



Grade 9 EQAO Assessment of Mathematics 2009-2010

Overview of Results



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**Grade 9 EQAO Assessment of Mathematics
Peel District School Board (PDSB) – 2009-2010**

Summary of Results

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. This includes students who were exempted, for whom there were no data, and students who did not have enough evidence for Level 1.

Level 4 – Students have demonstrated the required knowledge and skills

Level 3 – Students have demonstrated most of the required knowledge and skills

Level 2 – Students have demonstrated some of the required knowledge and skills

Level 1 – Students have demonstrated some of the required knowledge and skills in limited ways

Not Enough Evidence for Level 1 (NE1) – Students did not demonstrate enough evidence of knowledge and understanding to be assigned a Level 1

No Data – Students did not complete any part of the assessment due to absence or for medical or for other reasons

Exempt – Students who were formally exempted from participation in one or more components of the assessment

Academic Course

- 84% of students in Grade 9 achieved Levels 3, 4 in Academic Math. This is 2% higher than the provincial average of 82%.
- 14% more students in the PDSB achieved Levels 3, 4 this year (84%) compared to five years ago (70%).

Applied Course

- 39% of students in Grade 9 achieved Levels 3, 4 in Applied Math. This is 1% lower than the provincial average of 40%.
- 6% more students in the PDSB achieved Levels 3, 4 this year (39%) compared to five years ago (33%).

A. Introduction

This report contains an overview of the 2009-2010 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 website, which is located at www.eqao.com.

What is EQAO?

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

EQAO conducts a range of province-wide assessments. This Grade 9 assessment of mathematics 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. Students and their parent/guardians receive an *Individual Student Report*, and schools and school boards produce local reports for parents/guardians and their communities.

What were the assessments?

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 is based on the four curriculum strands of mathematics: Number Sense and Algebra, Linear Relations, Analytic Geometry (academic program only), and Measurement and Geometry. Students enrolled in the applied mathematics program complete a different assessment than students enrolled in the academic mathematics program. Students enrolled in first semester applied and academic mathematics programs wrote the assessment in January 2010, and students enrolled in second semester and full year applied or academic mathematics programs wrote the assessment in June 2010.

Who participated in the assessment?

In total, 10 010 Grade 9 PDSB students (7 282 in academic mathematics, 2 728 in applied mathematics) participated in both the applied and academic assessments during regular classes. Beginning in 2006-2007, exemptions have not been permitted. One percent of Grade 9 students did not complete any part of the academic mathematics assessment (no data) and 4% of Grade 9 students did not complete any part of the applied mathematics assessment (no data).

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 mathematics. EQAO has aligned its four levels of achievement to those of the *Ontario Provincial Report Cards, Grades 9-12*.

Marking was done in July 2010 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.

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 improvement plan.
- ✓ EQAO encourages schools and school boards to include strategies in their school's improvement plan that will help both females and males improve their achievement.
- ✓ Parents/guardians, 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/guardians and their communities.
- ✓ The achievement data must be interpreted in relation to contextual data that schools and school boards have gathered.
- ✓ Teachers and principals should use samples of student work, anchor papers provided by EQAO, and Ministry exemplar documents, to help students and parents/guardians understand what work at Levels 3 and 4 looks like.
- ✓ School boards should provide opportunities for teachers and principals to share assessment expertise and successful assessment practices.

*English language learners were call English as a second language (ESL)/English literacy development (ELD) learners.

B. Contextual Information

Demographic data about students in the PDSB and the province provide valuable contextual information to help with the interpretation of the Grade 9 results.

Table 1: Contextual Information	PDSB		Province	
	All Academic Math Students (N = 7 336)	All Applied Math Students (N = 2 851)	All Academic Math Students (N = 101 268)	All Applied Math Students (N = 47 566)
Gender				
Female	51%	42%	51%	45%
Male	49%	58%	49%	55%
Student Status				
English language learners	4%	8%	4%	6%
Students with special education needs (excluding gifted)	3%	24%	5%	32%
Semester/Full Year				
First-semester course	47%	46%	44%	45%
Second-semester course	47%	48%	43%	46%
Full-year course	6%	6%	13%	9%
Language* Number of Respondents	7 015	2 594	97 137	43 201
Speak only or mostly English	57%	72%	75%	81%
Speak only or mostly a language other than English at home	12%	9%	9%	7%
Speak another language as often as English at home	29%	18%	15%	12%
School Background*				
Attended three or more elementary schools from kindergarten to Grade 8	54%	53%	34%	39%

*Based on Student Questionnaire

C. Overall Achievement for the PDSB

Academic Students

- 84% of PDSB students in the Grade 9 academic mathematics assessment achieved Levels 3, 4.
- 82% of students in the province in the Grade 9 academic mathematics assessment achieved Levels 3, 4.
- PDSB students scored 2% higher than the province.

Applied Students

- 39% of PDSB students in the Grade 9 applied mathematics assessment achieved Levels 3, 4.
- 40% of students in the province in the Grade 9 applied mathematics assessment achieved Levels 3, 4.
- PDSB students scored 1% lower than the province

