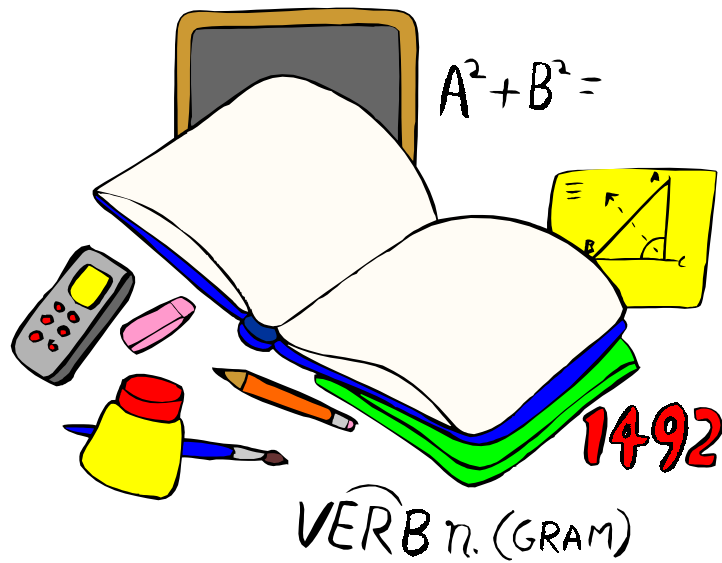




Grade 9 EQAO Assessment of Mathematics 2002-2003

Overview of Results



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Overview of Results



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TABLE OF CONTENTS

Grade 9 EQAO Assessment of Mathematics: 2002-2003

Introduction.....	1
Who is EQAO?	1
What was the assessment?	1
Who participated in the assessment?	2
How was student work marked?	2
Are EQAO results comparable from year-to-year?	2
Some key messages about the EQAO assessment.....	3

Grade 9 EQAO Assessment: Peel and Provincial Board Results, 2002-2003

Background Characteristics	4
Student Achievement.....	4
Tables 1 - 9	5-13
Summary of Results.....	14
EQAO Recommendations.....	15

Grade 9 EQAO Assessment of Mathematics 2002-2003

Introduction

This report contains an overview of the 2002-2003 Education Quality and Accountability Office (EQAO) provincial assessment in mathematics for grade 9. Copies of the full *Provincial Report* can be downloaded from EQAO's web site, which is located at www.eqao.com.

Who is EQAO?

EQAO is an independent, arm's length agency of the provincial government that provides parents, teachers, and the public with reliable and valid information about student achievement. EQAO also makes recommendations for improvement which educators, parents, policy makers and others in the education community can use to improve learning and teaching.

EQAO conducts a range of province-wide assessments. The grade 9 assessment was introduced in 2000-2001. It involves all students, occurs annually, and provides information on what students have learned in mathematics.

This assessment provides both individual and system data on student achievement. Parents receive an *Individual Student Report* and schools and school boards produce local reports for parents and their communities.

What was the assessment?

The grade 9 mathematics assessment measures how well students have met the provincial expectations in *The Ontario Curriculum*. The assessment covers knowledge and skills in mathematics that students are expected to have acquired by the end of the school semester in both academic and applied programs. Specifically, the assessment tests in the four strands of mathematics: Number Sense and Algebra, Relationships, Analytic Geometry, and Measurement and Geometry. There is a different assessment for students enrolled in the applied mathematics program and the academic mathematics program.

Students enrolled in first-semester applied and academic mathematics programs wrote the assessment in January 2003, and students enrolled in second-semester and full-year applied or academic mathematics programs wrote the assessment in May 2003.

Who participated in the assessment?

All Peel grade 9 (9,091) students participated in the assessment during regular classes. Exemptions were permitted only where students would be unable to respond to the assessment in any way and/or where they would be adversely affected as a result of participation. Exemptions were made only with the written informed consent of the parent(s) or guardian(s). In specific circumstances, teachers were allowed to provide certain kinds of assistance to students with special needs. One percent of grade 9 students were exempted from the mathematics assessment.

