

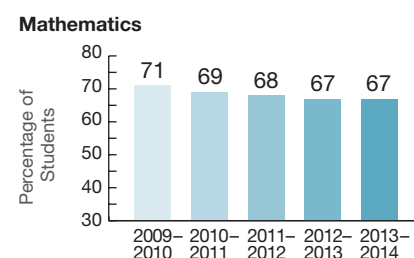
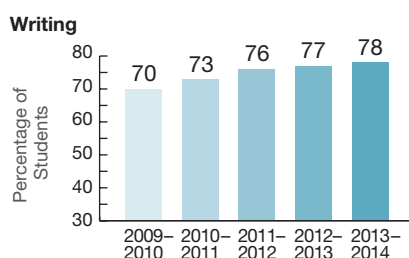
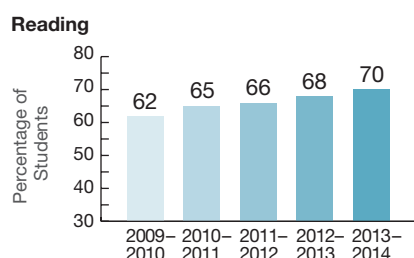
Summary of Results and Strategies for Teachers, 2013–2014

ASSESSMENTS OF READING, WRITING AND MATHEMATICS, PRIMARY AND JUNIOR DIVISIONS

PRIMARY DIVISION Comparison of Provincial Results Over Time

Percentage of All Grade 3 Students at or Above the Provincial Standard (Levels 3 and 4) Over Time

	2009–2010	2010–2011	2011–2012	2012–2013	2013–2014
NUMBER OF STUDENTS	# = 127 789	# = 124 117	# = 126 455	# = 127 645	# = 127 505
READING	62%	65%	66%	68%	70%
WRITING	70%	73%	76%	77%	78%
MATHEMATICS	71%	69%	68%	67%	67%



- There were 127 505 Grade 3 students at the time of the 2013–2014 assessment.
- The primary-division assessment is based on *The Ontario Curriculum, Grades 1–8: Language* (revised 2006) and *The Ontario Curriculum, Grades 1–8: Mathematics* (revised 2005).

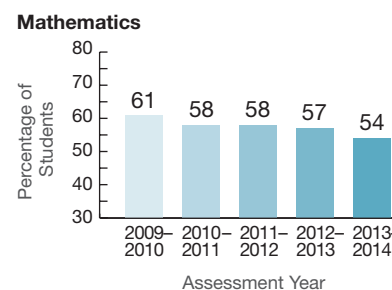
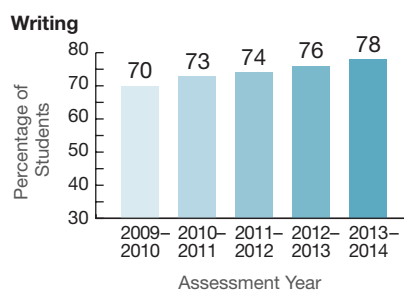
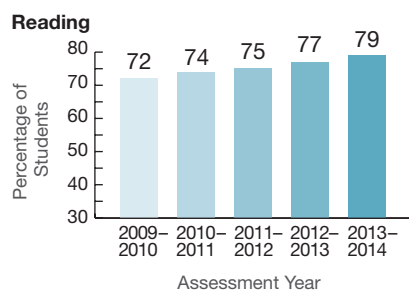
Observations

- Over the past five years, the percentage of students performing at or above the provincial standard in reading has increased steadily, from 62% to 70% (i.e., an eight-percentage-point increase).
- Over the past five years, the percentage of students at or above the provincial standard in writing has increased steadily, from 70% to 78% (i.e., an eight-percentage-point increase).
- Compared to five years ago, the percentage of students at or above the provincial standard in mathematics has decreased by four percentage points, from 71% to 67%.

JUNIOR DIVISION Comparison of Provincial Results Over Time

Percentage of All Grade 6 Students at or Above the Provincial Standard (Levels 3 and 4) Over Time

	2009–2010	2010–2011	2011–2012	2012–2013	2013–2014
NUMBER OF STUDENTS	# = 134 294	# = 132 308	# = 129 477	# = 131 589	# = 127 286
READING	72%	74%	75%	77%	79%
WRITING	70%	73%	74%	76%	78%
MATHEMATICS	61%	58%	58%	57%	54%



- There were 127 286 Grade 6 students at the time of the 2013–2014 assessment.
- The junior-division assessment is based on *The Ontario Curriculum, Grades 1–8: Language* (revised 2006) and *The Ontario Curriculum, Grades 1–8: Mathematics* (revised 2005).

Observations

- Over the past five years, the percentage of students performing at or above the provincial standard in reading has increased steadily, from 72% to 79% (i.e., a seven-percentage-point increase).
- Over the past five years, the percentage of students at or above the provincial standard in writing has increased steadily, from 70% to 78% (i.e., an eight-percentage-point increase).
- Compared to five years ago, the percentage of students at or above the provincial standard in mathematics has decreased by seven percentage points, from 61% to 54%.

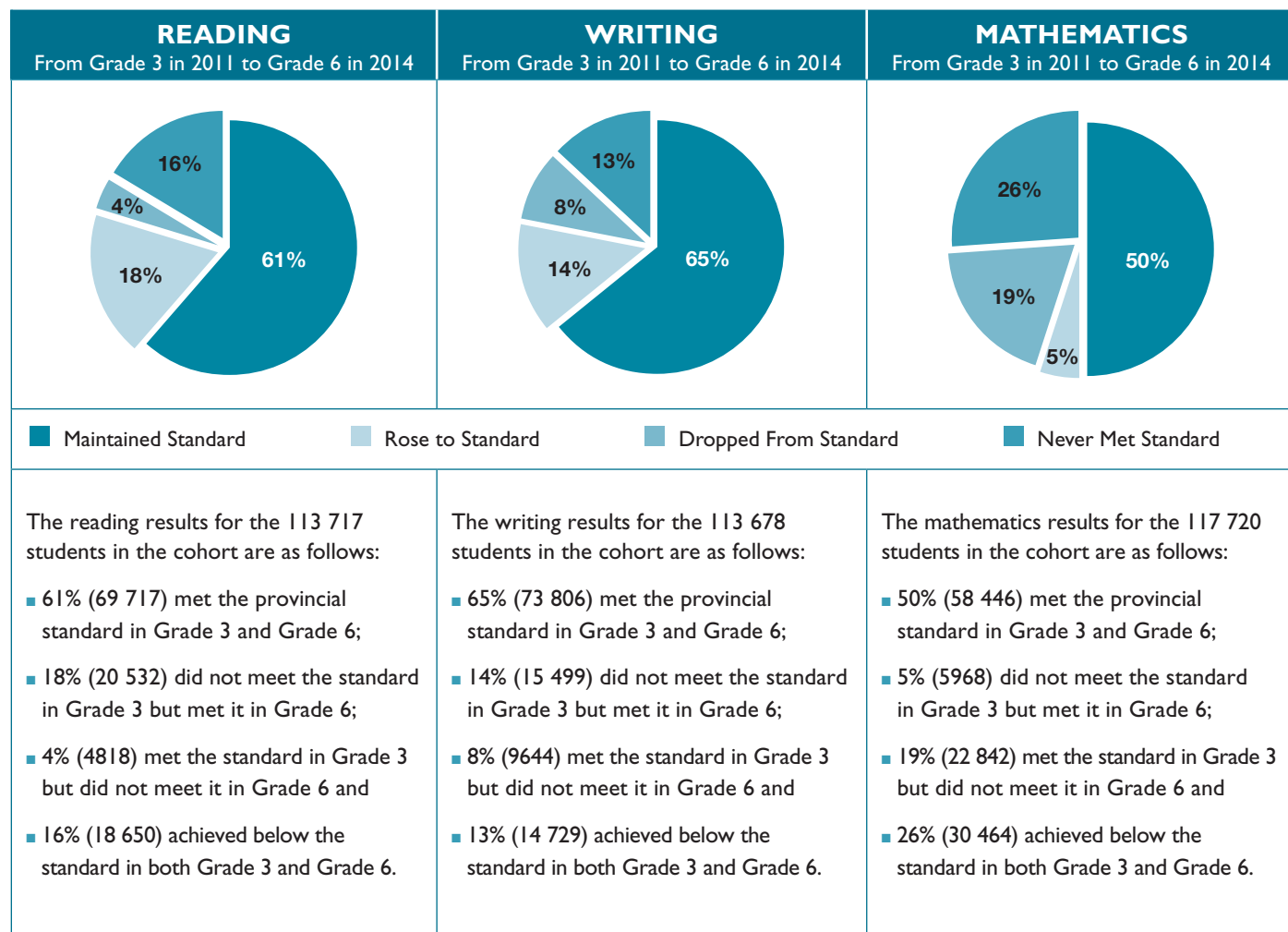
TRACKING STUDENT PROGRESS FROM GRADE 3 IN 2011 TO GRADE 6 IN 2014

Early Identification of Students Who Are Not Meeting the Standard in Grade 3 Is Key for Their Success in Grade 6

The pie charts below show the performance of the Grade 6 students who were in Grade 3 for the primary-division provincial assessment in 2011. The number of students whose results were available for each component of the two assessments (including those who participated, were exempted or did not provide enough work to be scored) is indicated below each pie chart.

English-Language Students

There were 127 286 Grade 6 students in 2014.



Note: Student results in these analyses have been linked using the students' names and their Ontario Education Numbers (OENs). Not all students could be matched. Reasons include the student's recent arrival in Ontario (i.e., he or she was not in the school system for the previous assessment), misspelled names or inaccurate OENs. Numbers have been rounded off to the nearest whole percent.

STRATEGIES FOR TEACHERS: PRIMARY DIVISION

The following observations and suggested strategies for improvement are meant to assist educators in helping students develop and demonstrate their knowledge and skills in reading, writing and mathematics. The suggestions are based on an analysis of students' performance on the 2013–2014 Assessment of Reading, Writing and Mathematics, Primary Division, as well as on those of the previous four school years (2009–2010 to 2012–2013), and on feedback from teachers who scored the 2013–2014 assessment.

The released 2013–2014 *Language 1* booklet can be accessed on the EQAO Web site, www.eqao.com.

For more information on the skills assessed and the kinds of questions used to measure them, see the primary-division *Framework*, on the EQAO Web site. For more information on the terms in bold print, refer to the list of resources at the end of this section.