Figure 1: Academic Mathematics Levels 3, 4

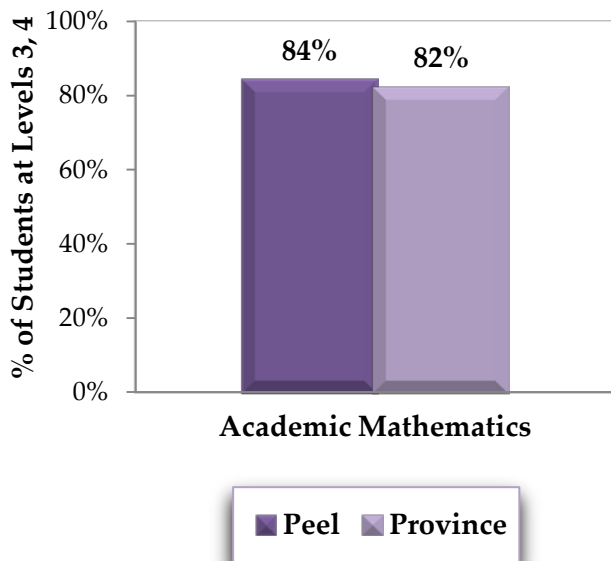
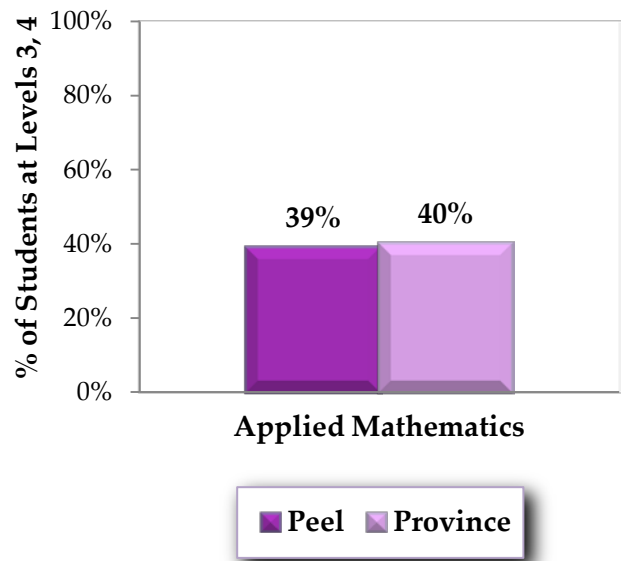
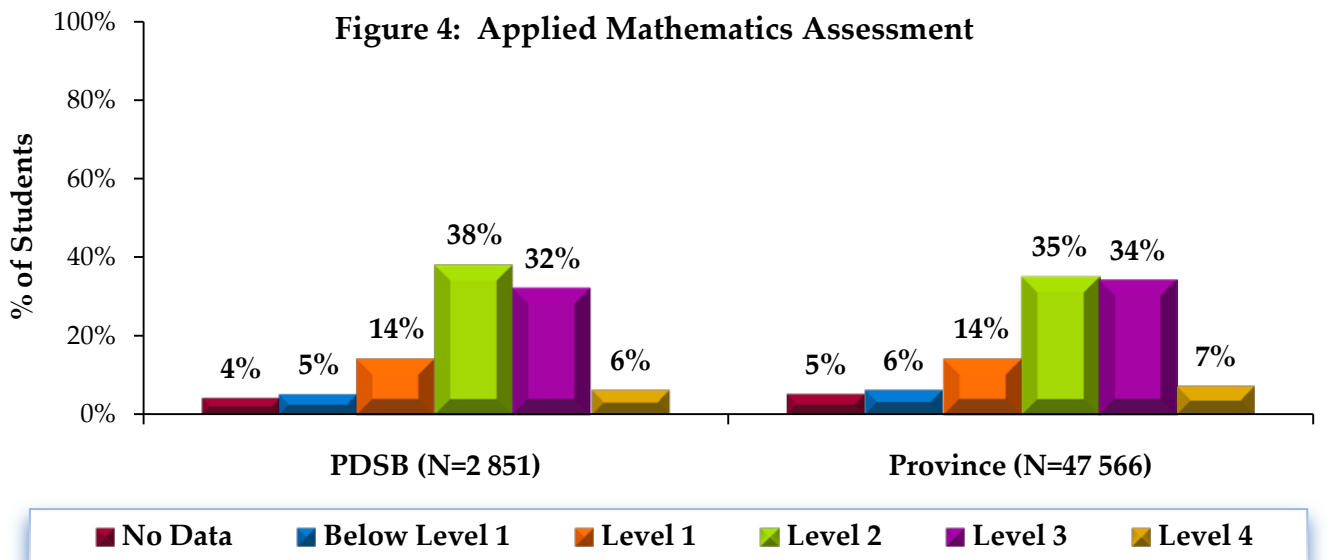
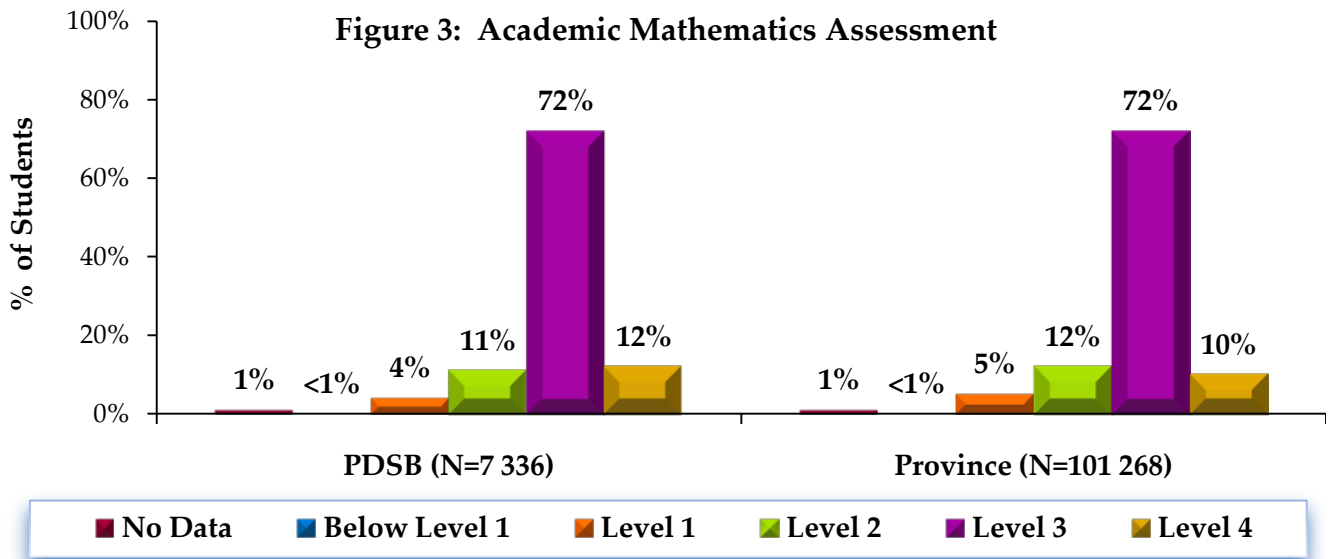


