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Welcome

By Marguerite Jackson,

Chief Executive Officer

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January 1.

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The Key to Good Assessments

Writing Open-Response Mathematics Questions: EQAO's approach

By Sandy DiLena, Education Officer, EQAO

This article describes the process that EQAO uses to create open-response questions (also called open-response assessment items), and shares lessons learned and information that could be useful to classroom teachers in the development of their own classroom assessments.

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Spotlight

Celebrating the Success of an Ontario School

Haileybury Public School, on the banks of Lake Temiskaming, serves 227 students from a broad range of socio-economic backgrounds. Job losses in the community and a new French Immersion program at a nearby school have contributed to declining enrolment.

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Data in Action

Exploring the Many Layers of EQAO Assessment Data: Peeling the Onion

By Michael Kozlow, Director of Data and Support

Services, EQAO

It is useful to consider the process of interpreting EQAO assessment data as a journey through several layers of information. Assuming the role of detective can help you use the clues contained in the EQAO assessment reports to answer the following fundamental question:

What do the assessment results tell me about how well my students are meeting the expectations in The Ontario Curriculum?

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Try your hand at scoring a student response!

Take a look at this mathematics item and student response from the Grade 9 Assessment of Mathematics. How would you score it? The scoring rubric, annotations and correct score are provided, as are sample student responses at other score codes.

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A Teacher's Resource for Large-Scale Assessments

EQAO CONNECTS

WEBMAG

Fall 2008

EDUCATION QUALITY AND ACCOUNTABILITY OFFICE



Welcome



Marguerite Jackson
Chief Executive Officer

Welcome to the fall 2008 issue of *EQAO Connects*. For educators everywhere, fall means “back-to-school” and marks a new year every bit as meaningfully as January 1. The start of the new school year is inevitably when we as educators are once again humbled by the promise and potential of a new group of students. For many of us, it’s a time when we renew our commitment to making a positive difference in the lives of young people.

It is in the spirit of this commitment that EQAO presents this latest issue of our webmag. We are pleased to present an interview with the new Chair of our board of directors, Dr. Brian Desbiens, whose passion and vision are sure to inspire you. We are grateful to the fine educators at Sacred Heart High School in Stittsville and Haileybury Public School in Haileybury, who have shared their experiences and exemplary practices in this issue. The articles on EQAO’s approach to creating open-response math items and on getting the most out of EQAO data and reporting were written by EQAO’s own expert staff and will certainly provide new insights for many readers.

As a final word, I invite all readers to register to view the live webcasts EQAO will be presenting from our upcoming conference on November 13 and 14. We are very excited about the exceptional lineup of conference speakers and are pleased to offer these sessions to a larger audience over the Internet. I hope you will take advantage of this terrific opportunity. ■

Marguerite Jackson

CEO, EQAO

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Coffee Break



Interview with Dr. Brian L. Desbiens, Chair EQAO

Student success and innovative learning and teaching strategies have been Dr. Desbiens's focus throughout his career. He has contributed to the development of numerous education policies and has sat on government panels, including the working group established to reform the secondary school structure in the 1990s. Dr. Desbiens serves on the Ministry of Education's Curriculum Council. He has also served on the boards of several provincial and national organizations, such as

the Ontario Committee of Presidents of Colleges, the National Advisory Board on Science and Technology and the Canadian College Presidents' Network.

Dr. Desbiens was president of Sir Sandford Fleming College for 16 years. He began his career as a faculty member and counsellor at St. Clair College and later became head of counselling and health services, dean of students, vice-president of administration and principal of the college's Thames campus. He has taught at the secondary, college and university levels. Dr. Desbiens holds a master's degree in guidance counselling and higher education and a doctorate in counselling psychology.

1. **You've been a member of EQAO's Board of Directors for over three years now. What first interested you in getting involved with this agency and Ontario's large-scale assessment program?**

Initially, I was quite critical of large-scale assessment, and [former chair] Charles Pascal knew that when he invited me to consider nomination to the board. Charles loves a good debate and healthy discourse, because he believes, as I believe, that challenging the status quo is what makes us better. While I was critical of large-scale assessment, I was also a believer in proper diagnostic testing. I know how understanding someone's strengths and challenges can help that person become a more effective learner. And that is what education is all about—setting up each student to be able to learn. To my delight, I saw the EQAO Board focus on learning. It doesn't matter if it's large-scale assessment or diagnostic testing—these are tools—tools that can foster more effective learning.

I strongly believe in building a culture of evidence. My mistake in the 1990s was underestimating the potential of large-scale assessment to create dialogue and debate that would lead to a more evidence-based culture. EQAO isn't just about testing;

it's about using this evidence to create tools to support effective learning.

2. **Now that you are chair of the board, what will be the particular focus of your leadership?**

First, I want to maintain EQAO's tradition of excellence. There is a legacy of being a world-class operation that must be sustained. You build on the history. The dedicated staff and board have made this place highly successful. Second, I believe that the only way to remain excellent is to critique ourselves. I want to look for new ways to work with and for educators, students and parents. We have stakeholders who do not fully understand where EQAO fits into Ontario's public education system. We have a huge opportunity to increase the level of understanding of parents and the public. Third, how do we help an individual reach his or her potential? I am really advocating for working with those who teach children in the early years, so that we can identify kids who need interventions at an earlier stage, right at the beginning of their education. A child's ability or inability to overcome learning gaps is evident at a very young age. If we can begin our work at this level, these kids will be better prepared for our school system and for life. Last but not least, we need to continue collaborating with educators. As part of the learning continuum for each student, the transition years at school are very important, and I would like to focus our efforts here. The transition from elementary to secondary school is a difficult one; so is the transition from secondary to post-secondary or to the world of work. We need to know that we are sharing the right information with educators to help them make the transition for students easy and successful. I want to identify the need for intervention as early as possible and ensure that teachers have the tools and information they need to set every student up for success. Success in math and literacy fosters a sense of self-esteem and self-confidence. We are developing human beings through education. Not being able to learn has a huge impact on a person's perception of their own self-worth, which affects a person's entire life.

3. **Having been an insider for some time now, what do you wish all teachers and principals in Ontario knew about EQAO?**

The bottom line is that EQAO is about helping students. Our goal is for every young person to reach his or her potential. We want 100% of Ontario's children to be successful. That has to be our aim. Our commitment as an organization is to help educators by providing them with information that will make their interventions most effective. The other thing I would like educators to know is just how professional and excellent EQAO is at its work. This is a world-class operation because of the outstanding people, the secondment of field staff and the organization's leadership. This agency does not assume it has the right answers, but explores to find the right answers. The real power of our model is just emerging. For example, this year marked a significant improvement in the Grade 6 results. This kind of improvement is possible because teachers and the education system are focusing on the right things. They are focusing on how to teach the curriculum in new and better ways, and they are developing targeted interventions based on EQAO and other assessment data.