OBSERVATIONS AND STRATEGIES FOR IMPROVEMENT: READING

Through a combination of multiple-choice and open-response questions about narrative, informational, poetic and graphic reading texts, the primary EQAO assessment focuses on three reading skills:

Reading Skill 1: understanding explicitly stated information and ideas

Reading Skill 2: understanding implicitly stated information and ideas

Reading Skill 3: making connections between information and ideas in a reading selection and personal knowledge and experience

PRIMARY DIVISION: READING	
Observations	Strategies for Improvement
Reading Skills As in previous years, primary students performed better on multiple-choice than on open-response questions when demonstrating their reading comprehension. Students performed best on multiple-choice questions measuring Reading Skill 1 (understanding explicitly stated information and ideas). They performed slightly better on Reading Skill 3 (making connections between the information and ideas in a reading selection and their personal knowledge and experience) than on Reading Skill 2 (understanding implicitly stated information in a reading selection). Similarly, on open-response questions, students performed better on those measuring Reading Skills 1 and 3. Their performance was somewhat lower on those measuring Reading Skill 2. Student performance on all three reading skills declined somewhat this year. For multiple-choice questions, the greatest decline was on Reading Skill 3. For open-response questions, the greatest decline was on Reading Skills 2 and 3. As in previous years, scorers observed that a Code 30 or 40 response to an open-response question demonstrated reading comprehension through the use of key words from the question and by answering all aspects of the question. For example, when asked “how Aldo’s attitude about using the book changes after he starts to skate” in “The In-Line Skating Lesson,” effective responses clearly explained what his attitude was before and after he started to skate. In addition, these responses provided specific information from the text, with an explanation of its relevance.	Use daily guided reading to provide opportunities for students to practise their skills through gradual release of responsibility and with teacher support. Regularly examine students’ misconceptions, reasoning ability and degrees of understanding. Regularly include shared and independent practice to increase reading proficiency and build subject-specific knowledge and vocabulary. Provide sequences of direct instruction for the whole class, small groups and individuals according to needs identified through the assessment of student reading skills. Refer to the <i>EQAO Connects</i> article “Making Connections Makes Sense” for ideas on how to help students access their background and content-area knowledge to demonstrate reading comprehension and generate writing. This will assist them with open-response questions assessing Reading Skill 3. Use a few core thinking routines as protocols for exploring ideas (e.g., “what makes you say that?”) to make thinking visible to students and their peers, and to demonstrate pathways to encourage higher-order thinking. In order to help students monitor their reading, implement reciprocal teaching, a research-based technique that highlights key strategies effective readers use to focus on important components of the reading process (e.g., questioning, summarizing, clarifying, predicting). Continue to teach close reading of texts, and model the analysis and rereading involved in using the text to support answers with specific evidence. Use text-dependent questions, and encourage students to focus on key words to ensure they

PRIMARY DIVISION: READING (continued)	
Observations	Strategies for Improvement
Reading Skills (continued)	answer all parts of the question. Teach the differences in expectations among question instructions (e.g., explain how, explain why, explain whether, describe, compare), and provide students with opportunities to practise responding to each question type. Model how to add relevant details when responding to reading comprehension questions. Encourage students to select only a few key words when composing their responses. Select essential graphic organizers to help students visually represent information from a text (e.g., by comparing and contrasting, sequencing). Use a Go Chart to identify the beginning, middle and end of the narrative and to depict relationships between these components. Have students locate phrases, sentences and paragraphs in narrative texts that signal the text's particular elements, such as setting or action.
Reading Expectations This year, students performed best on multiple-choice questions measuring Overall Reading Expectation 1 (read and demonstrate an understanding of a variety of literary, graphic and informational texts, using a range of strategies to construct meaning). Their performance on these questions was consistent with that of 2013. They had the most difficulty on multiple-choice questions measuring Overall Reading Expectation 2 (recognize a variety of text forms, text features and stylistic elements and demonstrate understanding of how they help communicate meaning). Performance on multiple-choice questions measuring Overall Reading Expectations 2 and 3 (the latter: use knowledge of words and cueing systems to read fluently) has declined since 2013. Once again, students performed better on open-response questions measuring Overall Reading Expectation 1 than on those measuring Overall Reading Expectation 2. Performance on questions measuring both expectations has also declined somewhat since 2013. Overall Reading Expectation 3 is measured by multiple-choice questions only.	To nurture reading engagement, fluency and proficiency, provide students with multi-level texts. Written at two or more levels of complexity, these resources promote the understanding of multiple genres, text structures and perspectives on a subject. During discussions of text components, students who are struggling can acquire additional knowledge from their peers to supplement what they have read at their own level. Give students opportunities to explicitly retell and restate what they have read. Model how to use pictures, words and phrases to answer questions (e.g., “how do you know?” and “what clues give us the idea that...?”), which will help students to make inferences about gaps in texts. Use the Four Roles/Resources Model components and the Arc of Inquiry to help address Overall Expectation 2 open-response questions, and provide students with multiple opportunities to practise the associated specific expectations using different text types with a focus on their features. Teach students to recognize the organizational patterns in information texts that might be evident through transitional words and phrases (e.g., “at first,” “later,” “in spring,” “on the one hand,” “on the other”), and explain how the patterns help readers understand the text. Have students identify and examine elements of style, such as how titles relate to ideas in texts, how conversation, or dialogue, is used to show character or develop plot in narrative texts and how an author's word choices affect the text (e.g., to make a setting seem scary or a character seem angry).

PRIMARY DIVISION: READING (continued)	
Observations	Strategies for Improvement
Reading Expectations (continued)	Use the variety of resources found at the end of this document for developing vocabulary in all subject areas (e.g., promoting word consciousness through a word detective approach, engaging in word study games to tackle unfamiliar vocabulary, identifying how connotative and denotative language signals a perspective on a subject).
Text Features, Forms and Genres Students performed best on questions relating to the long narrative and had the most difficulty with questions relating to the graphic text.	Use different types of texts on the same topic to illustrate how the text features, forms and stylistic elements of narrative and informational texts differ. Increase student exposure to graphic texts across all content areas, including those available on the Internet, and deconstruct a variety of these texts, noting their features and components. Provide students with the vocabulary and strategies to explain how different graphic text components and features work together (e.g., what would happen if the images were removed? what features might be added to provide additional information?). Model how to read graphic texts. Examine where inferences need to be made to fill in information between the frames. Use technology to have students create their own graphic texts to communicate information. Examine EQAO questions about graphic texts from previous years' assessments, and use these to guide teaching of the form.

OBSERVATIONS AND STRATEGIES FOR IMPROVEMENT: WRITING

Through a combination of multiple-choice questions, short-writing tasks and long-writing tasks, the primary-division assessment focuses on the following writing skills:

Topic Development

- Content—developing a main idea with sufficient supporting details
- Organization—organizing information and ideas in a coherent manner
- Conventions—use of spelling, grammar, punctuation

PRIMARY DIVISION: WRITING	
Observations	Strategies for Improvement
Writing Skills and Expectations This year, students performed better on multiple-choice questions measuring Overall Writing Expectation 2 (using knowledge of form and style) than on those measuring Overall Writing Expectations 1 (develop and organize content) and 3 (apply knowledge of language conventions and present written work effectively). Performance has improved considerably for questions measuring Overall Writing Expectation 2, but has declined for those measuring Overall Writing Expectations 1 and 3 since 2013. As in the previous five years, when responding to the short- and long-writing tasks, students performed better on Writing Skill 3 (using conventions—spelling, grammar, punctuation—in a manner that does not distract from clear communication) than on Writing Skills 1 (developing a main idea with sufficient supporting details) and 2 (organizing information and ideas in a coherent manner). Nonetheless, this year scorers noted what they believed to be a higher prevalence of students using linking words to help their writing flow and making interesting word choices. For topic development, performance on both short-writing tasks increased by six percentage points. On the long-writing task, overall performance decreased by 10 percentage points. Scorers noted that students who used the planning page to list ideas briefly and provide a detail for each idea were more likely to score a Code 30 or 40 for the long-writing task. Again this year, scorers from across the province reported that, for topic development, written work at Code 20 tended to list several ideas or details with minimal development. Written work at Code 30 or 40 tended to provide effective opening and/or concluding sentences, develop ideas with relevant details and link these together using appropriate transitional words and phrases that signal an organizational framework. For example, on the short-writing task, students were asked to write a paragraph describing a favourite way to stay in touch with friends and explaining why they liked this form of communication. Students who achieved a Code 30 or 40 named and/or described a form of communication and provided relevant and specific details to support their choice.	Before writing, have students orally rehearse ideas through brainstorming, as research indicates that this practice helps students access their prior knowledge about a subject and consequently generate more content. Give students choice for topics, and build background knowledge about writing forms through collaborative inquiry, mini lessons and an examination of various forms of media. Provide opportunities for students to generate texts of all types, with a greater emphasis on non-fiction writing forms. To support struggling writers, use the strategies recommended in the resources listed at the end of this document. Additionally, instead of having struggling students focus on an entire draft, provide descriptive feedback and then encourage them to revise simple components. For example, to make the action more exciting, students can both draw and write an idea or revise several phrases, or add one sentence of content or several adjectives and adverbs. Enlist students in developing success criteria, and provide anchor charts to reinforce a few simple writing requirements at a time (e.g., developing an idea with at least two details, using linking words, combining several sentences). Before revision and after writing, use self-, peer- and teacher feedback related to success criteria to provide precise information to students about what they are doing well, what needs improvement and what specific steps they can take to improve their work. Provide questions, such as the following, to guide the process: - Is there a clear opening sentence? Underline ideas that support it. - Are the ideas supported by specific details? What other useful ideas might be added? - Circle words and phrases that link ideas. Do these words help readers understand how the text is organized (e.g., before/after; similar/different)? What links might be added? - Highlight correct punctuation in your peer's work. Circle places where correct punctuation is needed.

PRIMARY DIVISION: WRITING (continued)	
Observations	Strategies for Improvement
Writing Skills and Expectations (continued) See EQAO's student assessment booklets and scoring guides for examples of all codes: http://www.eqao.com/Educators/Elementary/036/036.aspx?Lang=E&gr=036	During the revision process, teach mini lessons on writing conventions in the context of writers' workshops. Focus on the purpose punctuation serves in a text. Have students act out their understanding of punctuation kinaesthetically by having them walk in one direction as written work is read aloud, stopping at a pause or break requiring a punctuation mark between phrases and sentences, marking the spot with a pencil, and repeating as needed. Occasionally have students practise writing to EQAO-like prompts. Review what is meant by the purpose, audience and topic of prompts, and show students the importance of considering these before beginning to write. Review previous EQAO test booklets with students so that they understand that the writing prompts are separate from the reading questions.

OBSERVATIONS AND STRATEGIES FOR IMPROVEMENT: READING AND WRITING

PRIMARY DIVISION: READING AND WRITING	
Observations	Strategies for Improvement
Student Groups Girls continued to outperform boys on both multiple-choice and open-response questions for all reading selections. The difference in their performance varied by passage, with less than a two-percentage-point gap on the graphic text and poem and a six-percentage-point gap on the long narrative. Girls also continue to outperform boys on all multiple-choice writing questions and on short- and long-writing tasks. The gap in favour of girls for conventions and topic development in both short- and long-writing tasks has remained consistent over time. Again, this year, girls received approximately twice the number of Code 40 scores as did boys. In reading, English language learners continued to close the gap with the general population on questions related to all text types. When demonstrating all three reading skills, they received the same or a larger number of Code 40 responses than did the general population on eight of the 10 open-response reading questions. The performance gap between English language learners and the general population for topic development on the short- and long-writing tasks was minimal. Additionally, this year their performance on the long-writing task for the use of conventions was slightly better than that of the general population. Both populations performed about the same for the two short-writing tasks. Students with special education needs had more difficulty with questions measuring Overall Reading Expectation 2 than with those measuring Overall Reading Expectations 1 and 3. The gap in performance between these students and the general population decreased somewhat for Overall Expectations 1 and 2 and remained about the same for Overall Expectation 3. As in 2012 and 2013, the smallest gap in performance occurred on questions relating to the graphic text, and the largest gap was on questions related to the long narrative. This year, performance gaps for the graphic and information texts, short narrative and poem all decreased. There continues to be a significant gap between students with special education needs and the general population on multiple-choice items for all three writing skills. Nearly one-quarter of students with special education needs performed at or above the provincial standard for topic development for all three writing tasks, compared to the approximately one-third of students in the population as a whole.	See the recommendations at the end of the junior-division reading and writing “Observations and Strategies for Improvement.”