Figure 2: Applied Mathematics Levels 3, 4



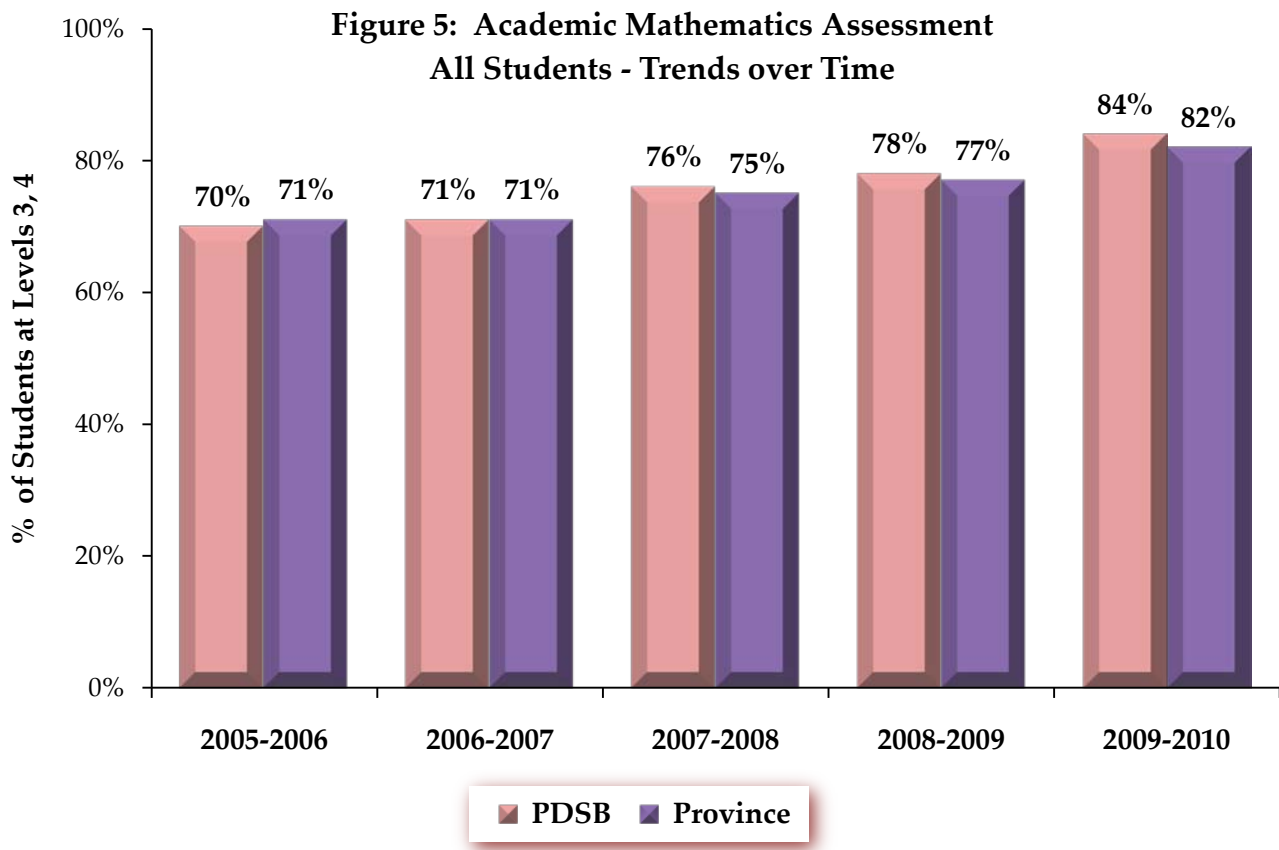
Academic and Applied Mathematics Assessments All Students



