternate angles or corresponding angles);

8m49 – determine the Pythagorean relationship, through investigation using a variety of tools (e.g., dynamic geometry software; paper and scissors; geoboard) and strategies;

8m50 – solve problems involving right triangles geometrically, using the Pythagorean relationship;

8m51 – determine, through investigation using concrete materials, the relationship between the numbers of faces, edges, and vertices of a polyhedron (i.e., number of faces + number of vertices = number of edges + 2) (Sample problem: Use Polydrons and/or paper nets to construct the five Platonic solids [i.e., tetrahedron, cube, octahedron, dodecahedron, icosahedron], and compare the sum of the numbers of faces and vertices to the number of edges for each solid.).

Location and Movement

8m52 – graph the image of a point, or set of points, on the Cartesian coordinate plane after applying a transformation to the original point(s) (i.e., translation; reflection in the x-axis, the y-axis, or the angle bisector of the axes that passes through the first and third quadrants; rotation of 90°, 180°, or 270° about the origin);

8m53 – identify, through investigation, real-world movements that are translations, reflections, and rotations.

Patterning and Algebra

Overall Expectations

8m54 • represent linear growing patterns (where the terms are whole numbers) using graphs, algebraic expressions, and equations;

8m55 • model linear relationships graphically and algebraically, and solve and verify algebraic equations, using a variety of strategies, including inspection, guess and check, and using a "balance" model.

Patterns and Relationships

8m56 – represent, through investigation with concrete materials, the general term of a linear pattern, using one or more algebraic expressions (e.g., "Using toothpicks, I noticed that 1 square needs 4 toothpicks, 2 connected squares need 7 toothpicks, and 3 connected squares need 10 toothpicks. I think that for n connected squares I will need 4 + 3(n – 1) toothpicks, because the number of toothpicks keeps going up by 3 and I started with 4 toothpicks. Or, if I think of starting with 1 toothpick and adding 3 toothpicks at a time, the pattern can be represented as 1 + 3n.");

8m57 – represent linear patterns graphically (i.e., make a table of values that shows the term number and the term, and plot the coordinates on a graph), using a variety of tools (e.g., graph paper, calculators, dynamic statistical software);

8m58 – determine a term, given its term number, in a linear pattern that is represented by a graph or an algebraic equation (Sample problem: Given the graph that represents the pattern 1, 3, 5, 7, …, find the 10th term. Given the algebraic equation that represents the pattern, t = 2n – 1, find the 100th term.).

Variables, Expressions, and Equations

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

8m60 – model linear relationships using tables of values, graphs, and equations (e.g., the sequence 2, 3, 4, 5, 6, … can be represented by the equation t = n + 1, where n represents the term number and t represents the term), through investigation using a variety of tools (e.g., algebra tiles, pattern blocks, connecting cubes, base ten materials) (Sample problem: Leah put $350 in a bank certificate that pays 4% simple interest each year. Make a table of values to show how much the bank certificate is worth after five years, using base ten materials to help you. Represent the relationship using an equation.);

8m61 – translate statements describing mathematical relationships into algebraic expressions and equations (e.g., for a collection of triangles, the total number of sides is equal to three times the number of triangles or s = 3n);

8m62 – evaluate algebraic expressions with up to three terms, by substituting fractions, decimals, and integers for the variables (e.g., evaluate 3x + 4y = 2z, where x = 1/2, y = 0.6, and z = –1);

8m63 – make connections between solving equations and determining the term number in a pattern, using the general term (e.g., for the pattern with the general term 2n + 1, solving the equation 2n + 1 = 17 tells you the term number when the term is 17);

8m64 – solve and verify linear equations involving a one-variable term and having solutions that are integers, by using inspection, guess and check, and a "balance" model (Sample problem: What is the value of the variable in the equation 30x – 5 = 10?).

Data Management and Probability

Overall Expectations

8m65 • collect and organize categorical, discrete, or continuous primary data and secondary data and display the data using charts and graphs, including frequency tables with intervals, histograms, and scatter plots;

8m66 • apply a variety of data management tools and strategies to make convincing arguments about data;

8m67 • use probability models to make predictions about real-life events.

Collection and Organization of Data

8m68 – collect data by conducting a survey or an experiment to do with themselves, their environment, issues in their school or community, or content from another subject, and record observations or measurements;

8m69 – organize into intervals a set of data that is spread over a broad range (e.g., the age of respondents to a survey may range over 80 years and may be organized into ten-year intervals);

8m70 – collect and organize categorical, discrete, or continuous primary data and secondary data (e.g., electronic data from websites such as E-Stat or Census At Schools), and display the data in charts, tables, and graphs (including histograms and scatter plots) that have appropriate titles, labels (e.g., appropriate units marked on the axes), and scales (e.g., with appropriate increments) that suit the range and distribution of the data, using a variety of tools (e.g., graph paper, spreadsheets, dynamic statistical software);

8m71 – select an appropriate type of graph to represent a set of data, graph the data using technology, and justify the choice of graph (i.e., from types of graphs already studied, including histograms and scatter plots); – explain the relationship between a census, a representative sample, sample size, and a population (e.g., "I think that in most cases a larger sample size will be more representative of the entire population.").

8m72 – explain the relationship between a census, a representative sample, sample size, and a population (e.g., "I think that in most cases a larger sample size will be more representative of the entire population.").

Data Relationships

8m73 – read, interpret, and draw conclusions from primary data (e.g., survey results, measurements, observations) and from secondary data (e.g., election data or temperature data from the newspaper, data from the Internet about lifestyles), presented in charts, tables, and graphs (including frequency tables with intervals, histograms, and scatter plots);

8m74 – determine, through investigation, the appropriate measure of central tendency (i.e., mean, median, or mode) needed to compare sets of data (e.g., in hockey, compare heights or masses of players on defence with that of forwards);

8m75 – demonstrate an understanding of the appropriate uses of bar graphs and histograms by comparing their characteristics (Sample problem: How is a histogram similar to and different from a bar graph? Use examples to support your answer.);

8m76 – compare two attributes or characteristics (e.g., height versus arm span), using a scatter plot, and determine whether or not the scatter plot suggests a relationship (Sample problem: Create a scatter plot to compare the lengths of the bases of several similar triangles with their areas.);

8m77 – identify and describe trends, based on the rate of change of data from tables and graphs, using informal language (e.g., "The steep line going upward on this graph represents rapid growth. The steep line going downward on this other graph represents rapid decline.");

8m78 – make inferences and convincing arguments that are based on the analysis of charts, tables, and graphs (Sample problem: Use data to make a convincing argument that the environment is becoming increasingly polluted.);

8m79 – compare two attributes or characteristics, using a variety of data management tools and strategies (i.e., pose a relevant question, then design an experiment or survey, collect and analyse the data, and draw conclusions) (Sample problem: Compare the length and width of different-sized leaves from a maple tree to determine if maple leaves grow proportionally. What generalizations can you make?).