OBSERVATIONS AND STRATEGIES FOR IMPROVEMENT:
READING AND WRITING

PRIMARY DIVISION: READING AND WRITING	
Observations	Strategies for Improvement
Assessment Practices See the recommendations at the end of the junior-division reading and writing “Observations and Strategies for Improvement.”	
School Improvement Planning See the recommendations at the end of the junior-division reading and writing “Observations and Strategies for Improvement.”	

OBSERVATIONS AND STRATEGIES FOR IMPROVEMENT: MATHEMATICS

In May 2014, EQAO published a study that examined mathematics achievement of a cohort of students on the EQAO assessments from Grade 3 to Grade 6 to Grade 9 (academic and applied courses). The results from Grade 3 to Grade 6 particularly can be used to examine the impact of achievement early in a student's journey through elementary school. Longitudinal analysis of student performance provides principals, teachers, district policy-makers, Ministry of Education staff, researchers and the public with important insights into students' progress at key points during their schooling. For example, nearly three in five (59%) met the standard in both Grade 3 and Grade 6 (maintained the standard). Additional pathway information from the Grade 3 and Grade 6 mathematics assessment components can be found in a research paper posted on EQAO's public Web site: <http://www.eqao.com/Research/pdf/E/Detailed-Cohort-Tracking-Math-2012.pdf>.

Through a combination of multiple-choice and open-response questions based on the *Ontario Curriculum* expectations from the strands Number Sense and Numeration, Measurement, Geometry and Spatial Sense, Patterning and Algebra, and Data Management and Probability, the primary-division EQAO assessment focuses on the following categories of knowledge and skills:

- Knowledge and Understanding—facility with subject-specific content (knowledge) and comprehension of its meaning and significance (understanding);
- Application—ability to select the appropriate “tool” or get the necessary information and apply it effectively to solve the problem and
- Thinking—ability to select and sequence a variety of tools to solve a problem and demonstrate a critical-thinking process.

PRIMARY DIVISION: MATHEMATICS	
Observations	Strategies for Improvement
General This year, girls and boys performed approximately the same on all strands and categories of knowledge and skills overall, except for the Data Management and Probability strand, on which girls performed slightly better. As in the past two years, students continue to perform best overall on questions mapped to Knowledge and Understanding and least well on questions mapped to Thinking. As in the past three years, students performed better overall on multiple-choice than on open-response questions. As last year, English language learners performed slightly below the general population, with similar trends in achievement across all strands, categories of knowledge and skills, and question types. Students with special education needs continued to perform approximately 15 percentage points below the general population overall on all strands, categories of knowledge and skills, and question types. The greatest gaps in performance were evident overall on questions mapped to Knowledge and Understanding and on multiple-choice questions in general.	Differentiate instruction by using a range of effective instructional and assessment strategies in order to appeal to the various ways in which students learn and demonstrate their learning. Promote student thinking and engagement through interesting real-world problems that have a low entry point and a high ceiling, so that students are constantly challenged and working at the most appropriate level. Have students get involved through Minds-On, Action and Consolidation components to lessons. Continue to provide opportunities for teachers and instructional leaders to participate in collaborative teacher inquiry to examine evidence-based teaching strategies. Use data from various sources to research the relationship between specific practices and student learning. Continue to identify teacher learning needs in the areas of content and pedagogy, and integrate new knowledge about effective instructional strategies into classroom practice. Plan, learn and teach together as a team. Continue to analyze student work for evidence of learning by using assessments for learning and teacher moderation. Use the findings to modify or enhance future instructional approaches and assessments. Continue to observe student interactions for the use of mathematical language for effective communication of understandings of concepts. Require students to explain their thinking, and consider ways to use technology to record their voices as they work on problems. Listen to the recordings to

PRIMARY DIVISION: MATHEMATICS (continued)	
Observations	Strategies for Improvement
	develop an understanding of the students' thinking and recognize misconceptions. Use these findings to plan next steps and productive teacher responses that scaffold, redirect, probe or extend as required. Continue to create physical and social environments that optimize mathematical learning. Decide which solutions you want to have displayed, in which order and how you will use them to communicate (e.g., through bansho or a gallery walk) to help students understand the mathematical ideas that have been the focus of the lesson. Display student solutions, and collaboratively construct math strategy walls, anchor charts and other visual displays of mathematical ideas. Continue to use recommendations from Eight Tips for Asking Effective Questions (e.g., anticipate student thinking, link to learning goals, pose open questions, pose questions that actually need to be answered, pose questions that open up the conversation to include others). Apply the math scales from <i>Understanding Levels of Achievement: Using EQAO Information to Improve Student Learning, Primary Division</i> to student work in order to determine next steps. Continue to engage students in different types of math talk as part of robust thinking. Listen for indications that students understand key ideas. Explore the practices of productive math discussions when conducting such exchanges class-wide. In order to ensure that students understand that multiple-choice questions often involve calculations, expect them to provide evidence of the processes they use to solve them. Work with students to make their thinking visible, and provide models of how to answer open-response questions with accurate and precise written communication of mathematical thinking. Have students work in pairs and small groups to answer both open-response and multiple-choice questions. Combine classroom evidence with the information available through the EQAO Reporting application to examine the needs of individual students and groups of students. Target interventions and monitor evidence to gauge their effect. Incorporate the accommodations EQAO permits for the assessment, listed in the <i>Guide for Accommodations, Special Provisions and Exemptions</i>. Incorporate EQAO's sample assessment questions as students explore and work through various curriculum expectations in all strands. Use these questions and their scoring guides to generate discussions and help students become aware of common errors and misconceptions and the requirements for a complete solution.

PRIMARY DIVISION: MATHEMATICS (continued)	
Observations	Strategies for Improvement
Number Sense and Numeration Students performed well on multiple-choice questions involving the multiplication of one-digit numbers and division by a one-digit number with and without a context. Students performed less well on the multiple-choice question mapped to Thinking that involved money and required them to determine the cost of a purchase. Scorers of the open-response question requiring students to represent an amount of money using coins and bills noted that students who did not perform well often forgot to add some coins (e.g., toonies) or did not represent the amount using the least number of coins and bills (e.g., omitted the bill). They also noted that students often showed work effectively by grouping coins and were able to represent money using proper conventions.	Continue to promote mental math by encouraging students to consider the reasonableness of answers. Continue to provide various strategies, including the purposeful design of lessons, the careful sequencing of student activities and appropriate interventions and scaffolds for student learning to enable students to determine the value of coins and bills (including by circling coins to group them). Continue to encourage students to use proper mathematical conventions in questions involving money.
Measurement In 2014, the general population performed least well overall on the questions from this strand and the strand Geometry and Spatial Sense. Students performed well on the questions mapped to Knowledge and Understanding that required them to select the most appropriate unit to measure a length and estimate the mass of objects. Scorers of the open-response question in this strand noted that students who did not perform well did not complete all the steps required or did not show their work for all steps.	In order to reinforce understanding, continue to emphasize the importance of including units when comparing measurements of objects. Give opportunities for students to be exposed to a variety of strategies to solve questions that reflect real-world problems. Emphasize the process of problem solving by teaching students to develop, select, apply and compare a variety of strategies as they pose and solve problems and conduct investigations. Use the Four-Step Problem-Solving Model, and continue to integrate the mathematical process expectations.
Geometry and Spatial Sense In 2014, the general population performed least well overall on the questions from this strand and the Measurement strand. Students did not perform well on the multiple-choice and open-response questions requiring them to identify geometric properties of polygons. Scorers of the open-response question involving the geometric properties of a polygon noted that some students had difficulty determining the right angles in some shapes.	Provide further opportunities for students to identify geometric properties of various polygons in different orientations, and create a responsive mathematics learning environment that encourages all students to participate. Use strategies that require all students to communicate their understanding using appropriate mathematical terminology (e.g., inside-outside circle).

PRIMARY DIVISION: MATHEMATICS (continued)	
Observations	Strategies for Improvement
Patterning and Algebra In 2014, students performed best overall on questions from this strand. Students performed best on the multiple-choice and open-response questions in this strand requiring the extension of patterns. Scorers of the open-response question involving a shrinking pattern noted that even though students demonstrated an understanding of the number pattern, some had difficulty describing it. Scorers also commented that some students used pictures, words and numbers, though all three were not required, so students may not understand when to use each.	Have students extend patterns using a variety of starting points and pattern rules. Continue to provide various manipulatives for students to use to display their patterns. Provide students with opportunities to determine when to use pictures, numbers, words or a combination of these to support their answer, and provide examples where each is most appropriate.
Data Management and Probability Overall, students performed well on questions from this strand this year. On the multiple-choice question requiring students to identify the mode of the data, some may have confused mode with the maximum, as approximately one-quarter of students incorrectly selected the maximum score as their answer. Students performed well on the open-response question requiring them to demonstrate an understanding of fairness in a spinner game. Scorers noted that students had difficulty communicating their understanding of why the spinner was fair or unfair.	Continue to provide opportunities for students to work in small group settings to encourage all students to participate and explain their answers. Further consolidate mathematical terminology as it pertains to this strand, specifically in relation to probability and interpreting data (e.g., mode), by adding terminology to classroom word walls. Provide students with frequent opportunities to use the terminology.

STRATEGIES FOR TEACHERS: JUNIOR DIVISION

The following observations and suggested strategies for improvement are meant to assist educators in helping students develop and demonstrate their knowledge and skills in reading, writing and mathematics. The suggestions are based on an analysis of students' performance on the 2013–2014 Assessment of Reading, Writing and Mathematics, Junior Division, as well as on those of the previous four school years (2009–2010 to 2012–2013), and on feedback from teachers who scored the 2013–2014 assessment.

The released 2013–2014 *Language 1* booklet can be accessed on the EQAO Web site, www.eqao.com.

For more information on the skills assessed and the kinds of questions used to measure them, see the junior-division *Framework*, on the EQAO Web site. For more information on the terms in bold print, refer to the list of resources at the end of this section.

OBSERVATIONS AND STRATEGIES FOR IMPROVEMENT: READING

Through a combination of multiple-choice and open-response questions about narrative, informational, poetic and graphic reading texts, the junior EQAO assessment focuses on three reading skills:

Reading Skill 1: understanding explicitly stated information and ideas

Reading Skill 2: understanding implicitly stated information and ideas

Reading Skill 3: making connections between information and ideas in a reading selection and personal knowledge and experience

JUNIOR DIVISION: READING	
Observations	Strategies for Improvement
Reading Skills and Expectations This year, Grade 6 students performed better on multiple-choice questions measuring Reading Skill 1 (understanding explicitly stated information in the reading selection) and Reading Skill 2 (understanding implicitly stated information in a reading selection) than on those measuring Reading Skill 3 (making connections between the reading selection and their own knowledge and experience). While scores for multiple-choice questions measuring Reading Skills 1 and 3 remained the same as in 2013, scores for Reading Skill 2 increased considerably. As in 2013, students performed better on open-response items measuring Reading Skill 3 than on those measuring Reading Skill 2. Performance on questions measuring Reading Skill 2 declined somewhat this year. Reading Skill 1 is not assessed by open-response questions. This year, the percentages of Grade 6 students scoring a Code 30 or 40 on open-response questions measuring Reading Skills 2 and 3 also decreased somewhat. For all open-response reading tasks, scorers noted fewer irrelevant personal connections to texts than in previous years. More students understood that the direction to “use your own ideas” required specific and relevant ideas about the content of the texts themselves. For example, with respect to question 12 of this year’s poem, which asked students to explain whether they “would enjoy riding the Discombobulator,” scorers noted that successful students included specific and relevant details about the ride that supported their opinion.	To nurture reading fluency, proficiency and engagement, provide students with multi-level texts. Written at two or more levels of complexity, these resources tend to feature multiple genres, text structures and perspectives on a topic. They allow for flexible groupings and text selection based on a variety of interests. During group read-alouds and discussion of text components, struggling students can acquire additional knowledge to that they read at their own level. Model how to make inferences about gaps in texts (e.g., Who does the pronoun “he” refer to in this poem? From whose point of view is this story told? How does the way this paragraph is organized help me understand the main idea?). Have students practise making inferences, with proof, using the “How do you know?” strategy. Review with students the difference between a connection to a text and an extension of ideas about it. Pose questions to help students make connections between a variety of texts as well as their own knowledge (e.g., What do I already know about character traits that helps me understand the characters in this narrative? What have I learned in science that connects to the information about animals in this passage? How could I use a diagram to show the information in this paragraph on plant growth?). See EQAO’s “Making Connections Makes Sense” for more information on accessing content-area knowledge to demonstrate reading comprehension and generate writing.