D. All Students Levels 3, 4 Results – Trends over Time

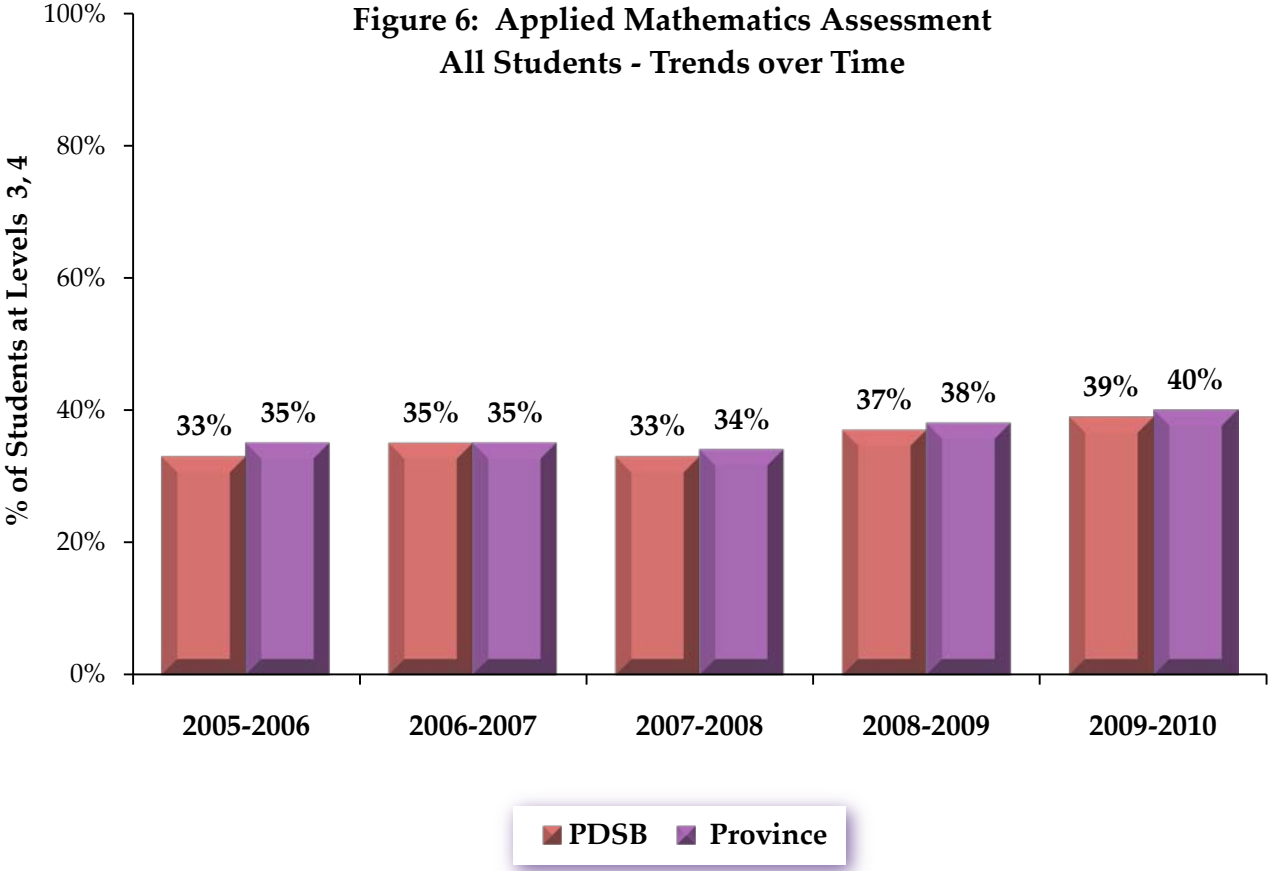
Academic Mathematics Assessment

- 84% of all students in the PDSB in the academic mathematics assessment achieved Levels 3, 4. This is 6% higher when compared to 2008-2009 (78%).
- 82% of all students in the province in the academic mathematics assessment achieved Levels 3, 4. This is 5% higher when compared to 2008-2009 (77%).
- 14% more students in the PDSB in the academic mathematics assessment achieved Levels 3, 4 in 2009-2010 (84%) compared to 2005-2006 (70%).
- 11% more students in the province in academic mathematics assessment achieved Levels 3, 4 in 2009-2010 (82%) compared to 2005-2006 (71%).



Applied Mathematics Assessment

- 39% of all students in the PDSB in the applied mathematics assessment achieved Levels 3, 4. This is 2% higher when compared to 2008-2009 (37%).
- 40% of all students in the province in the applied mathematics assessment achieved Levels 3, 4 in 2009-2010. This is 2% higher when compared to 2008-2009 (38%).
- 6% more students in the PDSB in the applied mathematics assessment achieved Levels 3, 4 in 2009-2010 (39%) compared to 2005-2006 (33%).
- 5% more students in the province in the applied mathematics assessment achieved Levels 3, 4 in 2009-2010 (40%) compared to 2005-2006 (35%).



E. Academic and Applied Mathematics Levels 3, 4 Results by Gender

Academic Mathematics by Gender

- ◆ 83% of PDSB grade 9 female students in the academic mathematics assessment achieved Levels 3, 4 compared to 84% of males. Females scored 1% lower than males.
- ◆ 81% of grade 9 female students in the province in academic mathematics assessment achieved Levels 3, 4 compared to 83% of males. Females scored 2% lower than males.

Applied Mathematics by Gender

- 36% of PDSB grade 9 female students in the applied mathematics assessment achieved Levels 3, 4 compared to 41% of males. Females scored 5% lower than males.
- 36% of grade 9 female students in the province in applied mathematics assessment achieved Levels 3, 4 compared to 44% of males. Females scored 8% lower than males.