Probability

8m80 – compare, through investigation, the theoretical probability of an event (i.e., the ratio of the number of ways a favourable outcome can occur compared to the total number of possible outcomes) with experimental probability, and explain why they might differ (Sample problem:Toss a fair coin 10 times, record the results, and explain why you might not get the predicted result of 5 heads and 5 tails.);

8m81 – determine, through investigation, the tendency of experimental probability to approach theoretical probability as the number of trials in an experiment increases, using class-generated data and technology-based simulation models (Sample problem: Compare the theoretical probability of getting a 6 when tossing a number cube with the experimental probabilities obtained after tossing a number cube once, 10 times, 100 times, and 1000 times.);

8m82 – identify the complementary event for a given event, and calculate the theoretical probability that a given event will not occur (Sample problem: Bingo uses the numbers from 1 to 75. If the numbers are pulled at random, what is the probability that the first number is a multiple of 5? is not a multiple of 5?).

Science and Technology Expectations (2007) Grade 8

UNDERSTANDING LIFE SYSTEMS: Cells

Overall Expectations

8s1 **CR2007**	1. assess the impact of cell biology on individuals, society, and the environment;
8s2 **CR2007**	2. investigate functions and processes of plant and animal cells;
8s3 **CR2007**	3. demonstrate an understanding of the basic structure and function of plant and animal cells and cell processes.

1. Relating Science and Technology to Society and the Environment

8s4 **CR2007**	1.1 assess the role of selected technologies (e.g., the development of the electron microscope, the ability to infuse dyes into cells, in vitro fertilization) in enhancing our understanding of cells and cellular processes Sample guiding questions: How have electron microscopes helped our understanding of cells and cell processes? What are some disadvantages of using this technology that might affect its availability or effectiveness? How might infusing dye into cells be a useful tool for diagnosing and/or treating diseases, or for understanding how cells work? How might the understanding of cells and cell processes help in treating disease?
8s5 **CR2007**	1.2 assess the potential that our understanding of cells and cell processes has for both beneficial and harmful effects on human health and the environment, taking different perspectives into account (e.g., the perspectives of farmers, pesticide manufacturers, people with lifethreatening illnesses) Sample issues: (a) Medical scientists can identify changes in a cell or in chromosomes that signal the development of medical problems. But because of the cost of the procedure, this service may not be available to everyone. (b) Scientists can develop pest-resistant crops that reduce the need for chemical pesticides. But there are some concerns that these crops may cross-breed with native plants and disrupt natural populations and balances.

2. Developing Investigation and Communication Skills

8s6 **CR2007**	2.1 follow established safety procedures for handling apparatus and materials (e.g., wash hands after preparing materials for slides) and use microscopes correctly and safely (e.g., carry the microscope with both hands, place it near the centre of the desk, ensure that the sun cannot be directly focused through the instrument when sunlight is used for illumination, keep both eyes open when viewing to avoid eye strain)
8s7 **CR2007**	2.2 use a microscope correctly and safely to find and observe components of plant and animal cells (e.g., using an onion slice or a prepared slide of a protist) and make accurate drawings of their observations
8s8 **CR2007**	2.3 prepare dry- and wet-mount slides of a variety of objects for use with a microscope (e.g., a piece of newspaper, a hair)
8s9 **CR2007**	2.4 use scientific inquiry/experimentation skills (see page 12) to investigate the processes of osmosis and diffusion Sample guiding questions: What question will your experiments try to answer? What do you predict might happen in your experiment? What variables might you need to consider? What conclusions might you draw from the results of your experiment? How closely do your predictions compare with what you actually observed in your experiments? How might what you have learned about osmosis and diffusion be useful in daily life (e.g., how might this help you to keep your houseplants from wilting?)
8s10 **CR2007**	2.5 use appropriate science and technology vocabulary, including organelle, diffusion, osmosis, cell theory, selective permeability, membrane, stage, and eyepiece, in oral and written communication
8s11 **CR2007**	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., using the conventions of science, make a labelled drawing of a cell; create a slide show to explain the results of investigations into the processes of osmosis and diffusion)

3. Understanding Basic Concepts

8s12 **CR2007**	3.1 demonstrate an understanding of the postulates of the cell theory (e.g., the cell is the basic unit of life; all cells come from pre-existing cells; all living things are made up of one or more cells)

8s13 **CR2007**	3.2 identify structures and organelles in cells, including the nucleus, cell membrane, cell wall, chloroplasts, vacuole, mitochondria, and cytoplasm, and explain the basic functions of each (e.g., the nucleus holds all the information needed to make every cell in the body)
8s14 **CR2007**	3.3 compare the structure and function of plant and animal cells
8s15 **CR2007**	3.4 explain the processes of diffusion and osmosis and their roles within a cell
8s16 **CR2007**	3.5 identify unicellular organisms (e.g., amoebae) and multicellular organisms (e.g., invertebrates [worms], vertebrates [frogs]), and compare ways in which they meet their basic needs (e.g., nutrition, movement, gas exchange)
8s17 **CR2007**	3.6 describe the organization of cells into tissues, organs, and systems (e.g., groups of cells with similar functions combine to make up tissues; groups of tissues with similar functions combine to make organs; groups of organs work together as organ systems)

UNDERSTANDING STRUCTURES AND MECHANISMS: Systems in Action

Overall Expectations

8s18 **CR2007**	1. assess the personal, social, and/or environmental impacts of a system, and evaluate improvements to a system and/or alternative ways of meeting the same needs;
8s19 **CR2007**	2. investigate a working system and the ways in which components of the system contribute to its desired function;
8s20 **CR2007**	3. demonstrate an understanding of different types of systems and the factors that contribute to their safe and efficient operation.

1. Relating Science and Technology to Society and the Environment

8s21 **CR2007**	1.1 assess the social, economic, and environmental impacts of automating systems Sample issues: (a) Automation was feared by some people who believed that replacing humans with automated systems would lead to high unemployment. However, others argued that automation would actually lead to higher employment, because it freed some of the labour force to enter higher-skilled, higher-paying jobs. (b) Although automation is often viewed as a way to minimize human error in systems, as the degree and sophistication of automation increase so do the chances of more serious errors and their consequences. (c) The effects of automation can be environmentally disastrous. Serious pollution coincided with the development of factories and the widespread use of coal to run their machinery. Although factories and automation continue to exist, we are more aware of what these systems can do to the environment. (d) Mass-produced furniture is made of lowquality materials, lacks durability, and involves minimal original craftsmanship, and it therefore can be purchased at a reasonable price. However, many consumers tend to discard it readily, and it often is sent to landfills, thus creating environmental problems.
8s22 **CR2007**	1.2 assess the impact on individuals, society, and the environment of alternative ways of meeting needs that are currently met by existing systems, taking different points of view into consideration Sample issues: (a) A large city decides that it will put in more bicycle lanes and bikeways instead of expanding its existing public transit system. (b) A school system decides to have students and teachers in school year-round, instead of having everyone on vacation in July and August.