4. **What do you see as the agency's particular strengths?**

First of all, its leadership. Marguerite Jackson is one of the finest leaders with whom I have ever worked. She knows how to

respect and use the expertise of her board and staff. She has tremendous respect for educators and passion for helping young people.

Other strengths are EQAO's reports and its outreach to and communication with educators, which have evolved with the organization's experience and input from the profession. That is incredibly powerful. There is a constant striving for change focused on how to help educators, students and parents learn and understand. You don't see any resistance to change here. We are also fortunate to have a supportive and engaged Minister of Education, who is passionate about education. Minister Wynne is committed to supporting our goal of creating a culture of evidence, and she respects the independence of the agency. We have the responsibility of reporting to the public, and the minister wants us to share good news with the public as well as identify and articulate the challenges.

5. Where would you like to see progress made over the next few years?

We must continue to lead in research and the application of our findings.

We collect invaluable data through our assessment tools. If we are going to create a culture of evidence, we need to look at what other evidence is out there and how it can be married with what we're doing. I would like to see us integrate data from the diagnostic tools teachers are using with our data so that we can provide educators with a whole package.

We can never be complacent about the quality of our tests or the administration of our tests. We have to continue to be critical of our approach, and conduct research to ensure that our methods are the best in the world.

We have to look at how our information is being used. Also, we need to examine how we work with educators at all levels to see how evidence helps build the right intervention tools, then assess whether the intervention tools remediate the identified issue. We must ensure that the evidence is used in an appropriate way and that the improvement strategies that are most effective are identified and shared. We have a responsibility to the general public, the educators and the minister to share this information. We must talk about the challenges we see. For example, it does not appear as if there is significant progress being made in the Grade 9 applied mathematics program. We need to address that collectively.

6. You recently toured a number of schools across Ontario to speak directly with educators about the large-scale assessment program. What did you learn on this tour, and did anything surprise you?

I was impressed by the quality and integrity of EQAO's field officers and, as past principals themselves, how well they connected with the schools and the educators. It became clear to me that the school-visit component of our work is very important.

It was wonderful to see the teachers in action, effecting positive change with their interventions. Leadership is often perceived to be from the top down, but real change starts here—in the classroom, at the ground level. I saw principals and

teachers who are champions for change and improvement. I saw educators working collaboratively to increase their expertise and elevate their own performance.

I was not surprised to learn that when we profile a school for its successful practices, it means a lot. But the depth of that feeling surprised me. One school said that being profiled by EQAO was like receiving a gold medal at the Olympics. The educators are proud of their work, and rightly so. The success of the students is its own reward, but being recognized is also an important and an appropriate part of reinforcing the need for change that is required for success.

What I found really impressive were the teams—principals and teachers, whole departments—working together to create a culture of success in the whole school, and not just in a single classroom or grade. It is often asked “how do we make literacy a priority?” These educators are doing it by integrating literacy into the entire curriculum across the school, ensuring that all activities reinforce one another. These educators are thinking holistically, asking “how do we bring everyone in?”

I was pleased to see the changes occurring in the secondary panel. There is increasing dialogue across subjects and efforts to imbed literacy and numeracy across the curriculum. The dialogue is increasingly taking place between elementary and secondary schools, which is a big part of getting the right information to educators in order to help each individual student.

EQAO is only a small part of the assessment picture. Ultimately, the child is at the centre of this picture. All that we do complements and enriches what the teacher does. There is diagnostic work, classroom evaluation, observational data and information from other teachers or a previous school. We are a piece of the picture. We must ask “how can we help you? How can EQAO be a support?” Our role is to provide real, factual data to educators.

7. Looking to the next three to five years, what role do you think EQAO's assessment program can fill in Ontario's publicly funded education system?

EQAO can be a vehicle for best practice, and this relates to building the evidence-based culture I spoke of earlier. The combination of our assessment data, the work of our field officers and the documentation and sharing of best practices with educators across the province is a powerful way to affect change in the classroom and in the curriculum. EQAO data is being used by educators to support the success of every child; this is of significant value to our education system.

EQAO is about progressive learning. Our tools are snapshots of students' performance in specific grades at specific times, but we are about progressive learning. Our model is helping all students reach their full potential throughout their journey through school.

We can continue the momentum of excellence that already exists at EQAO. This means an emphasis on collaboration with educators and outreach to parents. If we partner with teachers' colleges, new teachers will leave school already educated in best practices and fully prepared for the classroom.

We want to change the perception that examining data is looking for deficiencies. That's a negative. We want to talk about using the results and the data to change learning and to support student success. For example, literacy scores have been increased and sustained across the province, because the data showed educators what areas required attention and which students required interventions. Identification is not about isolation—it's about making a difference for each student. And that's a positive. In fact, that is the core purpose of our work. ■

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- ☐ **C** This article is OK. It is somewhat interesting, but I already knew a lot of what it has to say.
- ☐ **D** I did not find this article interesting.

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View from the Front of the Class



Teacher Advocacy - Confident Learners – Successful Students

Marie Burnett, Language Arts
Lorraine Carney, Mathematics, Science
Cheryl Ellis, Student Success

Sacred Heart High School (Stittsville), Ottawa Catholic DSB

Sacred Heart High School, in Stittsville, serves approximately 2000 students from Grades 7 to 12 and has a mostly homogeneous English-speaking student population. Celebrating its 10th

anniversary in 2008, the school has more than doubled its student population since it opened. This reflects the growth of its community, which is attributed to the expansion of the high-tech industry, the area's main source of employment. Most students are bused daily and travel up to an hour to and from school. Students in applied programs comprise 20% of the student population, and approximately 22% of the school's students have been identified as having special needs.

When the Ministry of Education introduced the Student Success Initiative in 2005, the Ottawa Catholic District School Board directed each of its schools to develop a program to meet the unique needs of its community, in order to provide students with every opportunity to meet with success. The concept of the Achievement Centre was initiated to align with this vision, and it evolved over the first couple of years, as each school worked at developing a program that best suited its community.

Sacred Heart High School embraced this opportunity to create an Achievement Centre to focus on the needs of students identified as being at risk. Two of Sacred Heart's staff members with strong curriculum backgrounds and a variety of teaching experience at the junior, intermediate and senior levels, Marie Burnett and Cheryl Ellis, were instrumental in the development of this centre. Supported by the administration, they believed that if the Achievement Centre was to be successful, curriculum expertise would need to be an integral component of the student's pathway to success.

At the beginning of each school year, the Ottawa Catholic School Board provides each school with a list of students who are considered at risk because they are behind in credits in Grade 9 or 10 or have been identified according to other criteria, such as elementary EQAO results. In addition, teachers at Sacred Heart



small group intervention in the Achievement Centre. Burnett and Ellis work with the Guidance department to review the student list and flag the students' areas of academic challenge.