Figure 7: Academic Mathematics by Gender

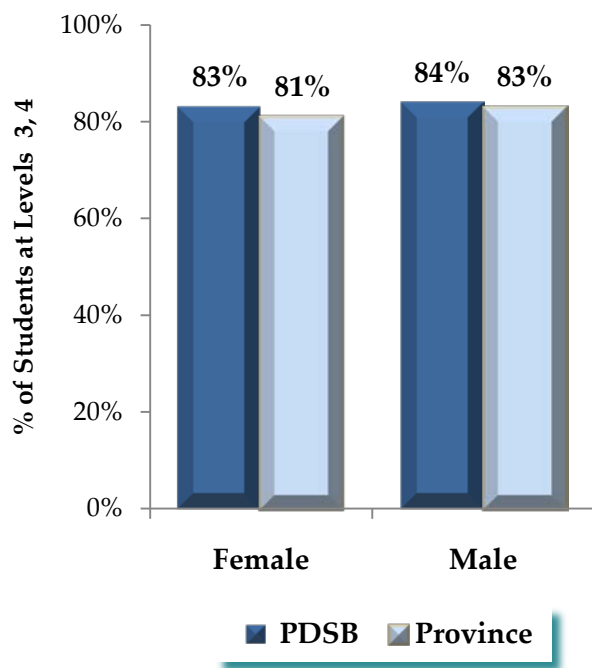
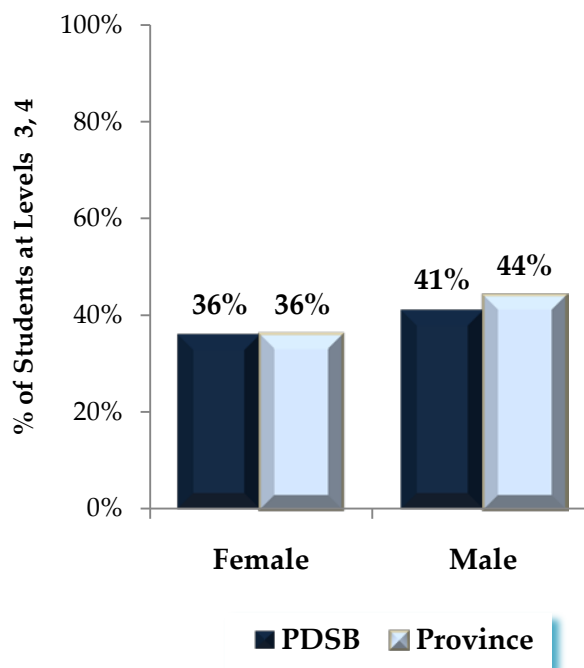


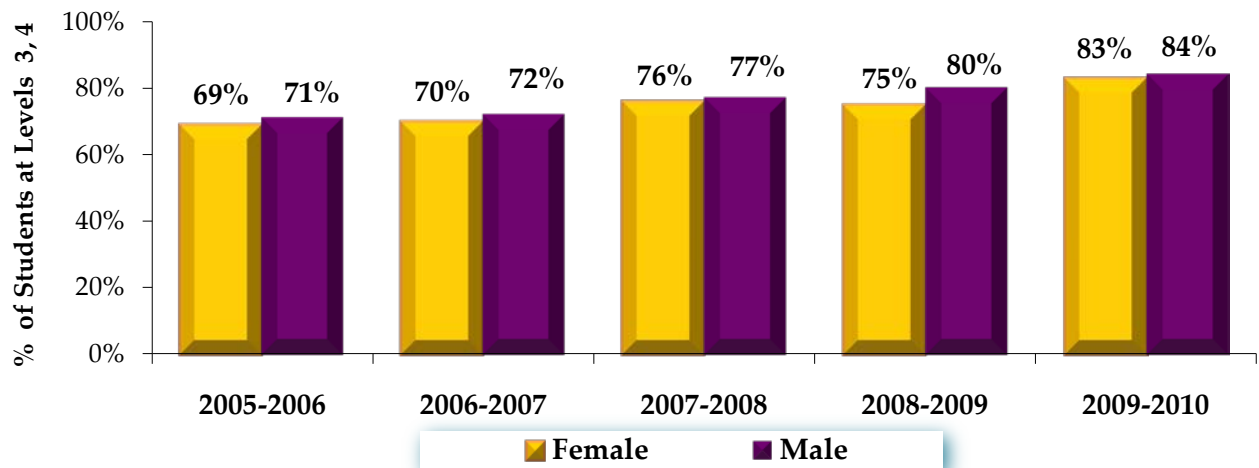
Figure 8: Applied Mathematics by Gender



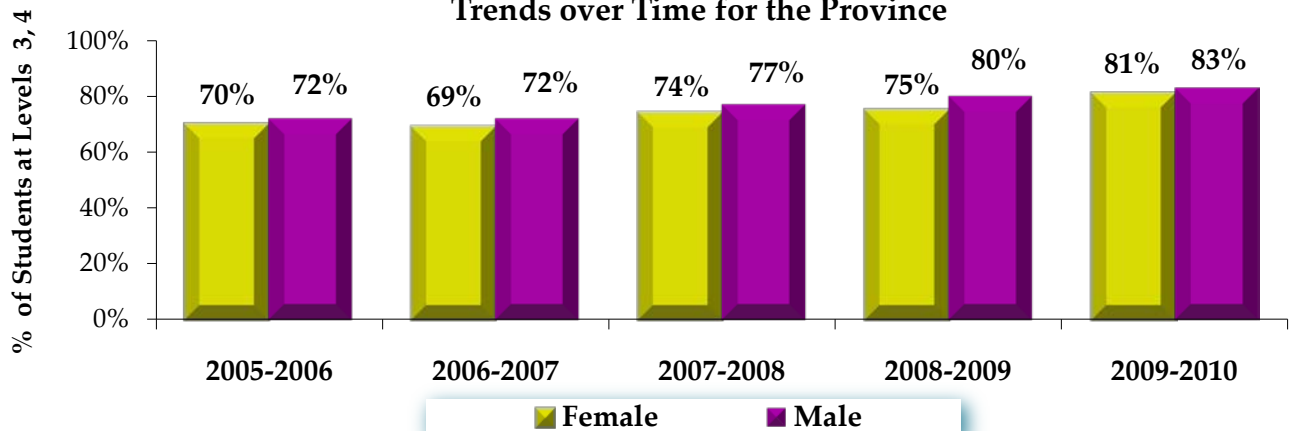
Academic Mathematics Results by Gender – Trends over Time

- When compared to last year's results (2008-2009), the percentage of PDSB female students in the academic assessment who achieved Levels 3, 4 increased by 8%.
- When compared to last year's results (2008-2009), the percentage of PDSB male students in the academic assessment who achieved Levels 3, 4 increased by 4%.
- When compared to results from 2005-2006, PDSB female students in the academic assessment scored 14% higher and female students in the province scored 11% higher in 2009-2010.
- When compared to results from 2005-2006, PDSB male students in the academic assessment scored 13% higher and male students in the province scored 11% higher in 2009-2010.