2. Developing Investigation and Communication Skills

8s23 **CR2007**	2.1 follow established safety procedures for working with apparatus, tools, materials, and electrical systems (e.g., tie hair back before working with drills, saws, and sanders)
8s24 **CR2007**	2.2 investigate the work done in a variety of everyday activities and record the findings quantitatively (e.g., calculate the work done when lifting dumbbells by measuring the force required to move the dumbbell and multiplying by the distance the dumbbell moves)

8s25 **CR2007**	2.3 use scientific inquiry/experimentation skills (see page 12) to investigate mechanical advantage in a variety of mechanisms and simple machines Sample problems: Conduct experiments to determine what happens when the length of the effort arm and/or the load arm in a lever are changed, and note qualitative or quantitative changes in mechanical advantage. Conduct experiments to determine what happens when the diameter of the piston in a hydraulic system is changed, and note qualitative or quantitative changes in mechanical advantage. Conduct experiments to determine what happens when the number of pulleys that support a load is changed, and note qualitative or quantitative changes in mechanical advantage.
8s26 **CR2007**	2.4 use technological problem-solving skills (see page 16) to investigate a system (e.g., an optical system, a mechanical system, an electrical system) that performs a function or meets a need Sample problem: Create a device that will carry a snack from one place to another. Describe the function of each component part, and examine the effects of making a change to one or more of the components. Sample guiding questions: What purpose or need does your device fulfil? When you tested your device, which component or components worked as intended? Which did not? Why do you think the problem occurred? Predict what will happen if you remove or change the size or direction of one or more of the components.
8s27 **CR2007**	2.5 investigate the information (e.g., owner's manual for a car, weather advisories for a region, pest forecasts/warnings for a crop/region) and support (e.g., a technical support line for computers) provided to consumers/clients to ensure that a system functions safely and effectively Sample guiding questions: What are the criteria for a good owner's manual (for a car, an MP3 player, etc.) or for an effective help or support service? Why is it important to have this kind of information? What other information might have been included to make the manual more helpful? How might the help or support service be improved? What might be some consequences of not having this kind of help and support?
8s28 **CR2007**	2.6 use appropriate science and technology vocabulary, including mechanical advantage, input, output, friction, gravity, forces, and efficiency, in oral and written communication
8s29 **CR2007**	2.7 use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g., using appropriate mathematical conventions, create a graph to represent changes in mechanical advantage when certain factors in a mechanism are manipulated.

3. Understanding Basic Concepts

8s30 **CR2007**	3.1 identify various types of systems (e.g., mechanical systems, body systems, optical systems, mass transit systems, Aboriginal clan systems, health care systems)
8s31 **CR2007**	3.2 identify the purpose, inputs, and outputs of various systems (e.g., a garden – purpose: to grow things; input: seeds, water, fertilizer; output: flowers, food)
8s32 **CR2007**	3.3 identify the various processes and components of a system (e.g., robot, front-end loader/backhoe, heating system, transportation system, health care system) that allow it to perform its function efficiently and safely
8s33 **CR2007**	3.4 compare, using examples, the scientific definition with the everyday use of the terms work, force, energy, and efficiency
8s34 **CR2007**	3.5 understand and use the formula work = force × distance ($W = F \times d$) to establish the relationship between work, force, and distance moved parallel to the force in simple systems
8s35 **CR2007**	3.6 calculate the mechanical advantage (MA = force needed without a simple machine divided by force needed with a simple machine) of various mechanical systems (e.g., a wheelbarrow allows a smaller force to lift a larger weight, a hockey stick allows a short movement of hands to move the blade a larger distance, a simple fixed pulley system redirects the effort force)
8s36 **CR2007**	3.7 explain ways in which mechanical systems produce heat, and describe ways to make these systems more efficient (e.g., friction produces heat, which can be reduced by lubrication)
8s37 **CR2007**	3.8 describe systems that have improved the productivity of various industries (e.g., robotic systems have increased the rate of production in factories that assemble the fine parts of wrist watches)
8s38 **CR2007**	3.9 identify social factors that influence the evolution of a system (e.g., growing concern over the amount of waste creates a need for recycling centres, and the recycling centres must grow as population and waste increase; the desire to make tasks easier creates a need for pulley systems, gear systems, and hydraulic and pneumatic systems; changes in traditional work hours created by technological advances can influence changes in a child care system)

Science and Technology Expectations Grade 8

UNDERSTANDING MATTER AND ENERGY: Fluids

Overall Expectations

8s39 **CR2007**	1. analyse how the properties of fluids are used in various technologies, and assess the impact of these technologies on society and the environment;
8s40 **CR2007**	2. investigate the properties of fluids;
8s41 **CR2007**	3. demonstrate an understanding of the properties and uses of fluids.

1. Relating Science and Technology to Society and the Environment

8s42 **CR2007**	1.1 assess the social, economic, and environmental impacts of selected technologies that are based on the properties of fluids Sample issues: (a) The use of heavy hydraulic equipment on construction sites increases productivity. It also reduces the need for manual labourers. (b) Dialysis and blood-separation techniques have decreased mortality rates. But the costs of the equipment can mean that the service is not available to everyone who needs it.
8s43 **CR2007**	1.2 assess the impact of fluid spills on society and the environment, including the cost of the cleanup and the effort involved Sample issues: An oil tanker spills its load in B.C.'s inside coastal waters. A fuel truck jackknifes and is leaking gasoline onto a major highway and into local groundwater. A farm truck moving down a country road is leaking liquid fertilizer. The family car is in need of repair – there is brake fluid running down the driveway.

2. Developing Investigation and Communication Skills

8s44 **CR2007**	2.1 follow established safety practices for using apparatus, tools, and materials (e.g., use syringes and tubing for the purposes for which they were designed)
8s45 **CR2007**	2.2 determine the mass-to-volume ratio of different amounts of the same substance (e.g., water, corn syrup, copper pennies)
8s46 **CR2007**	2.3 investigate and compare the density of a variety of liquids (e.g., water, salt water, corn syrup, liquid soap) Sample problem: Construct and calibrate a hydrometer and use it to find the density of a variety of liquids.
8s47 **CR2007**	2.4 investigate applications of the principles of fluid mechanics (e.g., in aeronautical research, shipping, food services, plumbing, hydrodynamic engineering)
8s48 **CR2007**	2.5 use scientific inquiry/experimentation skills (see page 12) to identify factors that affect the flow rates of various fluids Sample problem: Devise an experiment to find out how the flow rate of a fluid is affected by changing its temperature; by changing the angle or tilt at which it is poured; by changing the diameter of the tube through which it is poured.
8s49 **CR2007**	2.6 use technological problem-solving skills (see page 16) to design, build, and test devices that use pneumatic or hydraulic systems Sample problem: Use your knowledge of Pascal's law to design, construct, and test a working model of a device (e.g., a dentist's chair, an automobile hoist, a hydraulic brake, a backhoe) that operates using hydraulics and/or pneumatics.
8s50 **CR2007**	2.7 use appropriate science and technology vocabulary, including viscosity, density, particle theory of matter, hydraulic, and pneumatic, in oral and written communication
8s51 **CR2007**	2.8 use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g., using appropriate scientific and/or technological conventions, create a technical drawing of a pneumatic/hydraulic device; create a brochure or a multimedia presentation outlining safe and unsafe uses of the device that was modelled)

3. Understanding Basic Concepts

8s52 **CR2007**	3.1 demonstrate an understanding of viscosity and compare the viscosity of various liquids (e.g., water, syrup, oil, shampoo, ketchup)
8s53 **CR2007**	3.2 describe the relationship between mass, volume, and density as a property of matter
8s54 **CR2007**	3.3 explain the difference between solids, liquids, and gases in terms of density, using the particle theory of matter (e.g., in general, solids are more dense than liquids, which are more dense than gases)
8s55 **CR2007**	3.4 explain the difference between liquids and gases in terms of their compressibility (e.g., gases are more compressible than liquids) and how their compressibility affects their usage (e.g., pneumatic devices are used to operate bus doors because they work over a larger temperature range and are safer for this purpose than hydraulic devices)
8s56 **CR2007**	3.5 determine the buoyancy of an object, given its density, in a variety of fluids (e.g., less dense objects float, more dense objects sink)
8s57 **CR2007**	3.6 explain in qualitative terms the relationship between pressure, volume, and temperature when a liquid (e.g., water) or a gas (e.g., air) is compressed or heated
8s58 **CR2007**	3.7 explain how forces are transferred in all directions in fluids (Pascal's law)
8s59 **CR2007**	3.8 compare the ways in which fluids are used and controlled in living things to the ways in which they are used and controlled in manufactured devices (e.g., compare the role of valves in the circulatory system to the role of valves in an internal combustion engine; compare the role of a fish's swim bladder to the role of the ballast tanks in a submarine)

UNDERSTANDING EARTH AND SPACE SYSTEMS: Water Systems

Overall Expectations

8s60 **CR2007**	1. assess the impact of human activities and technologies on the sustainability of water resources;
8s61 **CR2007**	2. investigate factors that affect local water quality;
8s62 **CR2007**	3. demonstrate an understanding of the characteristics of the earth's water systems and the influence of water systems on a specific region.