The Achievement Centre initially focused its programming on literacy and was staffed by Burnett and Ellis. However, examining the Lorraine Carney, Marie Burnett, Cheryl Ellis and EQAO data over time as well as school-based data, the Sacred Heart's staff discovered that students were experiencing difficulty in mathematics. The administration and staff agreed with a Student Success Team recommendation that a mathematics and science teacher be assigned to the Achievement Centre, and in September 2007, Lorraine Carney joined the team.

Burnett, Ellis and Carney believe that all students can be successful with the appropriate supports, and the rest of the staff bolster their efforts to ensure that the Centre is a safe and welcoming place for students. The staff believes that appropriate student placement and early intervention strategies are key to student success and is committed to preventing student failure before it happens. The staff discusses students' progress and transitions students into the Centre or reintegrates them back into the classroom at regularly scheduled check-ins.

The Centre must be open to change if the needs of the students are to be met.

Carney states: "The Achievement Centre must be flexible in nature to meet the needs of individual students and the staff. Students may work with us for extended periods of time because they are at risk of failing a course, or their stay with us may be temporary because they need to catch up in a course for a number of reasons. Critical to the success of our program is the ongoing communication and commitment among the teachers, who see the value in the program and invest in it."

The Centre team has built a rapport with the students and expects them to stay on task and to be accountable for their work and behaviour, and the students respond with hard work. Curriculum delivery methods in the Centre vary to meet the individual needs of the students. Classroom teachers support the Centre's work by continuing to work with the students, whose confidence benefits. In many cases, the course work is done in the Achievement Centre but the classroom teacher supports the student by administering assessments, providing feedback and monitoring progress.

The credibility of the Achievement Centre among the rest of the staff has been a major factor in its success. As the Centre was being developed, it was sometimes difficult for other teachers to understand how it would fit into credit accumulation and how it would maintain the integrity of each credit. But the Centre team has gained the trust and respect of the rest of the staff, and the Achievement Centre has now evolved to the point where the staff is comfortable supporting students as they cycle in and out. The staff now sees the Centre as a valuable resource for them and the students who attend.

The staff understands that many of the difficult-to-serve students need alternative programming to succeed. Burnett, Ellis and Carney know that the curriculum must work for the students, and it often becomes secondary as they and the other staff support the students through difficult periods.

The Achievement Centre also provides the opportunity for students to catch up on work they are behind on because of illness or

absenteeism, or to recover missed credits. In these cases, classroom teachers work with the Achievement Centre staff and the students to determine what is necessary to meet the credit requirements and mark the work done. Course end dates are flexible if circumstances demand it and, as a result, Sacred Heart has a low dropout rate.

"Many of the students who attend the Achievement Centre program are students you would not typically see working, but as the confidence in their ability grows and they begin to experience success, they work hard to accumulate credits," reports Burnett.

Ellis states: "The success of the Achievement Centre stems from the commitment of the entire staff to communicate and regularly review the needs of their students. Their flexibility and willingness to work with the Achievement Centre staff to reintegrate students into their regular classroom has made the Achievement Centre a place where students willingly come and work hard. Students are fortunate to have these advocates who work together to provide opportunities for every student to achieve success."

Burnett, Ellis and Carney, as the Achievement Centre team, have demonstrated how the power of collaboration and sharing of strategies has empowered teachers to become advocates for their students and students to become "hooked on learning". This power ultimately has given students confidence in their ability to be successful. ■



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The Key to Good Assessments



Writing Open-Response Mathematics Questions: EQAO's approach

By Sandy DiLena, Education Officer, EQAO

This article describes the process that EQAO uses to create open-response questions (also called open-response assessment items), and shares lessons learned and information that could be useful to classroom teachers in the development of their own classroom assessments.

EQAO measures the achievement of mathematics curriculum expectations of students across Ontario at the end of Grades 3, 6 and 9. EQAO results are reported at the provincial, school board, school and individual student levels. They are used by the Ministry of Education, school boards and schools to improve learning, teaching and student achievement.

EQAO's assessments are summative. The reports provide summaries using achievement levels to indicate how well students are achieving the curriculum expectations. The following table describes the differences between EQAO's large-scale assessments and classroom assessment. This table can be found in the framework for each of the assessments on EQAO's Web site, www.eqao.com.

Differences Between Large-Scale and Classroom Assessment

EQAO's Large-Scale Assessments	Classroom Assessment
The purpose of EQAO's large-scale assessments is to provide comparable year-to-year data to give educators and the public information on student achievement.	The purposes of classroom assessment are to improve student learning (using models such as Ministry exemplars to assess the quality of work), to report regularly on student achievement and to provide timely, constructive feedback for improvement.

- EQAO's large-scale assessments provide reliable, objective and high-quality data that can inform school boards' improvement planning and target setting.

- Classroom assessments encourage students to engage in self-evaluation and personal goal setting. They also provide parents with information on strengths and weaknesses that can be used to encourage improvement.

- EQAO's large-scale assessment materials are created and scored "at a distance." The assessment scorers do not know the students personally.

- Classroom assessment materials are usually created and marked by a teacher who knows the students personally.

- EQAO's large-scale assessments are summative; they present a snapshot of student achievement or learning at the time the assessment is administered.

- Classroom assessments are conducted in an instructional context and include diagnostic, formative and summative assessment. They are administered at regular intervals over time.

- EQAO's large-scale assessments require students to demonstrate their knowledge and skills independently on standardized tasks and under standardized conditions, although some accommodations are allowed for students with special education needs.

- A wide variety of supports (reminders, clarification) are often available to address students' special education needs and abilities.

- EQAO's large-scale assessments measure achievement against expectations from the prescribed curriculum and contain tasks and items that sample from and represent the curriculum for the domain assessed.

- Classroom assessments measure expectations from the curriculum and contain tasks and items that represent expectations, topics and themes that have been taught. The questions are written in language used regularly in the classroom by the teacher.

EQAO's large-scale assessments provide the same (in a given year) or psychometrically comparable items (from year to year) for all students.	Classroom assessments can provide modified items or tasks tailored to the special education needs of individuals or groups of students.
In order for students' results on EQAO's large-scale assessments to be comparable across the province, the assessments must be administered, scored and reported on in a consistent and standardized manner.	Results of classroom assessments across the province are not always comparable, because of the variation in administration procedures and time allowed, amount of teacher support, modification of items to suit student needs and teacher autonomy in marking.
For EQAO's large-scale assessments, all scorers use the same scoring guides and are trained and monitored to ensure objectivity and consistency.	The marking of classroom assessments is more subjective and is often influenced by contextual information about the students that is available to the teacher. Teachers use the achievement charts in the curriculum policy documents to guide assessment decisions.