JUNIOR DIVISION: READING (continued)

Observations

Reading Skills and Expectations (continued)

Scorers also noted that, for the reading tasks, students should be advised that it is unnecessary to rewrite the entire question, which takes up time and space that could be better used for supporting details. For example, in response to the aforementioned question, students could begin with “Yes, because” + idea: e.g., “I like heights” + specific and relevant details from the text that mention the ride’s height.

Reading Expectations

Grade 6 students continue to perform best on multiple-choice questions measuring Overall Reading Expectation 1 (read and demonstrate an understanding of a variety of literary, graphic and informational texts, using a range of strategies to construct meaning), and their performance on them improved this year. Performance also improved considerably this year on multiple-choice questions measuring Overall Reading Expectation 2 (recognize a variety of text forms, text features and stylistic elements and demonstrate an understanding of how they help communicate meaning), although it was lower than on those measuring Overall Reading Expectation 1. Students’ weakest performance was on multiple-choice questions measuring Overall Reading Expectation 3 (use knowledge of words and cueing systems to read fluently), on which there was minimal change from last year.

Performance on open-response questions for Overall Reading Expectations 1 and 2 decreased slightly since 2013, and students continued to perform less well on questions assessing Overall Reading Expectation 2. Overall Reading Expectation 3 is not assessed through open-response questions.

Scorers reported that students who scored the top codes (Codes 30 and 40) on open-response reading tasks tended to use key words from the question to focus their answer and consistently provided specific and relevant details from the text as support. Students who explained the relationship between their support and the rest of their answer received higher scores.

For example, when asked, with respect to the informational text (“Walking Sticks”) to “Explain why having a variety of survival skills is helpful to the walking stick,” successful students included specific references from the text to the survival skills described therein, provided an explanation of why the variety was important and explained the connection between having a variety of skills and survival. Scorers noted that, at lower scores, text support was often vague and referred to survival skills in general, not a variety, or none at all.

In response to question 12 of the narrative text “Smallmouth on the Fly,” which asked students to “explain how the author’s choice of words in paragraph 5 creates a sense of excitement about fly-fishing,” scorers noted that successful students identified and linked specific words in the paragraph that create excitement and explained their effect on the reader.

Strategies for Improvement

Have students identify and compare the different elements of narrative, informational and graphic text (e.g., for narrative: character, theme, main idea, setting). Provide students with frequent practice recognizing and articulating their understanding of how, separately and together, different **text forms, features and stylistic elements** communicate meaning.

Model and provide students with multiple opportunities to examine elements of **style**, such as how titles relate to ideas in texts, how dialogue is used to show character or develop plot and how an author’s word choices signal an opinion toward a subject.

Provide challenging **inquiry**-driven tasks involving student choice that integrate subjects to enable students to build **content-area knowledge**, and **academic language** and **vocabulary**.

For all students, especially those who struggle, provide direct instruction in all aspects of **morphology** (word endings, derivations and compounds) to increase vocabulary and support reading achievement. Have students use tools such as word sums (im + possible + ly) and word matrices to identify components of word construction and learn how to build new words. See **Morphology Works**, at the end of this document for additional word-building activities.

Refer to the resources at the end of this document for a variety of strategies and rich activities to build **vocabulary**.

Teach students to recognize the **organizational patterns** in information texts that might be evident through transitional words and phrases (“at first,” “later,” “in spring,” “on the one hand,” “on the other”).

JUNIOR DIVISION: READING (continued)

Observations	Strategies for Improvement
Text Features, Forms and Genres Students performed best on questions related to the long narrative and the information text. They had the most difficulty answering questions related to the poem and the graphic text. Compared with last year's results, performance improved for the long narrative and information text, while for the poem and the short narrative it remained more or less the same.	Increase student exposure to graphical elements in texts and to graphic texts across all content areas. Provide students with opportunities to identify the various features and components of graphic texts and to articulate their purposes. Have students compare and contrast the kind of information that these features and components provide. Provide students with practice using the vocabulary and concepts that explain how different graphic text features work together, using guided questions such as "What would happen if the images were removed?" "What features might be added to provide additional information to help you understand the subject better?" "What sort of graphic feature would you use for that?" "In which section would you look to find . . . ?" Provide students with opportunities to construct their own graphic texts in the form of posters and pamphlets to communicate information. Examine EQAO questions about graphic texts from previous years' assessments, and use these to guide student reading.

OBSERVATIONS AND STRATEGIES FOR IMPROVEMENT: WRITING

Through a combination of multiple-choice questions, short-writing tasks and long-writing tasks, the junior-division assessment focuses on the following writing skills:

Topic Development

- Content—developing a main idea with sufficient supporting details
- Organization—organizing information and ideas in a coherent manner
- Conventions—use of spelling, grammar, punctuation

JUNIOR DIVISION: WRITING	
Observations	Strategies for Improvement
Writing Skills and Expectations This year, students performed better on multiple-choice writing questions measuring Overall Writing Skills 1 (developing a main idea with sufficient supporting details) and 3 (use conventions—spelling, grammar, punctuation—in a manner that does not distract from clear communication) than on those measuring Overall Writing Skill 2 (organize information and ideas in a coherent manner). Performance on questions measuring Overall Writing Skills 2 and 3 declined somewhat since 2013. Performance in topic development and use of conventions on the long-writing task has improved steadily since the 2011 and 2012 assessments, while performance on the two short-writing tasks was similar to that of previous years. Students continue to perform better on conventions than on topic development for all writing tasks. Overall performance on the short- and long-writing tasks remained similar to that on the 2013 assessment. However, the number of students scoring Codes 30 and 40 for topic development on the long-writing task increased, with approximately one-third of all students performing at or above the provincial standard.	Provide sufficient time for students to engage in all aspects of the writing process (e.g., inquiry, generating ideas, selecting a form, drafting and developing content, revising and organizing content), in order to encourage them to become more active in their learning of writing skills. Demonstrate that the writing process is not linear in application by modelling aspects of it, such as reorganizing paragraphs. Use the gradual release of responsibility model and differentiated teaching strategies to help students consolidate their thinking, build understanding of ideas and information, and gain proficiency formulating and recording their thoughts clearly. Use a writer's workshop model to provide small-group direct instruction on a specific topic (e.g., developing an idea), guided writing lessons or independent writing time. During workshop sessions, model higher-order thinking skills when, for example, analyzing the effectiveness of a draft while editing or identifying how text form, content, purpose, audience and language work together. Use workshop opportunities to provide students with timely and criterion-based feedback. Provide opportunities for struggling writers to solicit feedback from their peers using media more accessible than print (e.g., a chat window of a classroom Moodle, a blog or another digital forum). Emphasize the necessity of clear and accurate communication with a specific audience and purpose by providing students opportunities to go public with work they have selected as their best and most polished. Use electronic genres and forms taught in the media literacy strand of the language curriculum to nurture all aspects of the writing process. For example, blogs, podcasts, fan fiction, Web sites, advertisements, Wikis, public service announcements and lyrics all require students to determine the audience and purpose, develop a main idea with relevant and sufficient details, use appropriate vocabulary and language conventions, and adhere to the features and conventions of the form.

JUNIOR DIVISION: WRITING (continued)

Observations	Strategies for Improvement
Text Forms and Writing Conventions As in past years, students performed better on Overall Writing Expectation 3 (apply knowledge of language conventions and present written work effectively) and were less successful on questions measuring Overall Writing Expectations 1 (develop and organize content) and 2 (use knowledge of form and style in writing). On the released short-writing prompt, “Volunteer Work,” students were asked to explain why they had chosen a particular act of volunteerism in the context of school. Scorers noted that effective responses were logically organized and included specific, relevant details (including comparisons and descriptions) to justify why students had made their choice. In contrast, students achieving Code 10 or 20 struggled to present their thoughts clearly. Their writing appeared disjointed (one idea did not flow logically to the next) or underdeveloped (few ideas were presented, or several ideas were presented but lacked meaningful explanations). Furthermore, when developing their argument, students at the lower codes tended to focus on explaining what they’d do. Meanwhile, identifying an area of volunteerism was only an aspect of the writing prompt.	Continue to work with students on the written text forms required by the curriculum. Review the commonly used narrative and non-fiction forms and have students identify their elements. When introducing a writing form, have students analyze mentor texts and co-construct success criteria to facilitate the identification of its features and the production of effective samples. Use Ministry writing exemplars that feature writing tasks (e.g., description, narrative, letter, report) to identify the writing’s form, use of detail, organization and use of conventions, as well as the criteria for effective and ineffective topic development. For example, have students practise revising lower-level exemplars by deleting irrelevant information, reorganizing what remains and adding specific and relevant details. In order to build writing proficiency and flexibility, have students practise “transforming the text form.” Have students find or write about a subject (e.g., falcons) using one form (e.g., poem) and then develop the same content in a different form (e.g., a graphic text on types of falcons and their habitats) in order to acquire a hands-on understanding of text forms, elements and conventions. Practise careful reading of teacher-formulated and EQAO writing prompts, with a focus on how to identify the topic, written form, purpose and audience. Continue to teach grammar and conventions in the context of writing, providing brief lessons as necessary. Have students practise combining sentences to build their understanding of syntax and to learn to write more fluidly as they revise their own work. Impress on students the need to attend to the clarity of their handwriting, and to following the rules for proper grammar, spelling and punctuation (e.g., correct comma placement), both for formal in-class writing and the EQAO assessments. Coach students on the logic of how to spell correctly (e.g., using prefixes, suffixes, roots) in the context of authentic writing situations.