1. Relating Science and Technology to Society and the Environment

8s63 **CR2007**	1.1 evaluate personal water consumption, compare it with personal water consumption in other countries, and propose a plan of action to reduce personal water consumption to help address water sustainability issues

8s64 **CR2007**	1.2 assess how various media sources (e.g., Canadian Geographic; the science section in newspapers; Internet websites; local, national, and international news on television and radio) address issues related to the impact of human activities on the long-term sustainability of local, national, or international water systems Sample issues: (a) You are doing research on the implications of exporting water from Canada to other countries. Your sources are a national newspaper, a scientific magazine, and some selected Internet sites. Each has a slightly different opinion on the issue. (b) A farmer wants to ensure that her nutrient management strategies are not adversely affecting the local water system. She consults the agriculture section of a local newspaper, a Canadian magazine with an environmental focus, and local farm reports. She finds conflicting information. (c) The Protocol for Safe Drinking Water in First Nations Communities addresses drinking water concerns in First Nations communities. Various government agencies, news agencies, and interest groups have different perspectives on its development and release. Sample guiding questions: How does each of these texts address the purpose and the intended audience for the piece? Are there implied messages in the text, and if so, what are they? How does the information in each of the texts compare? Why might they take different positions? What different groups are represented in the texts? How does each text capture and maintain the interest of the reader? Why might different people or groups of people react differently to these texts?
8s65 **CR2007**	1.3 assess the impact on local and global water systems of a scientific discovery or technological innovation (e.g., enhancing the efficiency of naturally occurring bacteria that consume hydrocarbons from oil spills and convert them to carbon dioxide and water; development of desalination techniques to provide fresh water from sea water) Sample issues: (a) Bioremediation (e.g., the use of microorganisms to clean up contaminated soil or water) can eliminate contamination in many environments with a speed and thoroughness much greater than traditional methods and at significantly lower costs. However, it is effective on a limited number of contaminants; in some cases, the time involved is relatively long; and considerable knowledge and experience are needed to design and implement a successful bioremediation program. (b) Desalination is a method that allows sea water to be made into fresh water. The cost to do this is declining, while extracting water from rivers and lakes is becoming more expensive as well as ecologically harmful, and groundwater in many locations is depleted. However, not every area that needs a supply of fresh water is on a coastline. Sample guiding questions: What scientific discoveries or technologies are currently affecting Earth's water systems? What kind of an impact are these advances having on water systems? What discoveries or technologies are available (or in development) that can help clean our water systems?

2. Developing Investigation and Communication Skills

8s66 **CR2007**	2.1 follow established safety procedures for the use of apparatus and chemicals (e.g., when using water-testing equipment and water-testing chemicals)
8s67 **CR2007**	2.2 investigate how municipalities process water (e.g., obtain it, test it, and treat it) and manage water (e.g., distribute it, measure consumption, and dispose of waste water)
8s68 **CR2007**	2.3 test water samples for a variety of chemical characteristics (e.g., pH, salinity, chlorine) Sample problem: Test the pH, salinity, and chlorine content of tap water, rain water, bottled water, filtered water, and water from a variety of other sources such as streams, rivers, ponds, or lakes. Record and compare the findings and draw conclusions from them.
8s69 **CR2007**	2.4 use scientific inquiry/research skills (see page 15) to investigate local water issues Sample guiding questions: Where does your local water supply come from? How is water used in the area where you live? How does the use of water in your community affect the local water supply? How might you find out? What are some local issues regarding the water supply for your area? Why have these become issues? How are they currently being addressed by your city, town, or region? How might you and your family have become aware of the issue? What are some things that you think others should know about their local water supply and how it is managed?
8s70 **CR2007**	2.5 use technological problem-solving skills (see page 16) to design, build, and test a water system device that performs a practical function or meets a need Sample problem: Design, build, and test a filtration device that makes unclean water clean; build a working model of an irrigation system.
8s71 **CR2007**	2.6 use appropriate science and technology vocabulary, including water table, aquifer, polar ice-cap, and salinity, in oral and written communication
8s72 **CR2007**	2.7 use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g. using appropriate scientific conventions, draw a labelled diagram of a water treatment facility; create a brochure about the safe use of wells and septic tanks)

3. Understanding Basic Concepts

8s73 **CR2007**	3.1 identify the various states of water on the earth's surface, their distribution, relative amounts, and circulation, and the conditions under which they exist (e.g., water is a solid in glaciers, snow, and polar ice-caps; a liquid in oceans, lakes, rivers, and aquifers; and a gas in the atmosphere)

8s74 **CR2007**	3.2 demonstrate an understanding of the watershed as a fundamental geographic unit, and explain how it relates to water management and planning
8s75 **CR2007**	3.3 explain how human and natural factors cause changes in the water table (e.g., lawn watering, inefficient showers and toilets, drought, floods, overuse of wells, extraction by bottled water industry)
8s76 **CR2007**	3.4 identify factors (e.g., annual precipitation, temperature, climate change) that affect the size of glaciers and polar ice-caps, and describe the effects of these changes on local and global water systems
8s77 **CR2007**	3.5 explain changes in atmospheric conditions caused by the presence of bodies of water (e.g., differences in temperature near large bodies of water; microclimates; storms off coastal areas)

Confederation

Overall Expectations

8h1 • describe the internal and external political factors, key personalities, significant events, and geographical realities that led to the creation of the Dominion of Canada in 1867, and to the growth of Canada as other provinces and territories joined Confederation;

8h2 • use a variety of resources and tools to gather, process, and communicate information about the needs and challenges that led to the formation and expansion of the Canadian federation;

8h3 • compare Canada as it was in 1867 to the Canada of today, including political, social, and other issues facing the country in both periods.

Knowledge and Understanding

8h4 – identify key social, political, economic, and physical characteristics of the British North American colonies between 1850 and 1860 (e.g., British, French, First Nation, and Black communities);

8h5 – identify external and internal factors and events leading to Confederation (e.g., political deadlock, intercolonial trade, reciprocity, Britain's repeal of the Corn Laws, the Fenian raids, the U.S. doctrine of Manifest Destiny, transportation and defence issues);

8h6 – identify the roles of key individuals (e.g., Sir George-Étienne Cartier, Sir John A. Macdonald), the main events leading to the signing of the British North America Act (e.g., the Charlottetown, Quebec, and London Conferences; coalition government in the Canadas), and the reasons for the exclusion of certain groups from the political process (e.g., First Nation peoples, women, the Chinese and Japanese).