Item Writing Committee

Each fall, a committee of teachers from across the province creates questions that will be field tested in EQAO assessments a year and a half later. Using the field-test data generated during scoring, EQAO selects the best performing questions, which become the assessments for the following year. It takes approximately three years from the time it is written for a question to contribute to a student's score.

Ontario educators with experience in the assessed grades are chosen to write questions. The question writing is done in two sessions of two days each during which the writers are trained and supported by EQAO education officers.

During the first session, the writers draft questions and any necessary graphics based on the following directions:

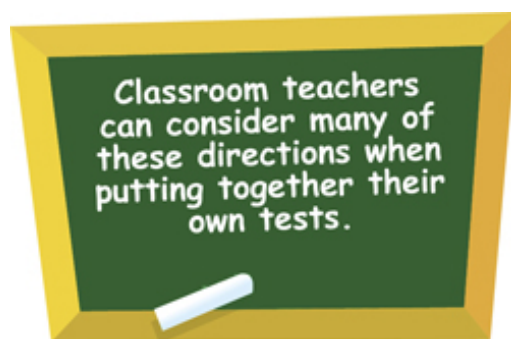
- ◆ Aim to have students demonstrate conceptual rather than procedural understanding. Questions eliciting such demonstrations tend to be richer and provide more opportunities for feedback.
- ◆ Be as concise as possible. While contexts for questions are necessary, do not write a story. The question should assess mathematics comprehension, not reading comprehension.

- ◆ Use consistent language (e.g., don't use "price" and "cost" to refer to the same thing in a question.)
- ◆ Write a solution to your question. You will be surprised by what you discover as you think through the mathematics.
- ◆ Find as many different solutions to the question as you can. The more solutions, the richer the question.
- ◆ Consider the possible errors that students could make. What do these errors tell you about the students' conceptual understanding?

Between the first two sessions, the questions are edited and laid out produced by EQAO staff. Then they are sent back to the writers who try the questions out with students in cognitive labs. The purpose of the cognitive labs is to gather feedback from students about the success of the questions, not the success of the students (e.g., is a question clearly stated? do the students understand what they are being asked to do?) At this stage, the item writers are required to test their questions on students of the appropriate grade with a range of abilities. The writers sit with the students to discuss the clarity of the wording, graphics and presentation. Teachers are asked to reflect on student responses with questions such as:

- ◆ Are these responses what you expected?
- ◆ Were the students well prepared for the question?
- ◆ Is the question itself flawed?

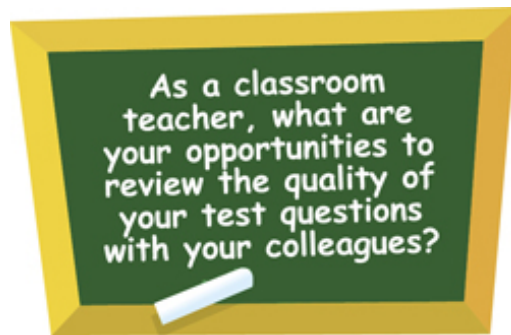
During the second session, the writers use the information gathered during the cognitive labs to edit their questions. The writers also engage in peer editing with their colleagues to reflect critically on their questions. Once the editing is complete, using a generic rubric the writers develop question-specific rubrics to be used for scoring.



Assembling the Assessment

All EQAO assessments are configured according to an assessment blueprint. The blueprint clusters the curriculum expectations according to the number of open-response questions in each grade's assessment. Some expectations cannot be assessed by paper and pencil tests and need to be assessed by alternative methods, such as performance tasks, journals and investigations. EQAO identifies the expectations not addressed by its assessments using italics in the blueprints. A version of the blueprint for each assessment can be found in the assessment's framework at www.eqao.com.

The blueprint gives the number and types of questions to come from each cluster as well as the skill from the achievement chart each question is to address. Each open-response question is designed to assess one specific expectation from the mathematics curriculum and one skill from the Ministry's achievement chart for mathematics, and to take students five minutes on average to complete.



It is of utmost importance that each question measure the specific expectation to which it is mapped. EQAO has numerous checks to ensure this mapping. All potential questions are presented to an Assessment Development Committee (ADC) composed of six Ontario educators per grade for review prior to field testing in addition to internal reviews by EQAO staff and peer reviews by other writers. The ADC brings “fresh eyes” and reviews the questions according to the following criteria:

Can the question be answered correctly by students who have acquired the skill being assessed?

Does the question assess the assigned

- ♦ curriculum expectation?
- ♦ category of knowledge and skill from the achievement chart?

Is the question mathematically sound?

Are the following appropriate for the designated grade?

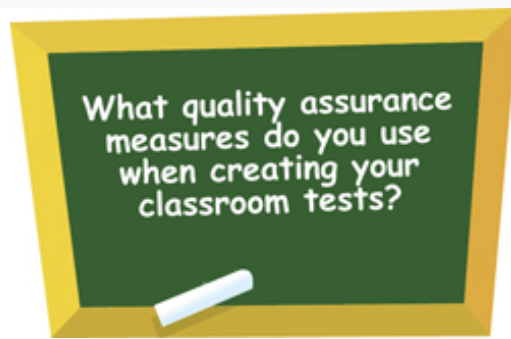
- ♦ the diagrams
- ♦ the contexts
- ♦ the language

Is the question clear, concise and grammatically correct?

Do the graphics assist or hinder? Are they clear and accurate?

Does the question allow for scoring according to the four performance codes (see the generic rubric)?

Does the question take about five minutes to complete?



Following the ADC meeting, the same questions are presented to a Sensitivity Committee composed of Ontario educators for a review to ensure they are free of content that might cause a particular student to be advantaged or disadvantaged. This committee also uses the following questions to check for sensitive content:

Is the question

- ♦ clear and unambiguous?
- ♦ free of content that is offensive to any group of people?
- ♦ egalitarian in its treatment of world views?

Considerations:

- | | |
|-------------------------------|-----------------|
| • Gender | • Sexuality |
| • Race, ethnicity and culture | • Politics |
| • Economic and social class | • Social issues |
| • Regional differences | • Celebrations |
| • Religion | • Nationalities |

Now Let's Look at Some Examples

During training for item writing, the writers are given descriptions and samples of questions that address the skills outlined in the achievement chart for mathematics. For example, the skill “knowledge and understanding” is exhibited when students demonstrate subject-specific content (knowledge) and the comprehension of its meaning and significance (understanding). When Grade 9 academic students are asked to add or subtract polynomials, they are demonstrating knowledge and understanding.

The skill of “thinking” is exhibited when students engage in a critical-thinking process to select and sequence a variety of tools to solve a problem. To answer a question that addresses this skill, students need to make a plan. The plan is demonstrated through their solution process.