**Figure 9: Academic Mathematics by Gender
Trends over Time for the PDSB**

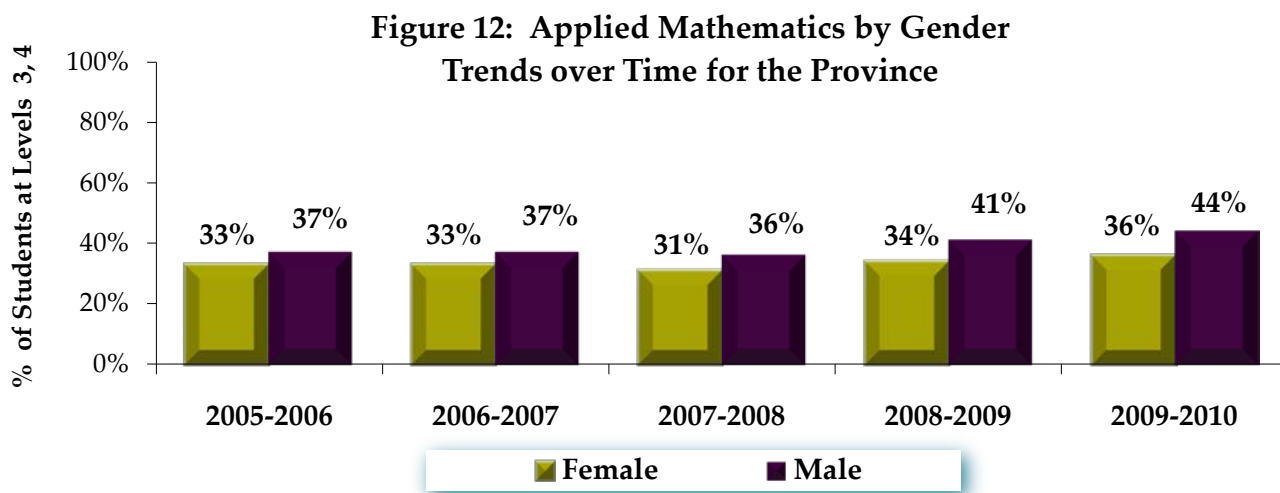
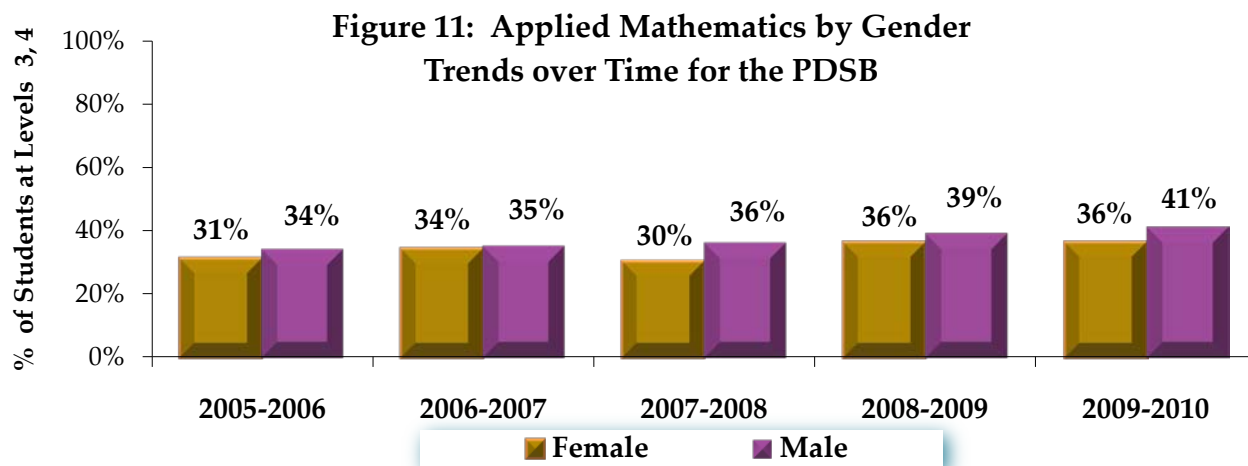


**Figure 10: Academic Mathematics by Gender
Trends over Time for the Province**



Applied Mathematics Results by Gender – Trends over Time

- ■ When compared to last year's results (2008-2009), the percentage of PDSB female students in the applied assessment who achieved Levels 3, 4 remained the same.
- ■ When compared to last year's results (2008-2009), the percentage of PDSB male students in the applied assessment who achieved Levels 3, 4 increased by 2%.
- ■ When compared to results from 2005-2006, PDSB female students in the applied assessment scored 5% higher and female students in the province scored 3% higher in 2009-2010.
- ■ When compared to results from 2005-2006, PDSB male students in the applied assessment scored 7% higher and male students in the province scored 7% higher in 2009-2010.



Gender Gap Analysis – Trends over Time

- The gap between males and females in the PDSB for the academic assessment has decreased since 2005-2006. The gap between males and females in the province for the academic assessment has remained relatively constant since 2005-2006.
- The gap between males and females in the PDSB for the applied assessment has increased since 2005-2006. The gap between males and females in the province for the applied assessment has increased since 2005-2006.