Inquiry/Research and Communication Skills

8h7 – formulate questions to guide research on issues and problems (e.g.,Why did Nova Scotia join Confederation in 1867 while Prince Edward Island did not? What qualities made Louis Riel a good leader?);

8h8 – use a variety of primary and secondary sources to locate relevant information about the regional interests of each colony/ rovince before and after joining the Dominion of Canada (e.g., primary sources: artefacts, journals, letters, statistics, field trips, period documents and maps; secondary sources: maps, illustrations, print materials, videos, CD-ROMs, Internet sites);

8h9 – describe and analyse conflicting points of view about a historical issue or personality (e.g., British versus Canadian points of view about trade and defence; Queen Victoria, Sir John A. Macdonald, Joseph Howe, Louis Riel);

8h10 – construct and use a wide variety of graphs, charts, diagrams, maps, and models to organize and interpret information (e.g., a decision-making chart showing the advantages and disadvantages of joining Confederation for each colony);

8h11 – analyse, synthesize, and evaluate historical information (e.g., determine the changes in Canada's boundaries in 1867, 1870, 1871, 1873, 1898, 1905, 1949, and 1999, using a series of maps);

8h12 – communicate the results of inquiries for specific purposes and audiences, using media works, political cartoons, oral presentations, written notes and descriptions, drawings, tables, charts, and graphs (e.g., create captions for political cartoons of the time);

8h13 – use appropriate vocabulary (e.g., *Confederation, conference, political deadlock, reciprocity, intercolonial trade, Corn Laws, Fenians, Manifest Destiny)* to describe their inquiries and observations.

Application

8h14 – illustrate the growth of Canada, using outline maps or other tools, identifying the physical regions of Canada, the colonies that joined Confederation, and their boundaries and dates of entry (e.g., 1867 – Ontario, Quebec, New Brunswick, Nova Scotia; 1870 – Manitoba, as a province, and Northwest Territories, as a territory; 1871 – British Columbia; 1873 – Prince Edward Island; 1898 – Yukon, as a territory; 1905 – Alberta, Saskatchewan; 1949 – Newfoundland; 1999 – Nunavut, as a territory);

8h15 – use sections 91 and 92 of the British North America Act to outline how and why responsibilities are divided between the federal and provincial governments and relate these divisions to some present-day disagreements between the two levels of government (e.g., federal responsibilities for First Nation peoples, health care, the environment, trade, telecommunications).

The Development of Western Canada

Overall Expectations

8h16 • outline the main factors contributing to the settlement and development of the Prairie provinces, British Columbia, and Yukon, and describe the effects of development on various groups of people in the region from a variety of perspectives;

8h17 • use a variety of resources and tools to gather, process, and communicate information about conflicts and changes that occurred during the development of western Canada;

8h18 • show how the history of the Canadian west has influenced both artistic/imaginative works and Canadian institutions.

Knowledge and Understanding

8h19 – describe the everyday life of various groups (e.g., First Nation peoples, Métis, Europeans) in western Canada in the late nineteenth century;

8h20 – explain the factors that led to the settlement of the Canadian west (e.g., federal government policy of opening up the prairies for European settlement, protective tariffs, railroad construction);

8h21 – analyse how treaties and the Indian Act of 1876 transformed the lifestyles of First Nation peoples in the Canadian west;

8h22 – describe the role of the Canadian Pacific Railway in furthering Canada's expansion, and identify the key individuals (e.g., Donald Smith,William Van Horne) and groups (e.g., Chinese workers) whose efforts led to the railway's completion;

8h23 – describe the causes and results of the Red River Rebellion of 1869-70 and the North-West Rebellion of 1885 and explain the role of key individuals and groups (e.g., Louis Riel, Gabriel Dumont, the North-West Mounted Police,Thomas Scott, Big Bear, Poundmaker, General Wolseley, Catherine Schubert);

8h24 – explain the effects of post-Confederation immigration, new wheat strains, and the Klondike gold rush on the expansion of western Canada and British Columbia (e.g., the development of prairie towns, the entry of the Yukon Territory into Confederation, the growth of Dawson City).

Inquiry/Research and Communication Skills

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

8h26 – use a variety of primary and secondary sources to locate relevant information about the building of the railway, the settling of the land, and social and cultural life in the developing west (e.g., *primary sources:* photographs of Chinese labourers and prairie sodbusters, the poetry of Robert W. Service; *secondary sources*: maps, illustrations, print materials, videos, CD-ROMs, Internet sites);

8h27 – analyse, synthesize, and evaluate historical information (e.g., trends in immigration, the impact of Treaties 1 to 8);

8h28 – describe and analyse conflicting points of view about a historical event (e.g., the Pacific Scandal, the hanging of Louis Riel, the imprisonment of Big Bear);

8h29 – communicate the results of inquiries for specific purposes and audiences, using media works, political cartoons, oral presentations, written notes and reports, drawings, tables, charts, and graphs (e.g., create diary entries depicting Louis Riel as a hero or a traitor);

8h30 – use appropriate vocabulary (e.g., *treaties, Métis, Rupert's Land, provisional government, prospector, panning for gold, staking a claim*) to describe their inquiries and observations.

Application

8h31 – compare the image and duties of the North-West Mounted Police to the image and duties of the Royal Canadian Mounted Police today;

8h32 – show how examples of art, poetry, music, and video reflect the history of the Canadian west (e.g., the art of Emily Carr, "The Cremation of Sam McGee" by Robert W. Service, "The Canadian Railroad Trilogy" by Gordon Lightfoot, Paul Yee's writings).

Canada: A Changing Society

Overall Expectations

8h33 • describe key characteristics of Canada between 1885 and 1914, including social and economic conditions, the roles and contributions of various people and groups, internal and external pressures for change, and the political responses to these pressures;

8h34 • use a variety of resources and tools to gather, process, and communicate information about the factors that shaped Canada as it was entering the twentieth century;

8h35 • compare living and working conditions, technological developments, and social roles near the beginning of the twentieth century with similar aspects of life in present-day Canada.

Knowledge and Understanding

8h36 – describe the factors contributing to change in Canadian society (e.g., immigration, technology, politics, globalization);

8h37 – describe the achievements of individuals and groups in Canada who have contributed significantly to the technological development of Canada and the world (e.g., Martha Black, Guglielmo Marconi, Alexander Graham Bell, J.A.D. McCurdy, Samuel McLaughlin, George Ross, Adam Beck) and analyse the impact on society of new technologies (e.g., prospecting, radio, the telephone, the automobile, electricity);

8h38 – describe the social and working conditions of Canadians around the beginning of the twentieth century (e.g., in mining, forestry, factory work; on farms; in cities);

8h39 – describe how specific individuals and events helped change the position of women and children in Canada (e.g., Nellie McClung, Emily Carr, Lucy Maud Montgomery, Pauline Johnson; the Temperance Movement, laws establishing compulsory education);

8h40 – outline the advantages and disadvantages of Clifford Sifton's immigration policy in the Laurier era;

8h41 – identify and explain the factors that led to Laurier's electoral defeat in 1911 (e.g., the reciprocity issue, political compromise, French-English tensions);

8h42 – identify key events that illustrate Canada's role within the British Empire and explain their significance (e.g., the Boer War, the Naval Question, Canada's participation in Imperial conferences);

8h43 – describe the treaties, alliances, events, and people that contributed to the start of the First World War, and explain their relevance to Canada.