How was student work marked?

EQAO reports on student achievement in mathematics using a four-level scale. The four levels describe how well students performed in each subject area. EQAO has aligned its four levels of achievement to those of the *Ontario Student Report Card*.

Marking was done in July 2003 by specially trained principals and teachers. EQAO developed scoring scales by taking the four achievement levels established by the Ministry and applying them to actual student work. Markers used EQAO's scales to score student work. The scoring was monitored to ensure that it was objective, consistent, and reliable.

The Ministry of Education has set *Level 3* as the provincial standard for grade 9 achievement. *Level 1* identifies achievement that falls much below the provincial standard. *Level 2* identifies achievement that is approaching the provincial standard. *Level 4* identifies achievement that surpasses the provincial standard.

Are EQAO results comparable from year-to-year?

This year's grade 9 academic and applied mathematics scores can be compared to 2000-2001 and 2001-2002 administrations of the assessments.

Some key messages about the EQAO assessments

- ✓ EQAO urges principals to ensure that school councils are fully informed about the assessment and are encouraged to play an active role in reviewing and updating the school's Action Plan for Improvement.
- ✓ EQAO encourages schools and school boards to include strategies in their Action Plans for Improvement that will help both boys and girls improve their achievement.
- ✓ Parents, educators, policy-makers and the public should use the overall results to measure improvements in student achievement over time.
- ✓ EQAO encourages schools and school boards to be proactive in reporting results to parents and their communities.
- ✓ The achievement data must be interpreted in relation to contextual data that schools and school boards have gathered. Education Quality Indicators Program (EQUIP) will help greatly in this regard.
- ✓ Teachers and principals should use samples of student work, provided by EQAO anchor papers and Ministry exemplar documents, to help students and parents understand what work at Level 3 and 4 looks like.
- ✓ School boards should provide opportunities for teachers and principals to share assessment expertise and successful assessment practices.
- ✓ EQAO's four levels of achievement are closely aligned with those in the *Ontario Student Report Card*.

Grade 9 EQAO Assessment

Peel and Provincial Board Results 2002-2003

Background characteristics

- 9,091 Peel grade 9 students (6,545 in academic mathematics, 2,546 in applied mathematics) participated in EQAO testing: 1% were fully exempt from the assessment.
- Of those students who took the test, 10% were receiving special education support (excluding gifted and enhanced learning students) and 7% were enrolled in an ESL program.

Student Achievement

Grade 9 student achievement results for Peel and the Province are presented in Table 1 for academic and applied programs. The percent of students performing at Levels 2, 3, 4 and Levels 3, 4 are also presented. Table 2 presents the results of the comparison of student achievement scores between Peel and the Province. Table 3 presents the results of the comparison of Grade 9 student achievement scores from 2000-2001 to 2002-2003. Overall achievement comparisons involving gender, ESL enrollment, and special education support, are also presented in Tables 4 through 9.

Achievement results in this report are expressed as the number of students achieving at each level as a percentage of all of the students in the grade, including students who were exempted and those who took part in the assessment but did not provide enough information for their responses to be scored. An additional designation was added to the marking and reporting scale and is referred to as *Not Enough Evidence for Level 1* (NE Level 1).

This method of reporting is EQAO's primary method of reporting because publicly funded schools are accountable for the achievement and progress of all students. Schools and school boards are required to use this method to ensure consistency of reporting across the province.

The overall achievement results in mathematics reported for both the Peel Board and the province may not add to 100%, due to rounding errors.