OBSERVATIONS AND STRATEGIES FOR IMPROVEMENT: READING AND WRITING

JUNIOR DIVISION: READING AND WRITING	
Observations	Strategies for Improvement
Student Groups An analysis of the performance of all student groups shows that they followed the same trends as the student population as a whole. This year, for multiple-choice reading questions, the performance gap between female and male students for Overall Reading Expectations 1 and 3 was minimal; however, for Overall Reading Expectation 2, the gap was larger. Over the last five years, the performance gap between female and male students on open-response reading questions has been consistent. This year, the gender gap for overall performance (i.e., on both multiple-choice and open-response questions) was smallest for the graphic text, while the largest gender gap was for the long narrative, the poem and the short narrative text. As in previous years, female students outperformed male students on all multiple-choice writing questions and on all the short- and long-writing tasks. Additionally, girls attained more Codes 30 and 40 for topic development than boys on all open-response writing tasks. Since 2010, the largest gap between the general population and English language learners, in reading skills, has been on questions measuring Reading Skill 1. This year, the performance gap between the general population and English language learners decreased slightly for multiple-choice and remained the same for all open-response reading questions. The gap was smallest for questions measuring Overall Reading Expectation 2. On open-response reading questions, the gap was minimal for Overall Reading Expectations 1 and 2. On multiple-choice writing questions, English language learners once again scored three to five percentage points below the provincial population. On both of the short- and the long-writing tasks, English language learners maintained their gains relative to the overall population since 2010 and specifically since 2013. Their achievement rates are nearly identical to the provincial population for Codes 30 and 40 for topic development. Since 2010, the largest performance gap between the general population and students with special education needs in reading skills has been on questions measuring Reading Skills 1 and 2, although this year the gap decreased somewhat for Reading Skill 1.	To address issues of gender and literacy, adopt practices identified in <i>Towards an Understanding of Gender Differences in Literacy Achievement</i>, an EQAO research study examining strategies employed by schools with small gender gaps in assessment results. In addition, identify the degree to which boys' underachievement intersects with other factors (socioeconomic status, culture) in order to select the most effective interventions for struggling students. Refer to "Lessons from EQAO Data on English language learners in Ontario schools" for whole-school initiatives that provide high-quality instruction and support for English language learners. Continue to incorporate visual tools (e.g., concept maps), vocabulary tools (e.g., word charts) and scaffolds (e.g., paragraph frames) to assist the students across all subject areas. Promote literacy in multilingual contexts by encouraging English language learners to read and write extensively in their own language, in order to build fluency and proficiency. Support them and all students either with purposeful and accountable talk. Support English language learners' integration into the school community and nurture all students' cultural knowledge and language skills by providing them with opportunities to create identity-texts that use mixed media, and spoken and written language, to retell personal stories. (These can then be shared in the classroom and retold in others' languages.) Finally, review the relevant resources listed at the end of this document to fine-tune your understanding of means of addressing the needs of Canadian-born English language learners (e.g., identifying potential gaps between basic interpersonal communication skills and academic language proficiency, and/or determining the specific nature of scaffolding to help them improve their writing). Help students with special education needs increase their abilities to generate and organize their thoughts meaningfully by providing them with and modelling the use of story maps and graphic organizers. Likewise, employ assistive technology in the classroom, such as SMART Ideas or Inspiration Maps, which allow students to create concept maps with colours and pictures. In addition, continue to incorporate assistive technology into typical daily routines. These tools can also bridge gaps for students who struggle with fine motor control, working memory, spelling and various other learning needs. Moreover, research suggests that given the opportunity, students will take ownership of their own learning and come to understand how to problem solve for themselves by employing software to suit their needs. Finally,

JUNIOR DIVISION: READING AND WRITING (continued)

Observations	Strategies for Improvement
Student Groups (continued) Students with special education needs maintained gains from previous years; fewer scored Codes 10 and 20 and, on all short and long-writing items, there was an increase in the number of students scoring at or above the provincial standard for topic development.	examine student IEPs to identify strengths, areas of need and appropriate accommodations, and then refine lessons to leverage student strengths. Use the online EQAO Reporting applications to fine-tune analyses of the performance of students and student groups.

School Improvement Planning

Use EQAO data, in conjunction with board-, school- and classroom-level information, to identify and implement the most effective strategies to improve student achievement. Once student learning needs have been identified, engage in professional dialogue to identify problems of practice and teachers' professional learning needs.

Use the **teacher professional learning** community model to examine and plan for how digital technologies might enhance print-based reading and writing practices and an understanding of text structures. Draw on media literacy expectations and accessible software to help students provide retells of, and generate responses to, texts through rich performance tasks that involve **multimodal literacies** (e.g., images, speech, animations, sound effects and writing).

Use recommendations from *Learning in the Field: The Student Work Study Teachers Initiative, 2009–2010* (e.g., rich instructional tasks connected to students' experience and schema; assessment for learning, including co-creating criteria and scaffolding for guided practice) to help all students improve their performance.

Employ instructional ideas from **Student Identity and Engagement in Elementary Schools**, including the following:

- “[be] alert to students who may seem uncomfortable voicing their thoughts and [find] ways to make it safe for them to do so;
- [be] alert to any student who may not be participating (for a multitude of possible reasons), [find] the barrier, then [work] together to remove it;
- [ensure] that activities and tasks are structured to support all students in participating actively;
- [assign] roles, raising levels of personal accountability.”

Use **Understanding Levels of Achievement** and the scoring rubrics and anchors available on the EQAO Web site to clarify what the levels of performance on the language component of the assessment look like and to acquire specific strategies for improving aspects of student work.

Assessment Practices

Provide multiple opportunities for students to become familiar with the vocabulary, criteria and tools of assessment, so that they can gain the confidence and expertise to self-assess their reading comprehension and skills.

Practise **moderated marking** to help develop an understanding of what makes a reading or writing response effective. After identifying student learning needs, use **networked learning communities** to establish a focus for thinking and practice among teachers.

Continue to share **learning goals** and co-construct **success criteria** (e.g., similar to those in EQAO's scoring guides for reading responses) at the outset of learning.

Use the scoring rubrics and anchors available on the EQAO Web site to illustrate the reading comprehension and writing skills required to demonstrate effective responses.

Provide all students with the opportunity to use the booklets available on the EQAO Web site to practise responding to assessment questions. Encourage students to attempt all questions within the expected timelines.

OBSERVATIONS AND STRATEGIES FOR IMPROVEMENT: MATHEMATICS

Through a combination of multiple-choice and open-response questions based on the *Ontario Curriculum* expectations from the strands Number Sense and Numeration, Measurement, Geometry and Spatial Sense, Patterning and Algebra, and Data Management and Probability, the junior-division EQAO assessment focuses on the following cognitive skills:

- Knowledge and Understanding—facility with subject-specific content (knowledge) and comprehension of its meaning and significance (understanding);
- Application—ability to select the appropriate “tool” or get the necessary information and apply it effectively to solve the problem and
- Thinking—ability to select and sequence a variety of tools to solve a problem and demonstrate a critical-thinking process.

JUNIOR DIVISION: MATHEMATICS	
Observations	Strategies for Improvement
General This year, girls performed slightly better overall across all strands and categories of knowledge and skills. Specifically, they performed approximately two percentage points better than boys overall on questions mapped to the strands Geometry and Spatial Sense and Data Management and Probability, and on open-response questions in general. Similar to last year, students performed better on questions mapped to Knowledge and Understanding than on questions mapped to Application and Thinking, on which their performance overall was approximately the same. As in the past two years, students performed better overall on multiple-choice questions than on open-response questions. Similar to the past two years, English language learners performed slightly below the general population, with similar trends in achievement across all strands, categories of knowledge and skills, and question types. The gap between the general population and English language learners was smaller than last year's, as there was a difference of fewer than two percentage points across all strands, categories of knowledge and skills, and question types. Students with special education needs performed approximately 17 percentage points below the general population on all strands, categories of knowledge and skills, and question types. The greatest differences overall in performance were on questions mapped to the strand Patterning and Algebra, and on open-response questions in general.	Continue to provide opportunities for teachers and instructional leaders to participate in professional dialogue—e.g., through collaborative teacher inquiry—to examine evidence-based teaching strategies that engage all learners. Focus on the relationship between specific practices and student learning, using data from various sources. Promote student thinking and engagement through interesting questions with real-world contexts that have a low entry point and a high ceiling, so that students are constantly challenged and working at the most appropriate level. Together, develop rich tasks that will lead to deeper student understanding. Continue to identify teacher learning needs in the areas of content and pedagogy, and integrate new knowledge about effective instructional strategies into classroom practice. Plan, learn and teach together as a team. Consider a developmental framework such as Landscape of Learning for guidance regarding student acquisition of mathematical skills and concepts. Analyze student work for evidence of learning by using assessments for learning and teacher moderation, and use the findings to modify or enhance future instructional approaches and assessments. Observe student interactions for the use of mathematical language for effective communication of understandings of concepts. Require students to explain their thinking and consider ways to use technology to record their voices as they work on problems. Listen to the recordings to develop an understanding of the students' thinking and recognize misconceptions. Use these findings to plan next steps and productive teacher responses that scaffold, redirect, probe or extend as required. Continue to create physical and social environments that optimize mathematical learning. Create a responsive mathematics learning environment that encourages all students to participate in class discussions. Use strategies that require all group members to share ideas and communicate using mathematical terminology (e.g., inside-outside circle). Use technology such as interactive white boards for the sharing of ideas and mathematical representations and to increase student

JUNIOR DIVISION: MATHEMATICS (continued)	
Observations	Strategies for Improvement
General (continued)	engagement. Decide which solutions you want to have displayed, in which order and how you will use them to communicate (e.g., through bansho or a gallery walk) to help students understand the mathematical ideas that have been the focus of the lesson. Display student solutions, and collaboratively construct math strategy walls, anchor charts and other visual displays of mathematical ideas. Continue to use recommendations from Eight Tips for Asking Effective Questions (e.g., anticipate student thinking, link to learning goals, pose open questions, pose questions that actually need to be answered, pose questions that open up the conversation to include others). Apply the math scales from <i>Understanding Levels of Achievement: Using EQAO Information to Improve Student Learning, Junior Division</i> to student work in order to determine next steps. Engage students in different types of math talk as part of robust thinking. Have students work in pairs or small groups to answer both open-response and multiple-choice questions. Listen for indications that students understand key ideas. Use the practices of productive math discussions. In order to ensure that students understand that multiple-choice questions often involve calculations, expect them to provide evidence of the processes they use to solve them. Work with students to make their thinking visible and provide models of how to answer open-response questions with accurate and precise written communication of mathematical thinking. Emphasize the process of problem solving by teaching students to develop, select, apply and compare a variety of strategies as they pose and solve problems and conduct investigations. Use the Four-Step Problem-Solving Model, and continue to integrate the mathematical process expectations. Prompt students to discuss their strategies and ask whether the strategies would work in other situations and how they compare to approaches others used. Combine classroom evidence with the information available through the EQAO Reporting application to examine the needs of individual students and groups of students. Target interventions and monitor evidence to gauge their effect. Incorporate the accommodations EQAO permits for the assessment, listed in the <i>Guide for Accommodations, Special Provisions and Exemptions</i>. Continue to provide opportunities for students to answer both open-response and multiple-choice questions. Model how to answer open-response questions with accurate and precise written communication of mathematical thinking. Incorporate EQAO's sample assessment questions as students explore and work through various curriculum expectations in all strands, and use the associated scoring guides for the open-response questions to stimulate discussion. Use both open-response and multiple-choice sample assessment questions to help students become aware of common errors and misconceptions, and model the requirements for a complete solution for the open-response questions.