Inquiry/Research and Communication Skills

8h44 – formulate questions to facilitate research on particular topics (e.g.,Why did Canadians support Laurier's leadership for fifteen years? Who started the First World War?);

8h45 – use a variety of primary and secondary sources to locate relevant information (e.g., *primary sources*: immigration posters, photographs of working conditions, journals and diaries; *secondary sources*: print materials, videos, CD-ROMs, Internet sites);

8h46 – analyse, synthesize, and evaluate historical information (e.g., immigration tables, population growth tables);

8h47 – describe and analyse conflicting points of view about a historical issue (e.g., child labour, the Boer War, the causes of the First World War);

8h48 – communicate the results of inquiries for specific purposes and audiences, using media works, political cartoons, oral presentations, written notes and reports, drawings, tables, charts, and graphs (e.g., prepare a report on a selected topic and individual);

8h49 – use appropriate vocabulary (e.g., *advocate, movement, temperance, reciprocity, entrepreneurs, multiculturalism, alliance, entente*) to describe their inquiries and observations.

Application

8h50 – create an immigration campaign to attract immigrants to Canada around the beginning of the twentieth century and today, using media appropriate to the period (e.g., poster, pamphlet);

8h51 – compare the challenges facing farmers and workers at the beginning of the twentieth century to those facing farmers and workers today;

8h52 – compare family roles at the beginning of the twentieth century to family roles today (e.g., responsibilities and roles of men, women, and children).

Patterns in Human Geography

Overall Expectations

8g1 • identify the main patterns of human settlement and identify the factors that influence population distribution and land use;

8g2 • use a variety of geographic representations, resources, tools, and technologies to gather, process, and communicate geographic information about patterns in human geography;

8g3 • compare living and working conditions in countries with different patterns of settlement, and examine how demographic factors could affect their own lives in the future.

Knowledge and Understanding

8g4 – identify the three main patterns of human settlement – linear, scattered, and clustered;

8g5 – identify and explain the factors affecting population distribution (e.g., history, natural environment, technological development, immigration trends/patterns);

8g6 – compare the characteristics of places with high and low population densities;

8g7 – explain how site and situation influence settlement patterns;

8g8 – identify and describe the types of land use (e.g., residential, recreational, institutional, commercial, industrial, agricultural; for transportation, communication, utilities; public space);

8g9 – summarize the factors that affect patterns of urbanization, industrialization, and transportation.

Inquiry/Research and Communication Skills

8g10 – formulate questions to guide and synthesize research on the study of population characteristics and patterns (e.g.,What conditions are needed to maintain a high quality of life? What is the relationship between literacy rate and GNP? What action can students take to aid a developing nation?);

8g11 – locate relevant information from a variety of primary and secondary sources (e.g., *primary sources*: interviews, field studies, surveys; *secondary sources*: statistics, maps, diagrams, illustrations, print materials, videos, CD-ROMs, Internet sites);

8g12 – communicate the results of inquiries for specific purposes and audiences using computer slide shows, videos, websites, oral presentations, written notes and reports, illustrations, tables, charts, maps, models, and graphs (e.g., create graphs to compare factors affecting quality of life; create an illustrated brochure outlining positive features of a developing nation; map the ten highest and lowest countries on the Human Development Index; interpret population pyramids to predict population trends in other countries);

8g13 – use appropriate vocabulary (e.g., *site, situation, rural, developed, developing, urbanization, population density, population distribution, gross domestic product [GDP], gross national product [GNP], correlation, birth and death rates, literacy rate, life expectancy*) to describe their inquiries and observations.

Map, Globe, and Graphic Skills *

8g14 – create and use a variety of maps for specific purposes (e.g., to show land use, transportation routes, population distribution, popular tourist destinations);

8g15 – produce and interpret simple scatter graphs to determine the correlation between population characteristics;

8g16 – construct and examine population pyramids to make predictions about future trends in population characteristics.

Application

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

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

Economic Systems

Overall Expectations

8g19 • describe the characteristics of different types of economic systems and the factors that influence them, including economic relationships and levels of industrial development;

8g20 • use a variety of geographic representations, resources, tools, and technologies to gather, process, and communicate geographic information about regional, national, and international economic systems;

8g21 • compare the economies of different communities, regions, or countries, including the influence of factors such as industries, access to resources, and access to markets.

Knowledge and Understanding

8g22 – outline the fundamental questions that all economic systems must answer: what goods are produced; how they are produced; for whom they are produced; by whom they are produced; and how they are distributed;

8g23 – describe the characteristics of different types of economic systems (e.g., traditional, command, market) and explain why most countries, including Canada, have a mixed economy that includes features from more than one system;

8g24 – explain how the availability of particular economic resources (e.g., quantity and quality of land, labour, capital, entrepreneurial ability) influences the economic success of a region;

8g25 – identify and give examples of the three major types of industries – primary (resource), secondary (manufacturing), and tertiary (service) – and describe how these industries have developed in Canada.

Inquiry/Research and Communication Skills

8g26 – formulate questions to guide and analyse research on economic influences and relationships (e.g.,Where would be the best place to start a new logging industry in Canada? How have the types of industries in Canada changed since the nineteenth century? How has technology changed a specific industry?);

8g27 – locate relevant information from a variety of primary and secondary sources (e.g., *primary sources*: statistics, interviews, published field studies, a field trip to a local industry; *secondary sources:* maps, illustrations, print materials, videos, CD-ROMs, Internet sites);

8g28 – communicate the results of inquiries for specific purposes and audiences, using computer slide shows, videos, websites, oral presentations, written notes and reports, illustrations, tables, charts, maps, models, and graphs (e.g., use a brief dramatization to explain an industry to the class; produce a map showing the locations of natural resources and raw materials needed by an industry);

8g29 – use appropriate vocabulary (e.g., *economy; traditional, command, market, and mixed economies; supply and demand; production; goods; services; consumer; market; distribution; imports; exports; land; entrepreneurial; capital; primary, secondary, and tertiary industries*) to describe their inquiries and observations.

Map, Globe, and Graphic Skills *

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

Application

8g31 – compare the economies of some top trading nations and explain the reasons for their success, taking into account factors such as industries, access to resources, and access to markets;

8g32 – investigate and explain the advantages and disadvantages of Canada's involvement in major trade associations/agreements (e.g., North American Free Trade Agreement [NAFTA],World Trade Organization [WTO]);

8g33 – investigate and describe how a new or existing industry affects the economy of a region.

Migration

Overall Expectations

8g34 • identify factors that affect migration and mobility, describe patterns and trends of migration in Canada, and identify the effects of migration on Canadian society;

8g35 • use a variety of geographic representations, resources, tools, and technologies to gather, process, and communicate geographic information about migration and its effects on people and communities;

8g36 • connect the real experiences of Canadians to information about the causes and effects of migration.

Knowledge and Understanding

8g37 – identify the push and pull factors that influence people to move (e.g., *push:* drought, war, lack of freedom, discrimination and persecution; *pull*: employment opportunities, security, climate);

8g38 – identify barriers to migration (e.g., physical, financial, legal, political, emotional);

8g39 – describe how technology has improved human mobility;

8g40 – explain how the components of culture (e.g., language, social organization, educational systems, beliefs and customs) can be affected by migration;

8g41 – describe the effects that migration has had on the development of Canada (e.g., its multicultural character, rural and urban resettlement, interprovincial movement, the brain drain).