TABLE 1

EQAO 2002-2003 Results: Peel and Provincial Comparisons - Grade 9
(Method 1 - Includes Exemption, No Data, Not Enough Information to Score, Not Enough Evidence for Level 1 Categories)

	Exempt		No Data		Not Enough Information to Score		Below Level 1		Level 1		Level 2		Level 3		Level 4	
	Province	Peel	Province	Peel	Province	Peel	Province	Peel	Province	Peel	Province	Peel	Province	Peel	Province	Peel
Applied Mathematics	2%	1%	8%	7%	4%	3%	8%	10%	20%	21%	37%	37%	21%	20%	<1%	<1%
Academic Mathematics	<1%	<1%	2%	1%	<1%	<1%	1%	1%	14%	15%	17%	17%	61%	59%	5%	6%
	Levels 2, 3, 4		Levels 3, 4													
	Province	Peel	Province	Peel												
Applied Mathematics	58%	57%	21%	20%												
Academic Mathematics	83%	82%	66%	65%												

When compared to the province:

Peel students in grade 9 scored slightly below the provincial average in Levels 2, 3, 4 and Levels 3, 4 for applied and academic mathematics.

TABLE 2

EQAO 2002-2003 Results: Peel and Provincial Comparisons - Grade 9 (Method 1 - Includes Exemption, No Data, Not Enough Information to Score, Not Enough Evidence for Level 1 Categories)

	GRADE 9		
	Province	Levels 3, 4 Peel	Comparison
Applied Math	21%	20%	-1%
Academic Math	66%	65%	-1%

When compared to the province:

Peel students in grade 9 scored slightly below the Provincial average in applied mathematics and academic mathematics.

TABLE 3

EQAO 2002-2003 Results:

Peel Comparisons of Change in Scores from 2000-2001, 2001-2002 to 2002-2003 School Years - Grade 9
(Method 1 - Includes Exemption, No Data, Not Enough Information to Score, Not Enough Evidence for Level 1 Categories)

Levels 3, 4

	2000-2001	2001-2002	2002-2003	Previous Year Comparison	3 Year Comparison
Applied Mathematics	13%	24%	20%	-4%	+7%
Academic Mathematics	51%	66%	65%	-1%	+14%

When compared to last year's results:

Peel students scored 4% lower in 2002-2003 for applied mathematics and 1% lower in academic mathematics when compared to 2001-2002.

When compared to 2000-2001 results (three year trend):

Peel students scored 7% higher in 2002-2003 for applied mathematics, and 14% higher in academic mathematics when compared to 2000-2001.

TABLE 4

EQAO 2002-2003 Results: Peel Gender Comparisons - Grade 9

(Method 1 - Includes Exemption, No Data, Not Enough Information to Score, Not Enough Evidence for Level 1 Categories)

GRADE 9

	Levels 3, 4		
	Boys	Girls	Comparison
Applied Mathematics	19%	20%	+1%
Academic Mathematics	66%	65%	-1%

TABLE 5**Gender Gap Analysis – Grade 9
Extent to which Girls Outperform Boys in Levels 3,4**

		2000 - 2001	2001 - 2002	2002 - 2003
Grade 9	Applied Mathematics	0%	0%	+1%
	Academic Mathematics	-3%	0%	-1%

The gender gap in achievement in grade 9 applied mathematics has slightly increased since 2000-2001.
The gender gap in achievement in grade 9 academic mathematics has narrowed slightly since 2000-2001.

TABLE 6

EQAO 2002-2003 Results: Peel ESL and Non ESL Student Comparisons: Grade 9 (Method 1 - Includes Exemption, No Data, Not Enough Information to Score, Not Enough Evidence for Level 1 Categories)

GRADE 9

	Levels 3, 4		
	ESL Students	Non ESL Students	Comparison
Applied Mathematics	6%	21%	+15%
Academic Mathematics	41%	67%	+26%

Table 7

ESL Gap Analysis – Grade 9 Extent to which Non-ESL Students Outperform ESL Students in Levels 3,4

		2000 - 2001	2001 - 2002	2002 - 2003
Grade 9	Applied Mathematics	+5%	+11%	+15%
	Academic Mathematics	+23%	+24%	+26%

Non-ESL students significantly outperform ESL students.

