

2007 Mathematics Assessment for Learning Project

Creighton SD Sub-Population Results Report

A Report of Selected Opportunity-to-Learn and Mathematics Performance Results

- Male Students
- Female Students
- First Nations & Metis Students
- French Immersion Students
- Community School Students

Preface

What is the purpose of the Assessment for Learning Program?

The Assessment for Learning Program is a provincial assessment designed to provide system data to be used (along with experiences and data from other sources) to plan for improvement in core student skill areas.

What core areas are assessed?

Students are tested in reading (Grade 4, 7, and 10) and in mathematics (Grade 5, 8, and Math 20) in Spring of odd years (2007, 2009, 2011, ...). Grade 5, 8, and 11 students were tested in Mathematics in 2008 (and will be in Spring of even years). Beginning in 2010, Grade 7 and 10 students will be tested in science during Spring of even years (2010, 2012, ...).

What is the quality of the assessment?

Quality is typically described using the terms 'validity' and 'reliability'. Validity refers to the nature of the assessment tasks and the derived measures, and how well these reflect what is intended to be tested. The Assessment for Learning Program is curriculum-based. Validity is improved by having reference committees review conceptual frameworks, tables of specification, and assessment items to ensure they align appropriately with and represent well intended curriculum outcomes. Validity is improved by involving several Saskatchewan teachers in the design of assessment items. Validity is improved by using different rounds of field-testing in a variety of classroom settings, and modifying items to manage bias and improve clarity based on feedback provided by students and teachers.

'Reliability' refers to confidence that the results reflect accurately the population that is being tested. Often questions of reliability are considered when sampling methods are used to represent the population. The Assessment for Learning Program is designed to test all students at the tested grades, so reliability issues related to sampling are minimized. Reliability of results can be affected by the efforts of students to do their best and show what they know and can do. Reliability of profiles is also affected by the student population size contributing to the profile, particularly for small schools. In the case of smaller schools, the assessment results provide a reliable and valuable snapshot of opportunity and achievement, but considerable variation in outcomes could be expected for future small groups from the school.

What is measured and reported in the Assessment for Learning Program?

The Assessment for Learning Program reports both indicators of student **opportunity-to-learn** and indicators of **student achievement**. The next page describes which measures of the 2007 Mathematics Assessment are reported for each of these assessment areas.

The Assessment for Learning Program provides school, division, and provincial profiles. The Program also provides selected sub-population profiles (such as those included in this report) at the division and provincial levels.

The Assessment for Learning Program does not provide individual student reports. Planning specific improvement for individuals is best informed by effective and ongoing classroom-based assessment, and through dialogue and interactions involving the teacher, student, and parent(s). There is an option for teachers to score student work on this assessment, to include this work as part of their assessment plan, and to provide feedback to students, prior to returning the work for central scoring and processing.

2007 Mathematics Assessment Components

Student Opportunity-to-Learn Measures

Seven opportunity-to-learn (OTL) measures were developed for this assessment. Each OTL measure was determined using a 5-level scale (Level 1 low to Level 5 high). The **four OTL measures displayed** throughout this report were derived from student questionnaire responses.

- Student **propensity to learn** considers student preparation for and reflection related to mathematics; and motivation, attitude, and confidence related to mathematics.
- Student **persistence when experiencing difficulty in math** considers the tendency of the student to work hard to provide his best work, and to use a variety of resources to assist and to learn when having difficulty with math problems.
- **Home support for learning in general** considers the resources and supports provided or arranged by family, and the nature and frequency of interactions focused around learning.
- **Home support for learning mathematics** considers the resources and supports provided or arranged by family, and the nature and frequency of interactions focused around learning mathematics.

The three OTL measures derived from teacher questionnaire responses (availability and use of resources; instruction and learning; and, approaches to problem-solving) are reported in *Detailed Division Reports* and *Detailed School Reports*, and included in the summary reports. They are not included in this report because responses from teachers span across many of the sub-populations contained in this report. For example, most teachers would teach both male and female students, and their responses informing the measures would not distinguish differences in opportunity for these two sub-populations.

Student Mathematics Performance Measures

Students completed a 40-item multiple-choice test, two 2-part estimation questions, four calculator questions, four computation questions (eight in Grade 5), and two math challenges (one in Math 20). From this work, the following five broad student performance outcome areas were measured:

- **Mathematics Content Skills:** This measure was derived from student performance on the 40-item multiple-choice test. Also, sub-measures were provided for the five math strands that comprised the overall content skill measure. These five content skill sub-measures are reported in Figures 5.2, 5.3, 8.2, 8.3, 11.2, and 11.3, but are not included in the subsequent graphs of this report. The following chart lists the strands for each of the tested grades.