Inquiry/Research and Communication Skills

8g42 – formulate questions to guide and analyse research on migration and mobility (e.g.,What barriers exist today for new immigrants? In which time period would it be harder for people to immigrate to Canada – now or a hundred years ago? Where would be the best place to migrate to in Canada?);

8g43 – locate relevant information from a variety of primary and secondary sources (e.g., *primary sources*: surveys, statistics, interviews, field studies; *secondary sources*: maps, illustrations, print materials, videos, CD-ROMs, Internet sites);

8g44 – communicate the results of inquiries for specific purposes and audiences, using computer slide shows, videos, websites, oral presentations, written notes and reports, illustrations, tables, charts, maps, models, and graphs (e.g., write a story/journal relating the difficulties faced by past or present immigrants; create a slide show to show how technological changes have affected mobility; create a video presentation encouraging immigrants to come and live in Canada);

8g45 – use appropriate vocabulary (e.g., *accessible, barriers, migration, mobility, immigration, emigration, refugees, modes of transportation, push factors, pull factors*) to describe their inquiries and observations.

Map, Globe, and Graphic Skills *

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

Application

8g47 – use a decision-making model to select an ideal place to live, and present this decision to other members of the class;

8g48 – investigate the migrational roots of the members of the class and relate them to Canada's cultural development.

Healthy Living

Overall Expectations

8p1 • adopt personal goals that reflect healthy eating practices;

8p2 • identify the physical, emotional, interpersonal, and spiritual aspects of healthy sexuality (e.g., respect for life, ethical questions in relationships, contraception);

8p3 • identify local support groups and community organizations (e.g., public health offices) that provide information or services related to health and well-being;

8p4 • analyse situations that are potentially dangerous to personal safety (e.g., gang violence) and determine how to seek assistance;

8p5 • apply living skills (e.g., decision-making, problem-solving, and refusal skills) to respond to matters related to sexuality, drug use, and healthy eating habits.

Healthy Eating

8p6 – analyse the effects of undereating (e.g., as a result of bulimia or sports dieting) and overeating (e.g., obesity) on health and well-being;

8p7 – identify ways to maintain a healthy body weight (e.g., physical activity);

8p8 – adopt personal food plans, based on nutritional needs and personal goals, to improve or maintain their eating practices

Growth and Development

8p9 – explain the importance of abstinence as a positive choice for adolescents;

8p10 – identify symptoms, methods of transmission, prevention, and high-risk behaviours related to common STDs, HIV, and AIDS;

8p11 – identify methods used to prevent pregnancy;

8p12 – apply living skills (e.g., decision-making, assertiveness, and refusal skills) in making informed decisions, and analyse the consequences of engaging in sexual activities and using drugs;

8p13 – identify sources of support (e.g., parents/ guardians, doctors) related to healthy sexuality issues;

Personal Safety / Injury Prevention

8p14 – analyse situations (e.g., hitchhiking, gang violence, violence in relationships) that are potentially dangerous to personal safety;

8p15 – identify support services (e.g., the school guidance department, shelters, Kids' Help Phone) that assist victims of violence, and explain how to access them;

Substance Use / Abuse

8p16 – outline the possible negative consequences of substance use and abuse (e.g., fetal alcohol syndrome, effects of steroid use, accidents when drinking and driving);

8p17 – identify those school and community resources that are involved in education about substance use and abuse, and those involved in preventing and treating substance abuse;

8p18 – describe causes and symptoms of stress and positive ways (as opposed to substance use) to relieve stress;

8p19 – apply the steps of a decision-making process to address age-specific situations related to personal health and well-being in which substance use or abuse is one of the factors.

Fundamental Movement Skills

Overall Expectations

8p20 • apply a variety of movement skills in combination and in sequence (locomotion/travelling, manipulation, and stability) in physical activities (e.g., dance) and formal games (e.g., badminton, soccer);

8p21 • apply the principles of movement while refining movement skills (e.g., dribbling a ball quickly and slowly in basketball).

Locomotion / Travelling Skills

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

Manipulation Skills

8p23 – throw, pass, or shoot an object (e.g., a ball) to a partner or a target while being defended;

8p24 – shoot an object at a target (e.g., a basket or a goal) for distance and accuracy;

8p25 – hit an object (e.g., a ball or badminton bird) using the hand or a piece of equipment, using backhand and forehand motions;

8p26 – dribble a ball, using the dominant hand or foot, in different directions and at different speeds, while being defended;

8p27 – perform movement skills in sequence (e.g., shoot or pass a ball from a dribble);

Stability Skills

8p28 – balance in control while moving on and off equipment (e.g., step aerobics);

8p29 – perform rolls and balances in sequence (e.g., consecutive straddle rolls to a front support balance);

8p30 – perform rotations on equipment (e.g., front roll on a bench).

Active Participation

Overall Expectations

8p31 • participate on a regular basis in physical activities that maintain or improve physical fitness (e.g., aerobics to music);

8p32 • apply living skills (e.g., basic problem-solving, decision-making, goal-setting, and conflict-resolution techniques) in physical activities (e.g., games, gymnastics, dance, outdoor pursuits);

8p33 • transfer appropriate interpersonal skills (e.g., exhibiting etiquette, fair play, co-operation, and respectful behaviour) to new physical activities;

8p34 • follow safety procedures related to physical activity, equipment, and facilities, and continue to take responsibility for personal safety.

Physical Activity

8p35 – participate vigorously in all aspects of the program (e.g., indoor soccer, cricket);

8p36 – apply the factors that motivate their daily activities (e.g., health benefits, interpersonal interaction) to positively influence others (e.g., family, friends, members of the community) to become physically active;

Physical Fitness

8p37 – improve or maintain their personal fitness levels by participating in sustained moderate to vigorous fitness activity for a minimum of twenty minutes each day, including appropriate warm-up and cool-down procedures;

8p38 – assess their personal levels of physical fitness on an ongoing basis comparing to past performances, and apply the information to their short- and long-term goals;

Living Skills

8p39 – apply a goal-setting process (e.g., set a realistic goal, identify and address barriers, prepare an action plan, determine and access sources of support, and identify how to know when the goal has been reached) to short- and long-term goals related to physical activity or fitness;

8p40 – demonstrate respectful behaviour towards the feelings and ideas of others;

8p41 – follow the rules of fair play and sports etiquette in games and activities (e.g., maintaining self-control whether winning or losing).

Music

Overall Expectations

8a1 • demonstrate an understanding of the basic elements of music specified for this grade (see below) through listening to, performing, and creating music;

8a2 • sing and play instruments with expression and proper technique (e.g., with correct breathing or fingering);

8a3 • use correctly the musical terminology associated with the specific expectations for this grade;

8a4 • read, write, and perform from musical notation accurately and fluently;

8a5 • communicate their understanding and knowledge of music in appropriate ways (e.g., compare the characteristics of music of different historical periods; represent their response to music through painting);

8a6 • identify and perform music of a variety of cultures and historical periods.