The skill of “application” is exhibited when students select the appropriate mathematical tool or get the necessary information and

“fit” it to the problem. For example, on the primary division assessment, a question that states the number of stickers that each of two children has and asks for the total number of stickers would be considered a question addressing application. To answer the question, a student needs to choose the tool of addition and apply it correctly.

To illustrate further, the following examples have been chosen from EQAO's [released materials](#)

Example 1 (Junior Division, Spring 2007, Question 9)

Using a ruler and protractor, draw a right trapezoid with a side measure of 5 cm.

Measure and label all angles.

Show your work.

This sample addresses the skill application. To be successful, students need to select from their knowledge information about a trapezoid and accurately apply it to draw, measure and label the required construction.

Example 2 (Primary Division, Spring 2007, Question 30)

Steven earns \$5 for every bundle of newspapers he delivers.

He wants to buy a game that costs \$18. How many bundles of newspapers does Steven need to deliver to earn enough money to buy this game?

Show your work.

This question addresses the skill thinking. In order to be successful, a student's plan would include selecting the tool of addition to add \$5 amounts until a total close to \$18 was reached. Next, the student would need to deal with the fact that \$18 is not a multiple of \$5 and, finally, determine how many bundles of newspapers needed to be delivered.

Perhaps the most challenging part of writing open-response questions is ensuring they are rich enough to allow students to demonstrate four distinct performance codes. Sometimes this challenge becomes evident only after students have attempted the question. As mentioned above, question writers create question-specific rubrics with four codes to be used to score their open-response questions. These rubrics include a description of a sample response corresponding to each of the four codes of performance. These descriptions force the writers to think about and be accountable for whether their questions allow four distinguishable performance codes.

EQAO does not use open-response questions to address the skill knowledge and understanding, because such questions do not provide an opportunity for students to demonstrate four performance codes. These questions tend to elicit an answer that is either correct or wrong. Because of this, EQAO measures knowledge and understanding using only multiple-choice questions.

As stated above, one of the key differences between large-scale assessment and classroom assessment is the method according to which the open-response questions are scored. In the classroom, the teacher is usually the one who decides how well a student has performed. At the EQAO scoring site, a large number of educators are trained to score student responses by matching them to well-chosen anchor papers. Another committee of Ontario educators, the Range-Finding Committee, meets to select these papers. The anchor papers exemplify each of the codes on the scoring rubric.

When Items Can't Be Used by EQAO

Sometimes questions present scoring problems after field testing and cannot be used on an operational test.

Consider the example below.

A school supply store sells the following items:

Markers \$3.00	Notebook \$1.75	Calculator \$4.25
Binder \$4.75	Pencil Case \$3.75	Paper \$2.50
	Pencils \$2.25	
Pencil Sharpener \$0.50	Eraser \$0.75	

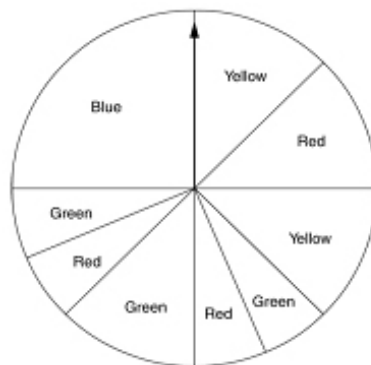
Cheryl goes to the school supply store with \$10.00. She buys 3 different items and gets \$2.50 back in change. Which items could she have purchased?

Justify your answer.

This question was not chosen for the EQAO assessment, because there are so many items in this question for students to choose from. Every student response must be scored validly and reliably, and maintaining scoring consistency here would be very difficult. This question would be better in a classroom, where discussion could take place.

Consider the following question.

Look at the spinner shown below.

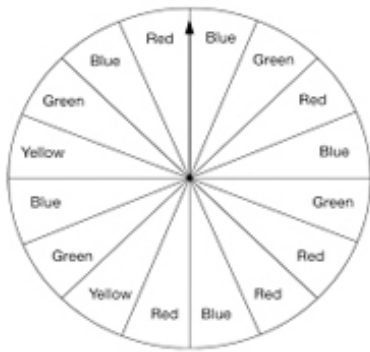


What is the probability of the arrow landing on a red, green or yellow section?

Justify your answer.

The probability of the arrow landing on red, green or yellow is _____.

It was written to address the expectation from the Data Management and Probability strand that states that “students will express theoretical probability as a ratio of the number of favourable outcomes to the total number of possible outcomes, where all



outcomes are equally likely.” Because all outcomes on the spinner are not equally likely, this question does not assess the curriculum expectation. Further, if the spinner were like the one to the left, on which all outcomes are equally likely, the question would not elicit the four performance codes.

Correctly answering the question now involves counting the number of red, green and yellow sections and expressing this as a fraction with a denominator of 16. This question was not used on an EQAO assessment.

Conclusion

We hope that this article has provided insight into the process EQAO uses to ensure that its data are valid and reliable. We also hope that you will be able to adapt this process to benefit your classroom.

Good-quality assessment questions are the cornerstone of good-quality assessment. You are invited to [apply to participate on one of the committees](#) mentioned in this article: Item Writing, Assessment Development, Sensitivity or Range-Finding. ■



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Spotlight



Heather Rody (Principal of Curriculum), Gavin Date (Principal), Katherine Langille (Gr. 3 Teacher) and Carol Lowery (Gr. 3 Teacher).

Celebrating the Success of an Ontario School

Haileybury Public School

District School Board Ontario North East

School population: 227

Grades: Junior Kindergarten—Grade 8

Principal: Gavin Date

Haileybury Public School, on the banks of Lake Temiskaming, serves 227 students from a broad range of socio-economic backgrounds. Job losses in the community and a new French Immersion program at a nearby school have contributed to declining enrolment. All students were born in Canada and speak English as their first language.

Changes over the past five years include the introduction of all-day, everyday junior and senior kindergartens and an Integrated Behaviour Program, which serves one component of a growing special needs population. The school has implemented a Practical Academic Life Skills leadership program, which trains senior students to direct playground activities. A full complement of extra-curricular activities and intramural athletic teams promote school-wide engagement.



Five years ago, the primary division at Haileybury participated in a board-wide initiative to implement a balanced literacy program. As a result, many effective teaching strategies were developed. Focused instruction of the curriculum resulted in improved EQAO assessment scores, but the real success came when teachers started talking to one another, sharing ideas, concerns and strategies and working as a team with common goals. Involvement with the Ministry's CODE project and,

later, participation in the Ontario Focused Intervention Partnership 1 assessment process resulted in the creation of the cohesive unit that the staff is today.