JUNIOR DIVISION: MATHEMATICS (continued)	
Observations	Strategies for Improvement
Number Sense and Numeration Overall, students performed well on questions in this strand this year. Many students correctly responded to the multiple-choice questions involving a single calculation including decimals and requiring them to determine a unit rate. Students performed less well on the multi-step open-response question involving ratios and rates. Scorers of this question noted that students who did not perform well gave answers without calculations and showed a misunderstanding of a.m. and p.m.	Continue to teach the conceptual understanding of fractions and decimals through diagrams and the use of manipulatives. Relate students' understanding of fractions to ratios and rates in various contexts, and require them to explain their answers and communicate using appropriate mathematical terminology. Continue to promote mental math to calculate, estimate and visualize relationships. Give opportunities for students to be exposed to a variety of mental math strategies, and help them understand the link between good mental math skills and awareness of the reasonableness of their answers. Provide students with opportunities to calculate rates in varied contexts, and encourage them to judge the reasonableness of their answer using proportional reasoning and considering the units involved in the question. Provide students with strategies and tools, such as highlighting or underlining key words or using graphic organizers, to help them identify pertinent information in the question, especially in problems that involve multiple steps. Prompt them to discuss their strategies and ask whether the strategies would work in other cases and how they compare to the methods others used.
Measurement Students did not perform well on the single-step questions in this strand requiring them to determine the appropriate metric unit and estimate the volume. Students also did not perform well on the multiple-choice question requiring them to select the rectangle and triangle with the same area. Approximately 35% of students selected the incorrect answer that demonstrated they may have incorrectly used base multiplied by height as the formula for the area of the triangle and forgotten to divide by two. Students performed well on the open-response question requiring them to calculate the areas of polygons. Scorers of this question noted that students who did not perform well confused perimeter with area and did not demonstrate an understanding of the units associated with area.	Develop the formula for the area of a triangle with students and reinforce an understanding of the relationship between a triangle and a rectangle when the base and height of the triangle are equal to the width and length of the rectangle. Reinforce the difference between area and perimeter and the difference between volume and surface area. Provide students with visual representations to develop spatial reasoning. Use nets of triangular and rectangular prisms to create the figures and to reinforce the students' spatial reasoning, specifically their ability to visualize how areas are used to calculate the surface area of a prism.
Geometry and Spatial Sense Students did not perform well on the multiple-choice and open-response questions in this strand mapped to Thinking, specifically on the questions requiring them to determine which geometric property was used to order shapes, describe the transformations used to move a shape and identify the result of a transformation.	Continue to provide students with opportunities to identify lines of symmetry and points of rotation in a variety of polygons as required. Have the students describe all aspects of the three different types of transformations using mathematical terminology. Consolidate mathematical terminology as it pertains to this strand, specifically transformations, by using graphic

JUNIOR DIVISION: MATHEMATICS (continued)

Observations	Strategies for Improvement
Geometry and Spatial Sense (continued) Scorers of the open-response question requiring students to describe and name the transformations used to move a shape noted that students often missed the point of rotation or line of reflection and incorrectly determined or omitted the direction of rotation (clockwise vs. counter-clockwise).	organizers and by adding it to classroom word walls. Provide students with frequent opportunities to reference and use the terminology. Continue to provide students with opportunities to perform rotations with points in, on and outside the shape being rotated. Reinforce the difference between rotating about a point and on a point.
Patterning and Algebra In 2014, the general population performed best overall on the questions from this strand. As last year, students performed well on the multiple-choice questions requiring them to solve equations to determine the value of an unknown. Students also performed well on the multiple-choice questions involving patterns, including the ones requiring them to describe and extend patterns and represent a geometric pattern numerically. Students performed well on the open-response question requiring them to extend a number pattern represented on a graph and to create one given a rule. Scorers of this question noted that students made more errors extending the pattern than creating one, and that students often started identifying the terms for one or both patterns at the second term instead of at the first. Scorers also noted that some students confused the terminology “term” and “term number.”	Continue to provide students with multiple opportunities to solve problems involving extending a variety of patterns, including patterns represented on graphs, and creating various patterns represented by pattern rules in words. Encourage students to generalize patterns in order to improve their algebraic reasoning skills, specifically functional thinking. Continue to reinforce and clarify the difference between “term” and “term number” with respect to patterns. Use EQAO’s sample assessment questions relating to concepts in this strand for additional examples of patterns, and discuss the common errors and misconceptions represented by the multiple-choice answer options.
Data Management and Probability In 2014, the general population performed least well overall on the questions from this strand. Students performed well on the multiple-choice question requiring them to represent the probability of an event on a number line. Students did not perform well on the open-response question requiring them to determine the theoretical probability of selecting blocks of various colours. Scorers of this question noted that students who did not perform well had difficulty determining the probabilities as fractions or decimals, and that some students did not consider the total number of blocks of all the colours when giving the probability of selecting each (e.g., for a colour with six blocks, they determined a probability of 0.6 or 0.06).	Continue to require students to show the connections between probabilities and their fraction, decimal number and percent equivalents. Reinforce an understanding of the total number of possible outcomes and how it is used to determine probabilities in various contexts. Connect the concepts from the strand Number Sense and Numeration to concepts in this strand (e.g., the connection between representing and determining ratios and determining probabilities).

LIST OF RESOURCES: READING AND WRITING

If you are reading the version of this document found on the EQAO Web site, www.eqao.com, please use the hyperlinks to the listed resources.

PRIMARY AND JUNIOR DIVISIONS: READING AND WRITING

Main resources

Literacy and Numeracy Secretariat. (2007, May). *Learning blocks for literacy and numeracy* (What Works? Research into Practice: Secretariat Special Edition 1). Available at <http://www.curriculum.org/secretariat/files/May30LearningBlocks.pdf>

- **Differentiated instruction**
- **Making inferences**

Literacy and Numeracy Secretariat. (2010, October). *Improving student writing: Using feedback as a tool* (What Works? Research into Practice: Research Monograph 29). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/ww_improving_student_writing.pdf

- **Feedback (self, teacher, peer)**
- **Self-assessment**
- **Writing conventions**
- **Writing process**

Literacy and Numeracy Secretariat. (2010, September). *Word study instruction: Enhancing reading comprehension* (What Works? Research into Practice: Research Monograph 27). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/ww_word_study.pdf

- **Connotation**
- **Denotation**
- **Word study**

Ministry of Education of Ontario. (2003). *A guide to effective instruction in reading, kindergarten to Grade 3*. Available at http://www.eworkshop.on.ca/edu/resources/guides/Reading_K_3_English.pdf

- **Go Chart:** page 3.29
- **Graphic organizers:** Chapter 10
- **Graphic texts:** pages 3.5 and 3.29
- **Higher-order thinking skills:** pages 8.14–8.15
- **Narrative:** pages 8.28
- **Non-fiction:** pages 5.26–5.31 and 8.4
- **Text features:** pages 5.26–5.31
- **Text types:** pages 1.20–1.21
- **Vocabulary development:** pages 8.11–8.13

Ministry of Education of Ontario. (2005). *A guide to effective instruction in writing, kindergarten to Grade 3*. Available at http://www.eworkshop.on.ca/edu/resources/guides/Guide_Writing_%20K_3.pdf

- **Checklists:** throughout
- **Conferencing:** Appendix 6–3
- **Conventions:** throughout, but especially pages 1.16–1.18
- **Graphic organizers:** appendices
- **Ideas:** throughout
- **Organization:** throughout
- **Revision:** pages 1.8, 1.13, Appendices 6–4, 6–7
- **Style:** pages 1.12, 1.16
- **Writer's workshop:** throughout

PRIMARY AND JUNIOR DIVISIONS: READING AND WRITING (continued)

Ministry of Education of Ontario. (2008). *A guide to effective literacy instruction, Grades 4–6: Volume 5. Reading*. Available at http://www.eworkshop.on.ca/edu/resources/guides/Guide_Lit_456_Vol_5_Reading.pdf

- **Academic language:** pages 24–25
- **Main idea:** pages 31–40
- **Shared, guided and independent reading:** pages 60–85
- **Signal words:** pages 40–41

Ministry of Education of Ontario. (2008). *A guide to effective literacy instruction, Grades 4–6: Volume 6. Writing*. Available at http://www.eworkshop.on.ca/edu/resources/guides/Guide_Lit_456_Vol_6_Writing.pdf

- **Going public:** pages 36 and 45
- **Graphic organizers:** page 50
- **Mentor texts:** page 42
- **Revision:** pages 39–42
- **Text forms:** pages 11–13
- **Writing process:** pages 36–45

Literacy and Numeracy Secretariat. (2013, January). *Canadian-born English language learners* (Capacity Building Series: Secretariat Special Edition 31). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS_CBELL.pdf

- Academic language
- Scaffolding

Literacy and Numeracy Secretariat. (2012, Spring). *Primary reading discussion paper*. Available at <http://resources.curriculum.org/secretariat/primary/files/PrimaryDiscussionPaper.pdf>

- Accountable talk
- Arc of Inquiry
- Four Role Resources Model
- Gradual release of responsibility model

Other resources

Accountable talk

- Ministry of Education of Ontario. (2006). Chapter 3: Principles of effective literacy instruction. In *A guide to effective literacy instruction, Grades 4–6: Volume 1* (pp. 76–94). Available at http://www.eworkshop.on.ca/edu/resources/guides/Guide_Lit_456_Vol_1_Pt2_Junior_Learner.pdf

Anchor charts

- Education Quality and Accountability Office. (2008, Spring). Celebrating the success of an Ontario school. *EQAO Connects*. Available at <http://www.eqao.com/eMagazine/2008/05/eMagArticle.aspx?Lang=E&ArticleID=05&ItemID=21>

Assessment

- Literacy and Numeracy Secretariat. (2007, December). *Student self-assessment* (Capacity Building Series: Secretariat Special Edition 4). Available at <http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/StudentSelfAssessment.pdf>
- Literacy and Numeracy Secretariat (Producer). (2006, April 27). *Rethinking classroom assessment with purpose in mind* [Webcast]. Available at <http://www.curriculum.org/k-12/en/projects/rethinking-classroom-assessment-with-purpose-in-mind>
- Literacy and Numeracy Secretariat. (2006, April 27). *Rethinking classroom assessment with purpose in mind: Viewing and discussion guide*. Available at <http://www.curriculum.org/secretariat/files/April27Guide.pdf>
- Ministry of Education of Ontario. (2010). Chapter 4: Assessment for learning and as learning. In *Growing success: Assessment, evaluation, and reporting in Ontario schools* (pp. 27–36). Available at <http://www.edu.gov.on.ca/eng/policyfunding/growSuccess.pdf>

PRIMARY AND JUNIOR DIVISIONS: READING AND WRITING (continued)

Assistive technologies/assistive technology tools

- Ministry of Education of Ontario. (2005). Chapter 10: Computer-based assistive technology. In *Education for all: The report of the expert panel on literacy and numeracy instruction for students with special education needs, kindergarten to Grade 6* (pp. 127–138). Available at <http://www.edu.gov.on.ca/eng/document/reports/speced/panel/speced.pdf>
- Literacy and Numeracy Secretariat. (2014, February). *Assistive technology tools* (What Works? Research into Practice: Research Monograph 50). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/WW_TechnologyTools.pdf

Boys' underachievement

- Literacy and Numeracy Secretariat. (2008, April). *Boys' underachievement: Which boys are we talking about?* (What Works? Research into Practice: Research Monograph 12). Available at <http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/Martino.pdf>

Close reading

- Literacy and Numeracy Secretariat. (2011, April). *Grand conversations in primary classrooms* (Capacity Building Series: Secretariat Special Edition 18). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS_Grand_Conversations.pdf

Content literacy/content-area knowledge

- Literacy and Numeracy Secretariat. (2008, May). *Content literacy* (What Works? Research into Practice: Research Monograph 13). Available at <http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/contentLiteracy.pdf>
- Literacy and Numeracy Secretariat. (2010, February). *Science and literacy in the elementary classroom* (What Works? Research into Practice: Research Monograph 13). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/WW_science_literacy.pdf