Knowledge of Elements

8a7 – read music appropriate for this grade, showing their understanding of the necessary aspects of notation (e.g., clefs, key signatures);

8a8 – identify and perform the major scale in keys that they encounter in the music they sing or play;

8a9 – demonstrate the ability to produce the same pitch as others, vocally or instrumentally (e.g., in pairs, in sections, in a large group);

8a10 – identify metres and the corresponding time signatures in the pieces they play or sing;

8a11 – play or sing music with appropriate articulation and phrasing;

8a12 – conduct 2/4, 3/4, and 4/4 time, or a metre in a piece appropriate for their grade, correctly using standard conducting patterns (e.g., indications of upbeats, downbeats, and entries);

8a13 – demonstrate understanding of the markings and Italian terms for dynamics, tempo, articulation, and phrasing in the music they play or sing;

8a14 – explain the meaning of D.C. al coda, d.s. al fine, and d.s. al coda;

8a15 – identify the type of texture in music appropriate for the grade;

8a16 – recognize rondo form (ABACA) and theme-and-variations form (A, A1, A2, etc.) in music they perform and hear.

Creative Work

8a17 – sing or play expressively pieces in various styles;

8a18 – create musical compositions that make use of elements of music studied in this grade, write them in standard notation, and perform them;

8a19 – create and perform a short musical that consists of contrasting songs, dialogue, and drama;

8a20 – improvise a solo melodic line (accompanied or unaccompanied).

Critical Thinking

8a21 – recognize and describe the difference between program music (e.g., The Moldau by Smetana) and absolute music (e.g., Symphony No. 40 in G Minor by Mozart);

8a22 – describe some aspects of the historical context of music that they sing, play, or listen to (e.g., identify some major political events, social or philosophical movements, architectural or painting styles);

8a23 – communicate their thoughts and feelings about the music they hear, using language and a variety of art forms and media (e.g., videotape, improvisation, watercolour paintings);

8a24 – describe their response to a musical performance in their community.

Visual Arts

The Arts Expectations — Grade 08

Overall Expectations

8a25 • produce two- and three-dimensional works of art that communicate a variety of ideas (thoughts, feelings, experiences) for specific purposes and to specific audiences, using a variety of art forms;

8a26 • define the principles of design (emphasis, balance, rhythm, unity, variety, proportion), and use them in ways appropriate for this grade when producing and responding to works of art;

8a27 • explain how an artist has used the expressive qualities of the elements and principles of design to affect the viewer, and support their analyses with evidence from the work;

8a28 • use correctly vocabulary and art terminology associated with the specific expectations for this grade.

Knowledge of Elements

8a29 – describe how the repetition of elements of design creates rhythm, which unifies the composition (e.g., the diagonal lines in the trees are repeated in the horses and jockeys, and this repetition helps to link the foreground and the background);

8a30 – describe how the elements of design are used to create the area of emphasis (focal point) in a work of art (e.g., contrasts in colour, line, shape, or texture can serve to emphasize specific aspects of the work);

8a31 – describe how the elements of design are used to create formal (symmetrical) and informal (asymmetrical) balance in compositions;

8a32 – explain how the size, scope, and intent of a work determine which tools, materials, and techniques the artist will use (e.g., liquid tempera, large brushes, and mural paper for making a mural);

8a33 – use tools, materials, and techniques correctly, selecting those that are appropriate for the size, scope, and intent of the work.

Creative Work

8a34 – organize their art works to create a specific effect, using at least two of the principles of design specified for this grade (e.g., create a work of art using rhythm and emphasis to communicate a particular mood);

8a35 – produce two- and three-dimensional works of art (i.e., works involving media and techniques used in drawing, painting, sculpting, printmaking) that communicate a range of thoughts, feelings, and experiences for specific purposes and to specific audiences (e.g., create an illustration for a children's book, using pen and ink and watercolour washes);

8a36 – describe, in their plan for a work of art, the main idea they wish to communicate and the artistic decisions they have made to support that message;

8a37 – identify strengths and areas for improvement in their own work and that of others, and describe possible strategies for improving their work.

Critical Thinking

8a38 – describe how artists representing various periods, styles, and cultures have used similar materials, tools, and the principles of design for a variety of purposes (e.g., the use of design principles in textiles like raffia cloth from Zaire, gowns from the Mandingos of West Africa, and embroidered dresses from Palestine), and recognize that many modern artists and designers (e.g., textile designers) are influenced by designs from other periods and cultures;

8a39 – explain how the effective use of the elements and principles of design contributes to an art work's ability to communicate feelings, convey ideas, and enrich people's lives (e.g., the effective use of formal balance in the design of a building can enable people to feel a sense of order and harmony when looking at or being in that building);

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

Drama & Dance

Overall Expectations

8a41 • evaluate the overall effect of various aspects of drama and dance (i.e., elements, principles, techniques, style);

8a42 • interpret and communicate ideas and feelings drawn from fictional accounts, documentaries, and other material from a wide variety of sources and cultures, selecting and combining complex drama and dance techniques (e.g., "forum theatre");

8a43 • create drama pieces, selecting and using a variety of techniques;

8a44 • critique, orally and in writing, their own and others' work in drama and dance, using criteria developed independently and in a group;

8a45 • critique solutions to problems presented in drama and dance, make decisions in large and small groups, and defend their artistic choices;

8a46 • create different multimedia interpretations of a single work, using available technology to enhance their work in drama and dance performances.

Knowledge of Elements

8a47 – demonstrate understanding of the appropriate use of the voice, gestures, and the level of language in different dramatic situations;

8a48 – describe theatrical dance performances, and distinguish between the types or styles used (e.g., ballet, modern, jazz, folk, ethnic);

8a49 – write in role in various forms (e.g., monologues, speeches, radio or television broadcasts), showing understanding of the complexity of a dramatic situation and using appropriate vocabulary, tone, and voice for the character portrayed;

8a50 – use the vocabulary of drama and dance correctly (e.g., metaphor in drama, symmetry in dance composition) in analysing, explaining, and critiquing the meaning and effect of their own and others' work;

8a51 – identify ways of sustaining concentration in drama and dance (e.g., focusing on the character's motives in order to stay in role);

8a52 – identify and evaluate the variety of choices made in drama and dance that influence groups to make different interpretations or representations of the same materials;

8a53 – choose technology for enhancing their drama and dance work, and evaluate the effectiveness of their choice (e.g., camcorders, lighting dimmers).

Creative Work

8a54 – write in role, analysing the subtext of a script and the attitudes and points of view of the characters portrayed;

8a55 – write, memorize, and present, through drama and dance, short documentary scenes based on their improvisational work and on source material drawn from diverse cultures;

8a56 – create dance compositions based on material explored in drama;

8a57 – create a dance warm-up program, alone or with another student;

8a58 – select appropriate themes that deal with specific situations and that are aimed at a specific audience;

8a59 – organize and carry out a group improvisation;

8a60 – produce pieces that deal appropriately with youth problems (e.g., pieces created through forum theatre);

8a61 – produce work as a member of an ensemble.

Critical Thinking

8a62 – review drama and dance performances, orally or in writing, critiquing the use of elements and techniques in the particular genre of the piece;

8a63 – evaluate the overall effect of a performance in drama and dance, analysing the key elements;

8a64 – identify and discuss the qualities and skills needed to create and perform productions in drama and dance;

8a65 – produce pieces of writing in which they reflect on their experiences in drama and dance, and in which they show their ability to analyse and find solutions to problems in real life;

8a66 – dramatize material that they have researched from primary sources (e.g., historical documents), and use it effectively in presenting documentary scenes.