Table 2: Extent to which Grade 9 Males Outperformed Females in the Academic Mathematics Assessment (Levels 3, 4)

		2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
PDSB	Academic Mathematics	+2%	+2%	+1%	+5%	+1%
Province	Academic Mathematics	+2%	+3%	+3%	+5%	+2%

Table 3: Extent to which Grade 9 Males Outperformed Females in the Applied Mathematics Assessment (Levels 3, 4)

		2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
PDSB	Applied Mathematics	+3%	+1%	+6%	+3%	+5%
Province	Applied Mathematics	+4%	+4%	+5%	+7%	+8%

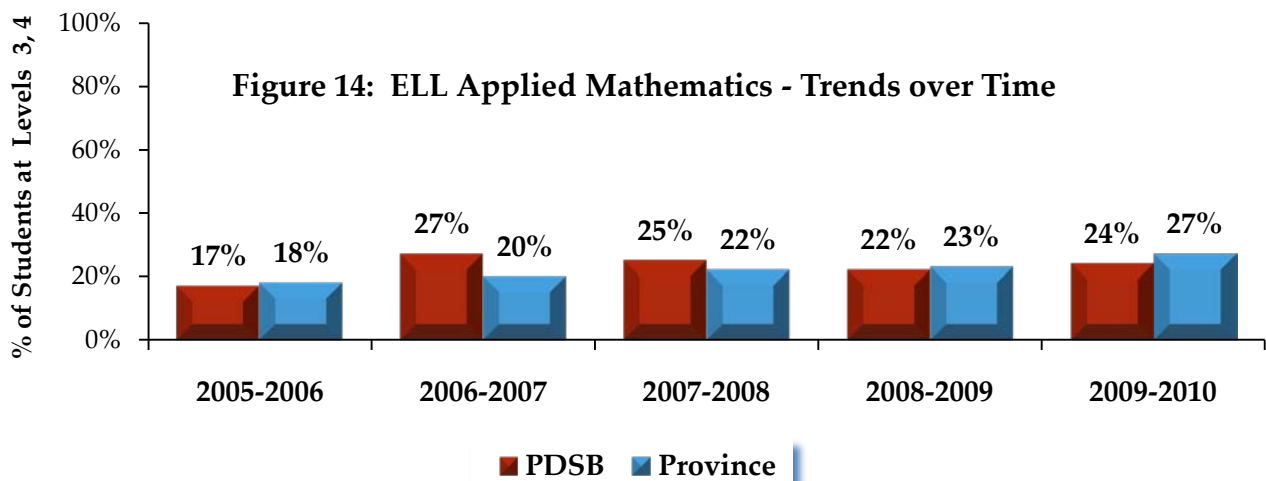
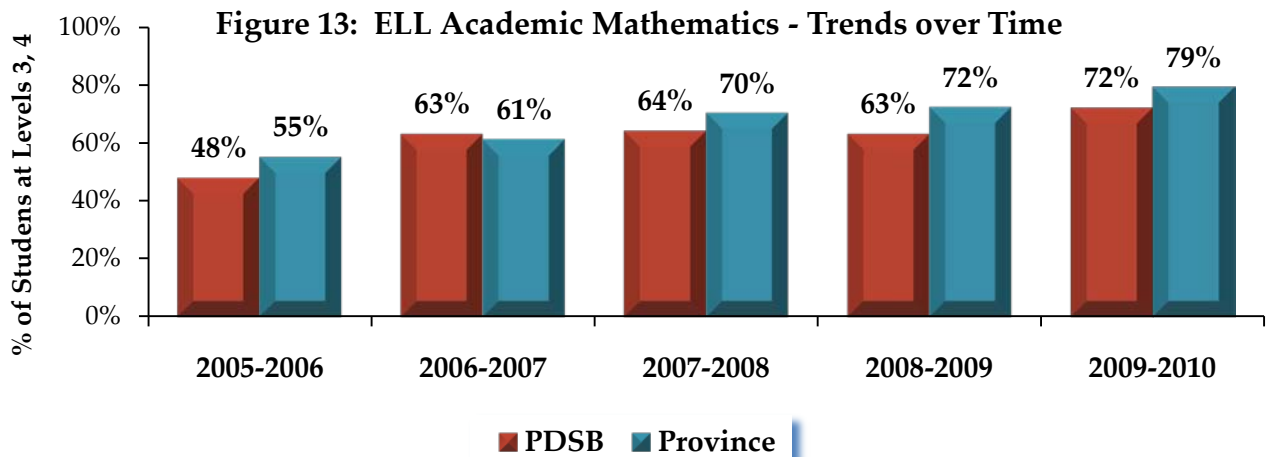
F. English Language Learners (ELL) Levels 3, 4 Results Trends over Time

Academic Mathematics

- ◆ When compared to last year's results (2008-2009), PDSB English language learners in the academic math assessment scored 9% higher and English language learners in the province scored 7% higher.
- ◆ When compared to 2005-2006 results, PDSB English language learners in the academic math assessment scored 24% higher and English language learners in the province scored 24% higher.

Applied Mathematics

- When compared to last year's results (2008-2009), PDSB English language learners in the applied math assessment scored 2% higher and English language learners in the province scored 4% higher.
- When compared to 2005-2006 results, PDSB English language learners in the applied math assessment scored 7% higher and English language learners in the province scored 9% higher.