Differentiated instruction

- Literacy and Numeracy Secretariat. (2006, March 29). *Differentiated instruction: Continuing the conversation* (Webcasts for Educators). Available at <http://www.edugains.ca/newsite/ell2/webcasts.html>
- Literacy and Numeracy Secretariat. (2008, May 2). *High-yield strategies to improve student learning: Differentiated writing instruction* (Webcasts for Educators). Available at <http://www.curriculum.org/k-12/en/videos/differentiated-writing-instruction>
- Ministry of Education of Ontario. (2005). Differentiated instruction. In *Education for all: The report of the expert panel on literacy and numeracy instruction for students with special education needs* (pp. 14–15). Available at <http://www.edu.gov.on.ca/eng/document/reports/speced/panel/speced.pdf>

English language learners

- Coelho, E. (2007, July). How long does it take? Lessons from EQAO data on English language learners in Ontario schools. *Inspire: The Journal of Literacy and Numeracy for Ontario*. Available at www.edu.gov.on.ca/eng/literacynumeracy/inspire/equity/ELL_July30.html
- Literacy and Numeracy Secretariat. (2009, October). *A world of words: Enhancing vocabulary development for English language learners* (Capacity Building Series: Secretariat Special Edition 11). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/world_of_words.pdf
- Literacy and Numeracy Secretariat. (2009, March). *ELL voices in the classroom* (Capacity Building Series: Special Edition 8). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/ELL_Voices09.pdf
- Ministry of Education of Ontario. (2006). Introduction (“Diversity and effective instruction”). In *A guide to effective literacy instruction, Grades 4 to 6: Volume 3. Planning and classroom management* (pp. 1–8). Available at http://www.eworkshop.on.ca/edu/resources/guides/Guide_Lit_456_Vol_3_Planning.pdf

EQAO Reporting applications

- EQAO School and School Board Profiles and Reports available at <http://www.eqao.com/>

PRIMARY AND JUNIOR DIVISIONS: READING AND WRITING (continued)

Feedback

- Literacy and Numeracy Secretariat. (2010, September). *Primary assessment* (Capacity Building Series: Secretariat Special Edition 15). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS_primaryassessment.pdf
- Literacy and Numeracy Secretariat. (2010, October 15). *Developing inquiring minds: Teachers demonstrate effective descriptive feedback* [Webcast]. Available at <http://curriculum.org/secretariat/inquiring/feedback.shtml>
- Ministry of Education of Ontario. (n.d.). *Descriptive feedback* [Webcast]. Available at <http://www.edugains.ca/newsite/aer2/aervideo/descriptivefeedback.html>
- Ministry of Education of Ontario. (2010). *Descriptive feedback: Viewing guide*. Available at <http://www.edugains.ca/resourcesAER/VideoLibrary/Feedback/ViewingGuideFeedbackAFLVideoSeries.pdf>

Four roles of the literate learner/Four Roles/Resources Model

- Ministry of Education of Ontario. (2004). Four roles of a literate learner. In *Literacy for learning: The report of the expert panel on literacy in Grades 4 to 6 in Ontario* (pp. 8–9). Available at <http://www.edu.gov.on.ca/eng/document/reports/literacy/panel/literacy.pdf>
- Literacy and Numeracy Secretariat. (n.d.) *Four roles of the literate learner/Evolving views: Four roles of the literate learner* [Information Sheet]. Available at <http://resources.curriculum.org/LNS/thinking/files/EvolvingRoles.pdf>

Gradual release of responsibility

- Literacy and Numeracy Secretariat. (2007, Summer). *The LNS communiqué*. Available at <http://www.edu.gov.on.ca/eng/literacynumeracy/LNSsummer.pdf>
- Literacy and Numeracy Secretariat. (2009, April 21). *Quality teaching: It's intentional* (Webcasts for Educators). Available at <http://www.curriculum.org/k-12/en/projects/quality-teaching-its-intentional>

High-yield strategies

- Literacy and Numeracy Secretariat. (2008, May 2). *High-yield strategies to improve student learning* (Webcasts for Educators). Available at <http://www.curriculum.org/k-12/en/projects/high-yield-strategies-to-improve-student-learning>

How do you know?

- Richards, J. R and Anderson, N. A. (2003, November). How do you know? A strategy to help emergent readers make inferences. *The Reading Teacher*, 57(3), 290–293. [Access via your school board thorough ERIC or ProQuest]

Identity texts

- Literacy and Numeracy Secretariat. (2011, May). *Student identity and engagement in elementary schools* (Capacity Building Series: Secretariat Special Edition 20). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS_StudentIdentity.pdf

Inquiry

- Literacy and Numeracy Secretariat. (2011, October). *Getting started with student inquiry* (Capacity Building Series: Secretariat Special Edition 24). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS_StudentInquiry.pdf
- Literacy and Numeracy Secretariat (Producer). (2010, October 15). *Developing inquiring minds: Introduction* [Webcast]. Available at <http://resources.curriculum.org/secretariat/inquiring/introduction.shtml>

Learning goals

- Learning goals and success criteria video library: <http://www.edugains.ca/newsite/aer2/aervideo/learninggoals.html>

Learning in the field

- Literacy and Numeracy Secretariat. (2011, May). *Learning in the field: The student work study teachers initiative, 2009–2010*. Available at <http://www.edu.gov.on.ca/eng/literacynumeracy/research/swst.pdf>

Literacy in multilingual contexts

- Literacy and Numeracy Secretariat. (2007, June). *Promoting literacy in multilingual contexts* (What Works? Research into Practice: Research Monograph 5). Available at <http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/Cummins.pdf>
- Literacy and Numeracy Secretariat. (2005, December 7). *Teaching and learning in multilingual Ontario* (Webcasts for Educators). Available at <http://www.curriculum.org/secretariat/december7.shtml>

PRIMARY AND JUNIOR DIVISIONS: READING AND WRITING (continued)

Making connections makes sense

- Ricker-Wilson, C. (2013). Making connections makes sense: Helping students use what they know to understand what they read. *EQAO Connects*, 1. Available at <http://www.eqao.com/eMagazine/index.aspx?Lang=E>

Making inferences

- Literacy and Numeracy Secretariat. (n.d.). Writing explicit/implicit dialogue checklist. In *Teacher resources: Comprehending in action: Inferring, Module 1, Sessions 1–5* (p. 46). Available at http://www.curriculum.org/LNS/coaching/files/pdf/Comprehending_Resources.pdf
- Literacy and Numeracy Secretariat. (2004). *Comprehending in action: Inferring* (Literacy Series: Module 1) [Slide presentation]. Available at http://resources.curriculum.org/LNS/coaching/files/ppt/Comprehending_Module1.ppt
- Literacy and Numeracy Secretariat. (2010, October 29). Word sort, Inference game, Learning centres, Writing, Guided reading and Student self-assessment. In *Precision teaching in the primary classroom* [Webcast]. Available at <http://www.curriculum.org/secretariat/precision/index.shtml>

Making thinking visible

- Literacy and Numeracy Secretariat. (n.d.). Session 2: Making thinking visible. In *Thinking about thinking: Becoming an independent reader* [Slide presentation]. Available at <http://resources.curriculum.org/LNS/thinking/becoming.html>

Mentor texts

- Literacy and Numeracy Secretariat. (2009, October). *Engaging boys: Powerful possibilities for all learners* [Webcasts]. Available at <http://www.curriculum.org/secretariat/engaging/multimodal.shtml>
- Online teaching resources available at <http://www.eworkshop.on.ca/edu/core.cfm>

Moderated marking

- Literacy and Numeracy Secretariat. (2010, October 15). *Developing inquiring minds: Moderation of student work* [Webcast]. Available at <http://www.curriculum.org/secretariat/inquiring/moderation.shtml>
- Literacy and Numeracy Secretariat. (2007, September 10). *Teacher moderation: Collaborative assessment of student work* (Capacity Building Series: Secretariat Special Edition 2). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/teacher_moderation.pdf

Morphology

- Literacy and Numeracy Secretariat. (2012, June). *Morphology works* (What Works? Research into Practice: Research Monograph 41). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/ww_morphology.pdf

Multi-level texts

- Literacy and Numeracy Secretariat. (2012, June). *Using multilevel texts: Supporting literacy in the inclusive classroom* (What Works? Research into Practice: Research Monograph 41). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/WW_Multilevel_Texts.pdf

Multimodal literacies

- Literacy and Numeracy Secretariat. (2013, February). *Using a professional learning community to support multimodal literacies* (What Works? Research into Practice: Research Monograph 46). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/WW_Professional_Learning.pdf

Non-fiction reading and writing

- Literacy and Numeracy Secretariat. (2008, April 18). *Non-fiction writing* (Webcasts for Educators). Available at <http://www.curriculum.org/secretariat/april18.shtml>
- Literacy and Numeracy Secretariat. (2008, April 18). Connie Wright: Persuasive writing: Deconstructing a newspaper article. In *Non-Fiction Writing* [Webcast]. Available at <http://www.curriculum.org/secretariat/april18.shtml>
- Literacy and Numeracy Secretariat. (2008, April 18). Bridget Scime: Report writing. In *Non-Fiction Writing* [Webcast]. Available at <http://www.curriculum.org/secretariat/april18.shtml>
- Literacy and Numeracy Secretariat. (2009, April 21). Dr. Douglas Reeves: Non-fiction writing. In *Quality teaching: It's intentional* [Webcast]. Available at <http://www.curriculum.org/secretariat/april21.shtml>
- Literacy and Numeracy Secretariat. (2008, March). *Non-fiction writing for the junior student* (Capacity Building Series: Secretariat Special Edition 5). Available at <http://www.curriculum.org/secretariat/files/Apr18JuniorStudent.pdf>

PRIMARY AND JUNIOR DIVISIONS: READING AND WRITING (continued)

Organizational patterns

- Literacy and Numeracy Secretariat. (2008, March). Introducing students to commonly used text forms. In *Non-fiction writing for the junior student* (Capacity Building Series: Secretariat Special Edition 5) (pp. 4–5). Available at <http://www.curriculum.org/secretariat/files/Apr18JuniorStudent.pdf>
- Literacy and Numeracy Secretariat. (2008, May 2). Reading conference: Text structure. In *High-yield strategies to improve student learning* (Webcasts for Educators). Available at <http://www.curriculum.org/secretariat/may2.shtml>
- Literacy and Numeracy Secretariat. (2008, May 2). Part 3: The gradual release of responsibility model (literacy): Shared reading: Signal words. In *High-yield strategies to improve student learning* (Webcasts for Educators). Available at <http://www.curriculum.org/secretariat/may2.shtml>

Reading fluency

- Literacy and Numeracy Secretariat. (2010, March). *Reading fluency* (Capacity Building Series: Secretariat Special Edition 12). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/reading_fluency.pdf

Reciprocal reading/reciprocal teaching

- Literacy and Numeracy Secretariat. (2009, January 30). *Teaching for understanding: Summarization* (Webcasts for Educators). Available at <http://www.curriculum.org/secretariat/january30TU.shtml>
- Literacy and Numeracy Secretariat. (2006, October 25). *Effective instruction in reading comprehension* (Webcasts for Educators). Available at <http://www.curriculum.org/secretariat/october25.shtml>
- Snowball, D. (2005). Reciprocal teaching session. In *Teaching comprehension: An interactive professional development course* [CD-ROM Level 3–6]. Melbourne: Education Services Australia. Available at <http://www.curriculum.org/secretariat/files/Oct25teaching.pdf>