Math Content Skills include the following five sub-measure (math strand) scores (for the specified grade):			
	Grade 5	Grade 8	Math 20
Strand 1	Whole Numbers	Data Management	Irrational Numbers
Strand 2	Fractions	Numbers and Operations	Consumer Math and Probability
Strand 3	Geometry	Ratio and Proportion	Polynomials and Rational Functions
Strand 4	Measurement	Geometry and Measurement	Quadratic Functions and Equations
Strand 5	Data Management	Algebra	Angles, Polygons and Circles

- **Integrated Applications Skills:** This measure was derived from student performance on the math challenge test. Students completed two multi-part math challenges (one in Math 20) that required them to apply several math concepts from a variety of strand areas in the curriculum to address a problem situation. This measure is reported on a 5-level scale.

- **Estimation Skills:** This measure included two problem contexts in which the student had to make an estimate within an acceptable range, and then explain the strategies used to arrive at that estimate.

- **Calculator Skills:** This measure was derived from student performance on four questions that required students to use a calculator to solve the questions.

- **Computation Skills:** Students performed addition, subtraction, multiplication and division questions (without the assistance of a calculator). These questions would be appropriate for the tested grade (whole numbers and decimal number in Grade 5; fractions and integers in Grade 8; and, radical numbers and algebraic expressions in Math 20).

Standards Used in the 2007 Mathematics Assessment

Student opportunity-to-learn results and student mathematics achievement results are displayed in this report as the percentages achieving specified standards. Standards were established by teachers and academics through a process that involved careful consideration of the assessment tasks, the learning context, discussion about various experiences and perspectives of other panelists, all leading to the average of all panelists' opportunity or performance judgments indicating what students in Saskatchewan should be able to do related to each of the assessment measures. Separate and independent panels set standards for Grade 5 and 8, and Math 20. Two types of standards were set for each opportunity and mathematics achievement measure.

For each opportunity-to-learn measure, panelists set a standard of excellent opportunity and a standard of sufficient (or higher) opportunity (on a 5-level scale). Similarly, for each mathematics achievement measure, panelists set a standard of proficient performance and a standard of adequate (or higher) performance, expressed as a percentage correct for the content, estimation, calculator, and computation skill measures, and on a 5-level scale for the integrated applications measure. The standards are shown in Figure 1 below.

Figure 1: Opportunity-to-Learn Standards and Mathematics Performance Standards

Opportunity Measure	Standards: Required Level for ... Scale	Grade 5		Grade 8		Math 20	
		Excellence	Sufficiency	Excellence	Sufficiency	Excellence	Sufficiency
Propensity to Learn	5-level	4.13	2.84	4.21	3.06	4.08	2.91
Persistence When Having Difficulty in Math	5-level	4.20	2.92	4.05	2.87	4.13	2.93
Home Support for Learning in General	5-level	4.03	2.77	4.15	3.02	4.00	3.02
Home Support for Learning Math	5-level	4.03	2.81	4.00	2.95	3.75	2.79
Performance Measure	Standards: Required Level for ... Scale	Grade 5		Grade 8		Math 20	
		Proficiency	Adequacy	Proficiency	Adequacy	Proficiency	Adequacy
Math Content Skills	percentage	72%	47%	76%	53%	72%	47%
Strand 1	percentage	75%	50%	67%	46%	63%	42%
Strand 2	percentage	74%	48%	79%	53%	64%	44%
Strand 3	percentage	68%	44%	82%	59%	72%	45%
Strand 4	percentage	69%	45%	73%	51%	75%	51%
Strand 5	percentage	70%	46%	82%	59%	75%	50%
Integrated Application Skills	5-level	4.24	3.60	4.23	3.67	4.01	2.98
Estimation Skills	percentage	69%	48%	57%	34%	51%	29%
Calculator Skills	percentage	83%	67%	73%	46%	81%	67%
Computation Skills	percentage	77%	57%	82%	60%	59%	32%

Comparisons and Meaningful Distinctions

In this report, 2008 Mathematics Assessment results are displayed showing percentages of students achieving the standards and are compared for each sub-population group with the total student population in the division, the total student population in the province, and the corresponding sub-population in the province. In most instances, any differences between sub-population results in the division compared to those of the province, or compared to the overall student population in the division and province will be statistically significantly different. This is because virtually the entire population participates in the assessment (not just a sample). However, just because there is a statistically significant difference, it does not necessarily mean the difference is very large or meaningful.