G. Students with Special Education Needs (excluding gifted) Levels 3, 4 Results – Trends over Time

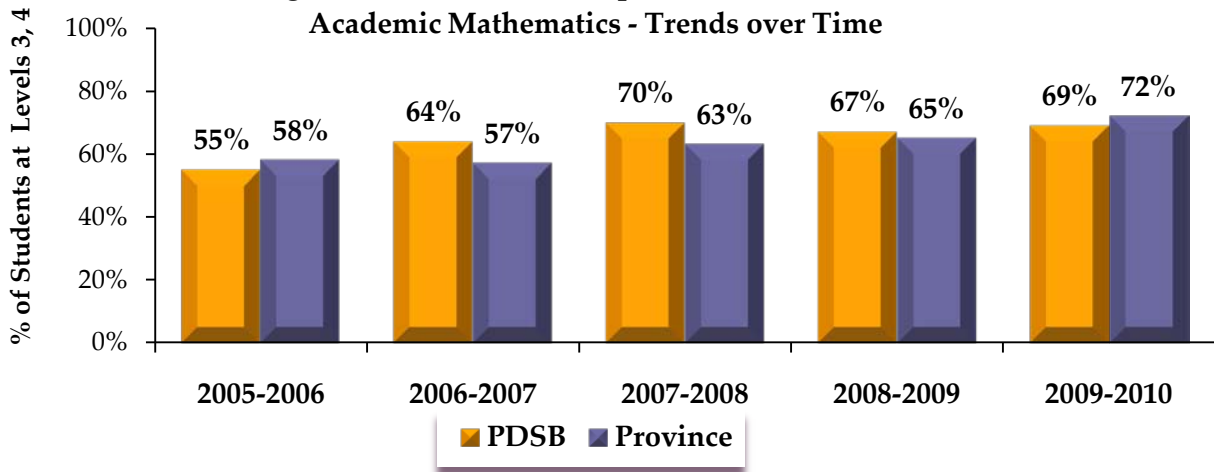
Academic Mathematics

- When compared to last year's results (2008-2009), PDSB students with special education needs in the academic math assessment scored 2% higher and students with special education needs in the province scored 7% higher.
- When compared to 2005-2006 results, PDSB students with special education needs in the academic math assessment scored 14% higher and students with special education needs in the province scored 14% higher.

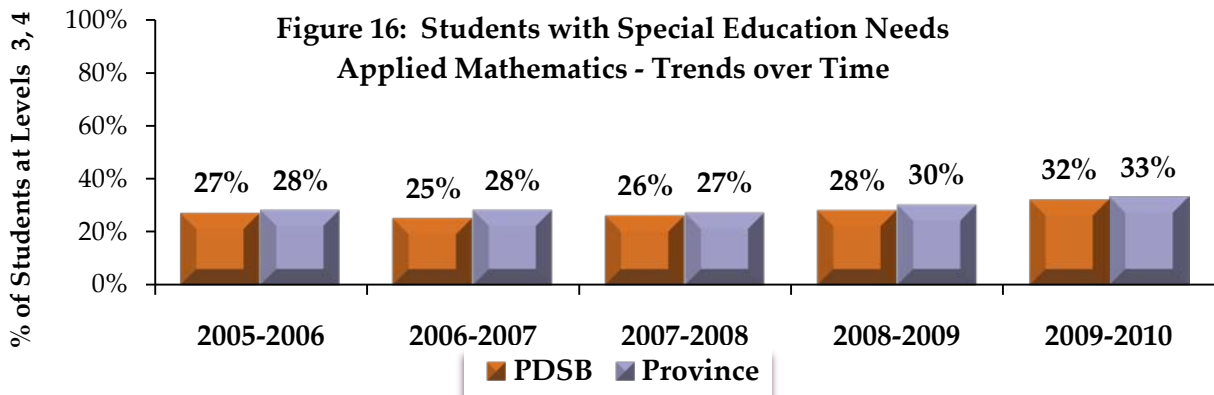
Applied Mathematics

- When compared to last year's results (2008-2009), PDSB students with special education needs in the applied math assessment scored 4% higher and students with special education needs in the province scored 3% higher.
- When compared to 2005-2006 results, PDSB students with special education needs in the applied math assessment scored 5% higher and students with special education needs in the province scored 5% higher.

**Figure 15: Students with Special Education Needs
Academic Mathematics - Trends over Time**



**Figure 16: Students with Special Education Needs
Applied Mathematics - Trends over Time**



H. Grade 9 Student Questionnaire Results

Table 4: Grade 9 Student Questionnaire Results

	Academic Mathematics Students		Applied Mathematics Students	
	Females (N=3 573)	Males (N=3 442)	Females (N=1 127)	Males (N=1 467)
Percentage of students in the PDSB who indicated that they “strongly agree” or “agree” with each of the following statements:				
I like mathematics.	52%	64%	30%	44%
I am good at mathematics.	45%	60%	27%	44%
I understand most of the mathematics I am taught.	72%	76%	65%	68%
The mathematics I learn now is very useful for everyday life.	37%	46%	44%	47%
I need to keep taking mathematics for the kind of job I want after I leave school.	55%	64%	43%	48%
Mathematics is boring.	29%	28%	42%	39%
Mathematics is an easy subject.	22%	34%	14%	24%
Percentage of students indicating that the following are “very easy” or “easy”:				
number sense	69%	75%	47%	56%
algebra	65%	64%	48%	47%
linear relations	50%	58%	67%	66%
analytic geometry	48%	53%	N/A	N/A
measurement	73%	77%	66%	64%
geometry	63%	67%	39%	41%
Percentage of students indicating that they have the following <i>at home</i> to use for mathematics school work:				
a computer	74%	70%	57%	53%
a scientific calculator	91%	89%	80%	75%
a graphing calculator	10%	13%	9%	10%
Percentage of students indicating that they usually spend the following amounts of time on mathematics homework (in or out of school) on any given day:				
30 minutes or less	25%	37%	40%	45%
more than 30 minutes	71%	58%	45%	38%
mathematics homework not usually assigned	2%	3%	15%	15%
Percentage of students indicating that they complete all of their mathematics homework:				
never or seldom	8%	15%	12%	18%
sometimes	20%	26%	32%	32%
often or always	70%	58%	55%	48%

**This report is available on the Peel District School Board’s website at:
<http://www.peelschools.org>**