Revision

- Literacy and Numeracy Secretariat. (2008, April 18). Report writing: Organization, revision, and reflection. In *Non-Fiction Writing* [Webcast]. Available at http://resources.curriculum.org/secretariat/april18_organization.shtml

Strategy implementation continuum

- Literacy and Numeracy Secretariat. (n.d.). *Strategy implementation continuum*. Available at <http://www.edugains.ca/resources/LIT/CoreResources/Strategy%20Implementation%20Continuum.pdf>

Struggling writers

- Literacy and Numeracy Secretariat. (2014, February). *Supporting struggling writers* (What Works? Research into Practice: Research Monograph 49). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/WWV_StrugglingWriters.pdf

Students with special education needs

- Bennett, S. (2009, January). *Including students with exceptionalities* (What Works? Research into Practice: Research Monograph 16). Available at <http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/Bennett.pdf>
- Ministry of Education of Ontario. (2013). *Learning for all: A guide to effective assessment and instruction for all students, kindergarten to Grade 12*. Available at <http://www.edu.gov.on.ca/eng/general/elemsec/speced/LearningforAll2013.pdf>

Success criteria

- Literacy and Numeracy Secretariat. (n.d.). Informing practice: Learning intentions and success criteria. In *Student-led conferences* [Webcasts]. Available at <http://www.curriculum.org/secretariat/studentled/informing.shtml>

Teacher professional learning

- Council of Ontario Directors of Education. (2012, January 31). Professional development that makes a difference. *Code Advisory*, 13. Available at http://www.ontariodirectors.ca/CODE_Advisories/Downloads/CODE%20Advisory%20No%2013%20Web.pdf
- Literacy and Numeracy Secretariat. (2007, October). *Professional learning communities: A model for Ontario schools* (Capacity Building Series: Secretariat Special Edition 3). Available at <http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/plc.pdf>
- Literacy and Numeracy Secretariat. (2010, September). *Collaborative teacher inquiry* (Capacity Building Series: Secretariat Special Edition 16). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS_Collaborative_Teacher_Inquiry.pdf

PRIMARY AND JUNIOR DIVISIONS: READING AND WRITING (continued)

Text features, forms, types, genres and stylistic elements

- Literacy and Numeracy Secretariat. (2008, March). *Non-fiction writing for the junior student* (Capacity Building Series: Secretariat Special Edition 5). Available at <http://www.curriculum.org/secretariat/files/Apr18JuniorStudent.pdf>
- Literacy and Numeracy Secretariat. (n.d.). *Text, features, forms and genres*. Available at <http://www.curriculum.org/secretariat/files/Oct25TextFeatures.pdf>

Thinking routines

- Gall, S. (2012, Winter). Thinking routines are beneficial for students and teachers. *Learning Forward Ontario Newsletter*, 3(2), 16–17. Available at http://learningforwardontario.ca/files/LFO_Newsletter_Winter_2012.pdf

Thinking skills/higher-order thinking

- Literacy and Numeracy Secretariat. (2007). *Connecting reading and writing for higher-order thinking* (Professional learning series Module 3) [Slide presentation]. Available at http://resources.curriculum.org/LNS/coaching/files/ppt/Comprehending_Module3.ppt
- Literacy and Numeracy Secretariat. (2009, April 21). *Quality teaching: It's intentional* (Webcasts for Educators). Available at <http://www.curriculum.org/secretariat/april21.shtml>

Towards an understanding of gender differences in literacy achievement

- Klinger, D., Shulha, L., & Wade-Woolley, L. (2009, March). *Towards an understanding of gender differences in literacy achievement* (EQAO Research). Available at http://www.eqao.com/Research/pdf/E/FINAL_ENGLISH_Gender_Gap_Report_As_of_May_11_2010.pdf

Understanding levels of achievement

- Education Quality and Accountability Office. (2012). *Understanding levels of achievement: Using EQAO information to improve student learning, Junior division*. Available at http://www.eqao.com/pdf_e/12/UnderstandingLevelsAchievement_JuniorDivision_en.pdf
- Education Quality and Accountability Office. (2012). *Understanding levels of achievement: Using EQAO information to improve student learning, Primary division*. Available at http://www.eqao.com/pdf_e/12/UnderstandingLevelsAchievement_PrimaryDivision_en.pdf

Vocabulary/word sorts/word study

- Literacy and Numeracy Secretariat. (2009, October). *A world of words: Enhancing vocabulary development for English language learners* (Capacity Building Series: Secretariat Special Edition 11). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/world_of_words.pdf
- Literacy and Numeracy Secretariat. (2010, October 29). Word sort, Inference game, Learning centres, Writing, Guided reading, Student self-assessment. In *Precision teaching in the primary classroom* [Webcast]. Available at <http://resources.curriculum.org/secretariat/precision/index.shtml>
- Literacy and Numeracy Secretariat. (2010, February). *Science and literacy in the classroom* (What Works? Research into Practice: Research Monograph 26). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/WW_science_literacy.pdf
- Literacy and Numeracy Secretariat. (2010). *Word study in action* (Webcasts for Educators). Available at <http://www.curriculum.org/secretariat/wordstudy/>
- Literacy and Numeracy Secretariat. (2010, September). *Word study instruction: Enhancing reading comprehension* (What Works? Research into Practice: Research Monograph 27). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/WW_Word_Study.pdf

What makes you say that?

- Harvard Graduate School of Education/Project Zero. (n.d.). Visible thinking in action [Web site]. Available at http://www.visiblethinkingpz.org/VisibleThinking_html_files/03_ThinkingRoutines/03d_UnderstandingRoutines/WhatMakes/WhatMakes_Routine.html

Word consciousness/word detective/word study

- Literacy and Numeracy Secretariat. (2010, October 29). *Precision teaching in the primary classroom: Viewers' guide*. Available at <http://curriculum.org/secretariat/precision/files/PrecisionTeachingGuide.pdf>
- Scott, R. M. [n.d.] *Word study and reading comprehension: Implications for instruction*. Available at <http://www.edu.gov.on.ca/eng/research/mcquinter.pdf>

PRIMARY AND JUNIOR DIVISIONS: READING AND WRITING (continued)**Writing exemplars**

- Ministry of Education and Training of Ontario. (1999). *The Ontario Curriculum Exemplars, Grades 1–8*. Print versions available through schools and boards.

Writer's workshop, writing and conventions

- Learning module on writer's workshop at <http://www.eworkshop.on.ca/edu/core.cfm?p=main&modColour=1&modID=24&m=111&L=1>

Writing form, purpose and audience

- Ministry of Education of Ontario. (n.d.). The four roles of the junior writer (adapted from p. 81 of *Literacy for learning* [2004]). Available at http://www.eworkshop.on.ca/edu/pdf/Mod24_roles_writer.pdf

Writing to learn

- Literacy and Numeracy Secretariat. (2012, March). *Writing to learn* (Capacity Building Series: Secretariat Special Edition 25). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS_WritingtoLearn.pdf

LIST OF RESOURCES: MATHEMATICS

If you are reading the version of this document found on the EQAO Web site, www.eqao.com, please use the hyperlinks to the listed resources. Alternatively, except as noted, please

- go to www.eworkshop.on.ca;
- click “Numeracy Resources” under “Resources” and
- click “Expert Panel Reports/Guides to Effective Instruction” in the left-hand column.

The listed titles will appear on the right-hand side.

PRIMARY AND JUNIOR DIVISIONS: MATHEMATICS

Main resources

Literacy and Numeracy Secretariat. (2012, July). *The third teacher* (Capacity Building Series: Secretariat Special Edition 27). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS_ThirdTeacher.pdf

- Math talk
- Physical and social environments
- Real-world problems

Ministry of Education of Ontario. (2012, November 8). “Classroom learning,” “Analyses,” “Math talk, conferencing and professional learning” and “Knowledgeable others.” In *Creating the conditions for learning mathematics* (Webcasts for Educators). Available at <http://www.curriculum.org/k-12/en/projects/creating-the-conditions-for-learning-mathematics>

- Landscape of learning
- Math talk
- Rich tasks

Other resources

Algebraic reasoning

- Ministry of Education of Ontario. (2013). *Paying attention to algebraic reasoning, K–I 2*. Available at <http://www.edu.gov.on.ca/eng/literacynumeracy/PayingAttentiontoAlgebra.pdf>

Assessments for learning

- Literacy and Numeracy Secretariat. (n.d.). *Assessment for learning mathematics: Developing eyes to see and ears to hear student thinking* [Slide presentation]. Available at http://resources.curriculum.org/LNS/coaching/files/ppt/Assessment_Mathematics.ppt
- Ministry of Education of Ontario. (2010). *Growing success: Assessment, evaluation and reporting in Ontario schools, First edition, covering Grades 1 to 12*. Available at <http://www.edu.gov.on.ca/eng/policyfunding/growsuccess.pdf>

Collaborative teacher inquiry

- Literacy and Numeracy Secretariat. (2010, September). *Collaborative teacher inquiry* (Capacity Building Series: Secretariat Special Edition 16). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS_Collaborative_Teacher_Inquiry.pdf

Conceptual understanding

- Ministry of Education of Ontario. (2005). The link between procedural knowledge and conceptual understanding. In *Education for all: The report of the expert panel on literacy and numeracy instruction for students with special education needs, kindergarten to Grade 6* (p. 74). Available at <http://www.edu.gov.on.ca/eng/document/reports/speced/panel/speced.pdf>

Differentiated instruction

- Ministry of Education of Ontario. (2005). Differentiated instruction. In *Education for all: The report of the expert panel on literacy and numeracy instruction for students with special education needs, kindergarten to Grade 6* (pp. 14–15). Available at <http://www.edu.gov.on.ca/eng/document/reports/speced/panel/speced.pdf>
- Ministry of Education of Ontario. (n.d.). *Professional learning guide: Differentiated instruction*. Description of what differentiated instruction means in the classroom and considerations relating to its implementation. Available at <http://www.edu.gov.on.ca/eng/studentsuccess/lms/differentiatedInstruction.pdf>

PRIMARY AND JUNIOR DIVISIONS: MATHEMATICS (continued)

Differentiated instruction (continued)

- Ministry of Education of Ontario. (2006, March 29). *Differentiated instruction: Continuing the conversation* [Webcast]. Available at <http://www.curriculum.org/k-12/en/library>
- Ministry of Education of Ontario. (2008, May 28). *Differentiating mathematics instruction* [Webcast]. Available at <http://www.curriculum.org/k-12/en/library>

Eight Tips for Asking Effective Questions

- Literacy and Numeracy Secretariat. (2011, July). *Asking effective questions* (Capacity Building Series: Secretariat Special Edition 21). Available at http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS_AskingEffectiveQuestions.pdf

Four-Step Problem-Solving Model

- Ministry of Education of Ontario. (2006). The four-step problem-solving model. In *A guide to effective instruction in mathematics, kindergarten to Grade 6: Volume 2: Problem solving and communication* (pp. 36–38). Available at http://eworkshop.on.ca/edu/resources/guides/Guide_Math_K_6_Volume_2.pdf

Fractions

- Ministry of Education of Ontario. (2013). In *Critical learning instructional paths supports (CLIPS) in Mathematics, Grades K to 12, [version 4.13]*. (Click “Fractions.”) Available at <http://oame.on.ca/CLIPS/>
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