The grade 9 ESL student performance declined compared to last year's results, particularly in applied mathematics. The gap between ESL and non-ESL students has increased by 10% in applied mathematics, and 2% in academic mathematics since 2000-2001.

TABLE 8

EQAO 2002-2003 Results:

Peel Special Education and Non Special Education Student Comparisons - Grade 9

(Method 1 - Includes Exemption, No Data, Not Enough Information to Score, Not Enough Evidence for Level 1 Categories)

GRADE 9

Levels 3, 4

	Receiving Special Education	Not Receiving Special Education	Comparison
Applied Mathematics	19%	20%	+1%
Academic Mathematics	50%	66%	+16%

TABLE 9

Special Education Gap Analysis – Grade 9

Extent to which Non-Special Education Students Outperform Special Education Students in Levels 3,4

		2000 - 2001	2001 - 2002	2002 - 2003
Grade 9	Applied Mathematics	+6%	+8%	+2%
	Academic Mathematics	+15%	+19%	+16%

Non-Special Education students in academic mathematics significantly outperform Special Education students in academic mathematics.

The grade 9 Non-Special Education student performance declined compared to last year's results, particularly in applied mathematics. The gap between Special Education students and non-Special Education students decreased by 5% in grade 9 applied mathematics and by 1% in grade 9 academic mathematics, since 2000-2001.

Summary of Results, 2002-2003

1. Peel and Provincial Results

- Peel grade 9 students scored slightly below the provincial average in applied mathematics (-1%) and academic mathematics (-1%)

2. Yearly Comparisons (Peel)

- Grade 9 students scored 4% lower in applied mathematics when compared to last year.
- Grade 9 students scored 1% lower in academic mathematics when compared to last year.

3. Three Year Comparisons

- Grade 9 students scored 7% higher in applied mathematics when compared to 2000-2001.
- Grade 9 students scored 14% higher in academic mathematics when compared to 2000-2001.

4. Gender (Peel)

- There are no gender differences in grade 9 girls and boys' scores in mathematics.

5(a). ESL (Peel)

- Grade 9 non ESL students scored 15% higher than ESL students in applied mathematics, and 26% higher in academic mathematics.

(b). ESL Gap Analysis

- The grade 9 ESL student performance declined over last year.
- The gap between ESL and non-ESL students was increased by 10% in applied mathematics and 3% in academic mathematics, since 2000-2001.

6(a). Special Education Support (Peel)

- Grade 9 students who were not receiving Special Education support scored significantly higher than students who were receiving Special Education support in academic mathematics (16%). There were no differences between students receiving special education support and students who were not receiving special education support in the applied mathematics program.

(b). Special Education Gap Analysis

- The grade 9 Special Education performance decreased slightly over last year, particularly in applied mathematics.
- The gap between Special Education and non-Special Education students decreased by 6% in grade 9 applied mathematics and by 1% in grade 9 academic mathematics, since 2000-2001.

EQAO Key Recommendations

EQAO makes the following recommendations:

1. Each school study the assessment data and develop an initiative for its school improvement plan geared toward improving student performance, particularly at the applied level.
2. Principals and teachers continue to ensure that the instruction in mathematics classes, particularly in the applied program, is aligned with the philosophy, methodology and content of the curriculum.
3. School councils continue to monitor student achievement and take an active role in school improvement.
4. School board improvement teams review historical student achievement and contextual data and identify areas for the continuous improvement of achievement in relation to the Ontario Curriculum standards for mathematics.
5. That the Ministry of Education, faculties of Education, and Ontario College of Teachers (through Professional Learning Program providers), school boards, and educational associations continue to provide teachers with opportunities for professional development in assessment literacy and, in particular, in using assessment data along with best practices to develop strategies for improvement.