There has been a dramatic change in the atmosphere, collegiality, confidence, sharing and general culture in the past two years. It's phenomenal to walk into this warm environment of friendly faces, and see people who are happy doing their jobs

and proud of the work that they are doing.

Heather Rody, Administrator of Curriculum

Literacy coaches helped teachers refine strategies related to explicit instruction, as well as plan and make presentations to their own professional learning community. They also provided workshops and met with staff to develop specific expectations and goals, thus ensuring consistency in the delivery of the curriculum across the grades.

This alignment of the Ministry and the board as facilitators of staff development was crucial in demystifying the curriculum and in clarifying its direct relationship to the EQAO assessments. A recent professional development day was devoted to analyzing EQAO data and demonstrating their usefulness in guiding instruction. Now realizing that EQAO's assessments are curriculum-based, the teachers are more motivated to use the data to improve student achievement.

EQAO now makes sense to me. Explicit teaching, the strategies and the links, all fit together. It helps us to become better teachers. It guides us.

Kathy Langille, literacy coach and Grade 3 teacher

At Haileybury, it is now understood that working collaboratively, with purpose and direction, is the best preparation for EQAO assessments. While initiatives originally driven by EQAO data concerning comprehension skills continue to be addressed at Haileybury, critical thinking and higher-level answers are now priorities. To this end, the school employs the Better Answers formula, which challenges students to restate the question, estimate the response, give supporting details, revise and check for clarity. Moreover, teachers ask higher-level questions, model the EQAO question format, display their own students' work as exemplars and provide individual conferencing opportunities. All teachers from junior kindergarten to Grade 8 are expected to use this approach. The success of these measures is evidenced in the quality of writing that the school's students produce.

Consistency across all grade levels is crucial in order for students to be successful. With the right type of support and sufficient time, all students can be successful. I am proud to be part of the environment, to be working with these teachers. There's a feeling of trust. We know where we're going, and the students know where they're going. Vision and accountability are key.

Gavin Date, principal

The additional sources of evidence used to measure student achievement at Haileybury are many and varied. For example, DRA, PLAB, Canadian Test of Basic Skills, Gates MacGintie and classroom data all contribute to group and individual profiles. DRA is administered to all students, and DRA data tracking walls help to guide daily instruction. In addition, the Primary Learning Assessment Battery has led to an intensive student improvement plan for early intervention in Grade 1. Further measurement tools

involve SMART goals, which are part of the improvement plan, and Critical Pathways, which targets students scoring below Level 3.

In-school strategies designed to improve teacher-capacity coincide with a board-wide emphasis on accountability and consistency. A new initiative requires teachers who attend external professional development events to present the information they acquire to other schools in the board on their return. The board also shares a commitment to using data to guide instruction and measure success.

There is a strong focus on student success at Haileybury. Every effort is made to maximize the learning opportunities available to students. The school's schedule includes large uninterrupted blocks of time for literacy and math. This allows primary teachers time to employ the explicit instruction strategies they have developed and students time to practice the skills they have been taught. In addition, cross-curricular integration makes it possible to cover the curriculum in a meaningful and exciting way. Differentiated instruction is valued as a means of teaching students to engage in critical thinking at an early age. The focus is on providing good-quality instruction that will lead to good-quality results.

Great teachers! Great results!

Gavin Date, principal

The tremendous improvement over time in student achievement at Haileybury is a testament to the talent, dedication and passion that the staff brings to work each day. Supported by a highly focused and optimistic leader, Haileybury's staff members are constantly evaluating themselves, as well as their students, with a view to perfecting their practice. It is little wonder that the students in their care have scored well above both provincial and board averages on the primary EQAO assessment. ■



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Data in Action



Exploring the Many Layers of EQAO Assessment Data: Peeling the Onion

By Michael Kozlow, Director of Data and Support Services, EQAO

It is useful to consider the process of interpreting EQAO assessment data as a journey through several layers of information. Assuming the role of detective can help you use the clues contained in the EQAO assessment reports to answer the following fundamental question:

- What do the assessment results tell me about how well my students are meeting the expectations in *The Ontario Curriculum*?

Dealing with the various layers of data from the EQAO assessments may appear to be a complex task, but it is quite manageable if approached in a systematic manner. Working with the data can be simplified if you ask a series of key questions about each level of data that help answer the fundamental question above. Asking the right questions can help you demystify the data and reveal clues that can be useful in guiding decisions about instruction. As the detective, you are looking for meaning, patterns and relationships.

A prerequisite for demystifying the data is recognizing that you do not need to be a statistician to understand the numbers. While the statistical procedures for equating assessments from one year to the next and for generating the results are complex, the data actually presented in EQAO reports are not. Most of the results are expressed as percentages, which educators deal with on a daily basis and readily understand.

A key point to keep in mind is that the percentages in the EQAO reports are different from the percentages that are most commonly used in classrooms. Teachers frequently convert a student's scores on a test to a percentage of the total points on the test or calculate an average percentage of all student scores in a class or in the school. The percentages in the EQAO reports are percentages of students demonstrating specified achievements. When EQAO reports that 78% of the Grade 3 students in the school met the provincial standard, this does not mean that the students in the school have an average of 78% on the test.

While the discussion in this article applies to all EQAO assessments, performance levels and the provincial standard apply most directly to the primary, junior and Grade 9 assessments.

Before you delve into the data with your questions, consider the following guiding principles to put the results into context:

Your school, like every school, is unique and has a distinctive character that comes from the community it serves. Review the demographic and attitudinal data in the school report as well as other information that you have about your school.

In results over time, small increases or decreases from one year to the next are far less important than the general trend.

EQAO assessment results need to be considered together with those of other school assessments.

Always connect back to the curriculum; review the assessment frameworks and the specific assessment items to develop a clear understanding of what is being measured.

Become familiar with the assessment frameworks as they relate to the curriculum, the assessment items and the provincial results prior to your detailed examination of school results.

EQAO publishes a variety of reports that present different perspectives on the assessment results. Using the full range of reports will enable you to get a more complete understanding of your students' achievement and will enable you to take full advantage of all aspects of the results as you explore the data for your school. To some extent this is like peeling an onion: you encounter many layers and there may be some discomfort as you peel, but the flavourful rewards are obvious. The key questions in the rest of this article will lead you through the following layers of data:

- Overall results for the school or board (school and board reports)
- Results for subgroups of students (school and board reports)
- Results over time (school and board reports; Cohort Tracking Reports)
- Student achievement on strands and skills and on individual questions ("Profile of Strengths and Areas for Improvement," "Item Information Report: Student Roster")
- Results for individual students ("Individual Student Report," "Item Information Report: Student Roster")

The dialogue provoked by solid data makes a significant contribution to improving student learning. In this sense, data rests at the heart of good teaching. Of course, numbers alone can never tell the whole story. But they can prompt you to ask the questions that will lead you to a better understanding of student achievement.

Key Questions

The following questions will assist you in interpreting the EQAO assessment data and converting the numbers in the various reports into useful information for making decisions:

- 1.** How did the students in my school perform overall and how has this performance changed over the years?

2. What are the characteristics of the students who did not achieve the provincial standard?

3. In which areas of the curriculum did students show strength?

4. How did individual students perform?

How did the students in my school perform overall and how has this performance changed over the years?

Start your exploration of the EQAO assessment data with your school report. This report gives a good indication of how the students in your school performed relative to those in previous years, and relative to those throughout the board and the province.

Consider the following sub-questions:

- What percentage of students are at or above the provincial standard?
- What percentage of students are at each level?
- How many students have been exempted and have no data?
- How have these results changed over the years?

It is important to examine both sets of results in the reports: those of all students and those of participating students. Educators sometimes ask, “Which of these sets of results is correct or more valid?” The answer is that they are both equally correct and valid, but that they provide different information. It is important to know the results of all students in the school, since educators are accountable for all students. It is also important to consider the results of those students who participated in the assessment to evaluate the impact of instructional strategies on them. School staff members will know which students were exempted and what the school is doing to meet their needs. These efforts must be evaluated in terms of expectations for these students and considerations of when they might be ready to write the EQAO assessments.

The Cohort Tracking Report provides an additional perspective on change in student performance over time, since it tracks individual students as they move through the school system. The report provides data on how a given cohort’s achievement has changed from Grade 3 to Grade 6. This will help you develop an understanding of the impact that your school is having on students as they progress from Grade 3 to Grade 6.

What are the characteristics of the students who did not achieve the provincial standard?

It is important to determine the characteristics of the students who did not achieve the provincial standard. Which subgroups are over-represented among this group? The school report includes information on achievement among a number of subgroups:

- Females
- Males

- English language learners
- Students with special needs
- Students in French Immersion (Grade 3)

For example, of the 48 291 Grade 3 students in the province who did not achieve the provincial standard in reading in 2008,

- 29 088 (60%) were males;
- 5380 were English language learners (695 were exempted) and
- 12 798 were students with special needs (3548 were exempted).

Instructional strategies must be differentiated to meet the specific needs of each subgroup and those of the individual students within these subgroups.

In which areas of the curriculum did students show strength?

There are two sources of data that will help you identify areas in which students demonstrated strength and areas in need of improvement: the “Profile of Strengths and Areas for Improvement” and the “Item Information Report: Student Roster.” The Profile report gives an indication of strengths and areas in need of improvement in relation to the skills and strands covered by an assessment. The results for your school are given relative to the results for the province as a whole. For example, if the percentage of students in your school showing strength in Strand A is larger than the percentage showing strength in Strand B, the performance in Strand A among students in your school is stronger relative to the performance of students in the province than their performance in Strand B is. This report provides a quick indication of the achievement of students across the strands and skills.

It is also useful to review the summary data about individual items for the school, board and province in the Student Roster reports. It is particularly useful to look at the results for groups of items. For example, how does your school’s performance on multiple-choice items compare with that on open-response items? How did your students perform on the long-writing task? In making these comparisons, always consider the results for your students in relation to those for the province.

You should not draw conclusions about performance on specific expectations based on the results of one or two items. However, it can be instructive to examine the results for individual items that students in your school did not answer well. Just keep in mind that any conclusions about instructional issues must be limited to the specific content of that item and manner in which the item is constructed. For multiple-choice items, look at which wrong options the students in your school selected.

In all of your discussions, always refer to *The Ontario Curriculum*.

How did individual students perform?

The final layer of information is the achievement of individual students, presented in the “Individual Student Report” and in the “Item Information Report: Student Roster.” Some questions to ask: Who are the students achieving each level? Which students were exempted? Which students are reported as having no data? Why do these students have no data? What is being done for these students?

The “Individual Student Report” for Grade 6 students also includes the students’ achievement results when they wrote the assessment in Grade 3. Some questions to ask: Which students moved to a higher or lower achievement level from Grade 3 to Grade 6? Who are the students who performed below the standard again? Did these students show improvement (e.g., from Level 1 to Level 2)? If students were exempted in Grade 3, were they able to participate in the assessment in Grade 6? This type of review will assist teachers in identifying students requiring additional attention.

Additional Resources

A number of the reports contain suggestions to help you understand and interpret the data they present. Additional data interpretation guides are available on the EQAO Web site, www.eqao.com. The assessment frameworks and the provincial reports contain useful information to assist in the interpretation of your school results.

We wish you a fruitful journey as you explore your EQAO data. ■



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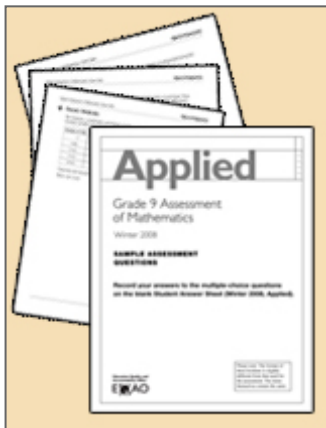
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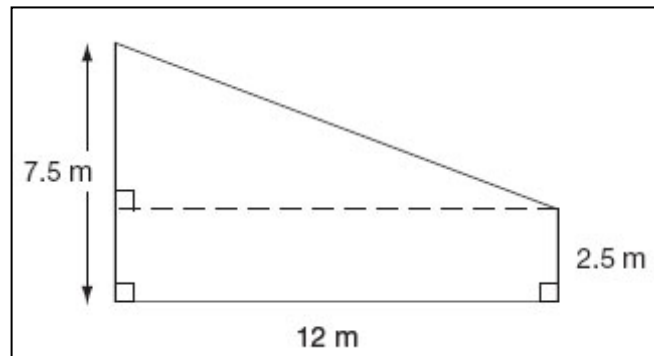
How Would You Score This? _____

Try your hand at scoring a student response!

Sample Question and Answer



Jackson is buying paint for his wall.



One litre of paint will cover 9 m^2 .

How many litres of paint does he need to cover the wall?

Justify your answer.

Jackson is buying paint for his wall.

One litre of paint will cover 9 m^2 .

How many litres of paint does he need to cover the wall?

Justify your answer.

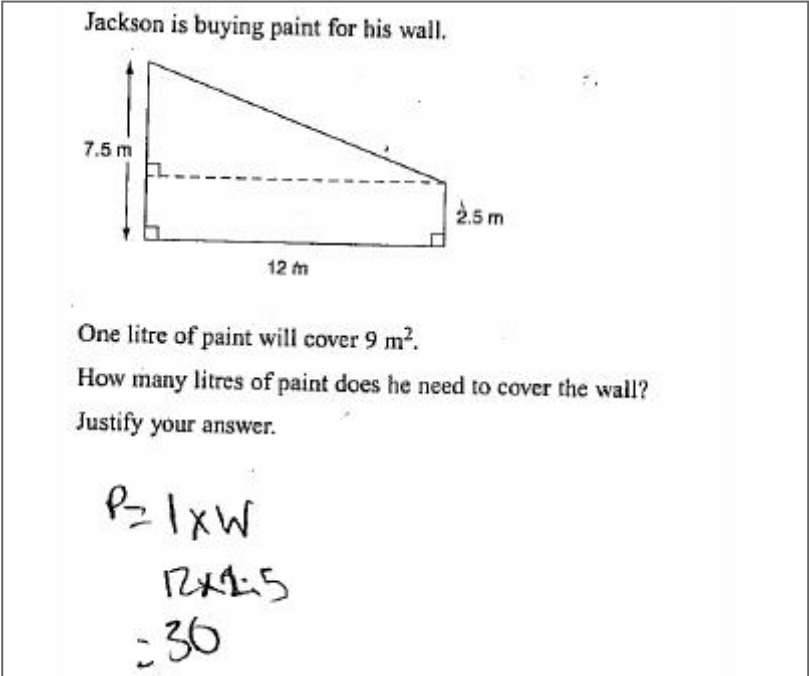
$a = 12$
 $\times 2.5$
 $\hline 30$

$b = 12$
 $\times 5.0$
 $\hline 60$
 $\frac{60}{2} = 30$

$\begin{array}{r} 30 \\ + 30 \\ \hline 60 \end{array}$

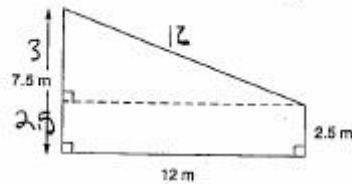
Use the annotations below to determine how you would score this response. Click the button at the bottom for the correct score. You can also use the links in the rubric to view responses that received the other score codes.

Grade 9: Applied Program - Winter Annotations

Code	Description
10	Problem solving process demonstrates minimal evidence of a solution process; calculates area of rectangular part of the figure only. View sample student response Sample Student Response  Jackson is buying paint for his wall. One litre of paint will cover 9 m^2. How many litres of paint does he need to cover the wall? Justify your answer. $P = l \times w$ 12×2.5 $= 30$
	Problem solving process demonstrates identification of some of the important elements of the problem; considers two parts of the figure and appears to determine the perimeters instead of the areas and divides the total by 9 to determine the number of litres of paint required. View sample student response Sample Student Response

20

Jackson is buying paint for his wall.

One litre of paint will cover 9 m^2 .

How many litres of paint does he need to cover the wall?

Justify your answer.

bottom $P = 2(l + w)$

$$P = 12 + 2.5 + 2.5 + 2 = 15.75$$

Top $P = 3 + 12 + 12 + 2 = 9$

$$15.75 + 9 = 20$$

he would need 2.2 cans
of paint to paint the wall.

$$\frac{20}{9} = 2.2$$

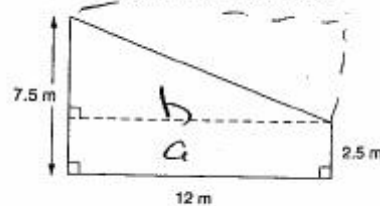
- Problem solving process demonstrates a solution process that is nearly complete; considers the two parts of the figure and calculates the area of the wall accurately, but does not divide by 9 to determine the amount of paint required.

[View sample student response](#)

Sample Student Response

30

Jackson is buying paint for his wall.



$$\begin{array}{r} 7.5 \\ - 2.5 \\ \hline 5.0 \end{array}$$

One litre of paint will cover 9 m^2 .

How many litres of paint does he need to cover the wall?

Justify your answer.

$$\begin{array}{r} a = 12 \\ \times 2.5 \\ \hline 30 \end{array}$$

$$\begin{array}{r} b = 12 \\ \times 5.0 \\ \hline 60 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 30 \\ + 30 \\ \hline 60 \end{array}$$

- Problem solving process demonstrates a thorough understanding of the relationships between all of the important elements of the problem; accurately determines the area of the figure and divides by 9 to determine the amount of paint required.

[View sample student response](#)

Sample Student Response

40

Jackson is buying paint for his wall.

One litre of paint will cover 9 m^2 .
How many litres of paint does he need to cover the wall?
Justify your answer.

$$A_1 = \frac{bh}{2} \quad \& \quad A_2 = lw$$

$$= \frac{12(7.5 - 2.5)}{2} \quad = 12(2.5)$$

$$= \frac{12(5)}{2} \quad = 30 \text{ m}^2$$

$$= 60 \div 2 \quad A_{\text{total}} = A_1 + A_2$$

$$= 30 \text{ m}^2 \quad = 30 + 30$$

$$= 60 \text{ m}^2$$

$$\frac{60}{9} \approx 6.67 \text{ L}$$

∴ He will need approximately 6.67 litres of Paint to cover the wall (rounded to the nearest hundredth).

View Score

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WEBMAG

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We appreciate learning your response to our survey question.

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Thank you for helping us ensure *EQAO Connects* remains of real value to educators.

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Fall 2008

EDUCATION QUALITY AND ACCOUNTABILITY OFFICE



Ask EQAO!

I have some specific questions regarding elementary students who have a learning disability. These students have high-level thinking skills, but have trouble decoding or writing.



1. How do EQAO's primary and junior division assessments of reading, writing and mathematics assess students' ability to predict, infer or make connections?
2. Why can't elementary students who, according to their Individual Evaluation Plan (IEP), need text read to them and writing scribed for them, have the EQAO test read to them and the writing components scribed for them? Grade 9 students who use Kurzweil are allowed to use this tool during the Grade 9 Assessment of Mathematics.
3. What is EQAO really trying to assess—decoding or reading, the physical act of putting pen to paper or the ability to organize and express oneself in the written form?

The primary and junior assessments measure a student's ability to understand explicitly and implicitly stated information and to respond by making connections between information and ideas in a reading selection and personal knowledge and experience. In writing, the assessments focus on the student's ability to develop a main idea, organize the information in a coherent manner and use conventions in a manner that does not distract from clear communication. To enable primary and junior students with special needs to demonstrate their competencies in reading, writing and mathematics, several accommodations are made available. For example, primary and junior students can use an electronic format such as Kurzweil or Premier to complete the reading and writing portions of their assessment, as long as the formats are indicated in the student's IEP. The students can also work with a scribe to complete the assessment, if indicated in the IEP. The scribe must transcribe exactly what the student dictates into the assessment booklet. For further information on EQAO's accommodation policy, please refer to the primary and junior *Guide for Accommodations, a Special Provision and Exemptions* on our Web site.

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