When making comparisons between results, the terms **meaningfully higher**, **meaningfully lower**, and **similar to** are used. Differences were arbitrarily set as meaningful if there was more than an 8% difference and at least a 2 percentage point difference between the school and provincial profiles. For example, if the school achieved 55% of students with at least adequate performance compared to 50% for the province, then the school's results would be meaningfully higher than the province, because 55% is 10% higher than 50% (i.e., $55\%/50\%=1.1$ or 110%) and 55% is 5 percentage points more than 50% (i.e., $55\%-50\%=5\%$).

Student Participation Numbers and Rates

All students in Grade 5 and 8, and Math 20 were eligible to participate in the 2007 Mathematics Assessment. In some instances, students may be developing their math skills in courses where significant outcome portions of the mathematics curriculum have been modified to accommodate their needs. If this were the case, teachers with approval from their administrators could designate that these particular students not be included in contributing to the school or division profile (although such students could participate in portions of the assessment appropriate to their program of study, but their work would not be returned for central processing). The top two rows of information in each of Figures 5.1, 8.1, and 11.1 show the total number of students and the number of students expected to participate.

Students had opportunity to provide responses to declare their gender and whether they were First Nations or Metis. The linking of student assessment numbers to school identifiers enables analysis and reporting of assessment results for students in French Immersion programs and for students in community schools. Participation numbers are provided in Figures 5.1, 8.1, and 11.1 for each of the sub-populations included in this report. Participation rates for these sub-populations are unavailable because information about gender or First Nations and Metis declaration are not known for those who did not participate in the assessment.

Figure 5.1: Participation Numbers and Rates, Grade 5

	Division	Province		
Total Number of Grade 5 Students	31	12,216		
Grade 5 Students Expected to Contribute to the Profile	29	11,787		
Percentage Expected to Contribute to the Profile	93.5%	96.5%		
	Student Questionnaires		Math Tests	
	Division	Province	Division	Province
Number of Participating Students	28	11,279	26	11,295
... as a percentage of those expected to participate	96.6%	95.7%	-	-
... as a percentage of all Grade 5 Students	90.3%	92.3%	-	-
Number of Participating Male Students	15	5,513	14	5,432
Number of Participating Female Students	13	5,339	12	5,258
Number of Participating First Nations & Metis Students	nr	nr	nr	nr
Number of Participating French Immersion Students	nr	682	nr	674
Number of Participating Community School Students	28	1,881	26	1,836

Figure 8.1: Participation Numbers and Rates, Grade 8

	Division	Province		
Total Number of Grade 8 Students	34	12,933		
Grade 8 Students Expected to Contribute to the Profile	34	12,434		
Percentage Expected to Contribute to the Profile	100.0%	96.1%		
	Student Questionnaires		Math Tests	
	Division	Province	Division	Province
Number of Participating Students	32	11,612	29	11,715
... as a percentage of those expected to participate	94.1%	93.4%	-	-
... as a percentage of all Grade 8 Students	94.1%	89.8%	-	-
Number of Participating Male Students	12	5,538	12	5,464
Number of Participating Female Students	20	5,469	17	5,398
Number of Participating First Nations & Metis Students	13	2,074	13	2,021
Number of Participating French Immersion Students	nr	502	nr	487
Number of Participating Community School Students	32	1,821	29	1,774

Figure 11.1: Participation Numbers and Rates, Grade 11

	Division	Province		
Total Number of Math 20 Students	34	9,535		
Math 20 Students Expected to Contribute to the Profile	34	9,318		
Percentage Expected to Contribute to the Profile	100.0%	97.7%		
	Student Questionnaires		Math Tests	
	Division	Province	Division	Province
Number of Participating Students	29	8,238	30	8,306
... as a percentage of those expected to participate	85.3%	88.4%	-	-
... as a percentage of all Math 20 Students	85.3%	86.4%	-	-
Number of Participating Male Students	11	3,847	11	3,785
Number of Participating Female Students	16	4,004	16	3,952
Number of Participating First Nations & Metis Students	8	820	8	800
Number of Participating French Immersion Students	nr	304	nr	303
Number of Participating Community School Students	29	1,436	29	1,416

Overview of Division Results

The percentages shown in Figures 5.2, 8.2, and 11.2 represent the proportion of students in the division (and sub-populations within the division) achieving the excellent standard for four opportunity-to-learn measures (propensity to learn; persistence when experiencing difficulty in math; home support for learning in general; and, home support for learning math) and achieving the proficient standard for five mathematics achievement measures (math content skills [including strand sub-measure outcomes]; integrated application skills; estimation skills; calculator skills; and, computation skills). Figures 5.3, 8.3, and 11.3 show percentages within the division achieving sufficient (or higher) standards for the opportunity-to-learn measures and the percentages within the division achieving adequate (or higher) for the mathematics achievement measures.

Cells shaded within these figures indicate that there is a meaningful distinction in the division subpopulation results compared to the overall provincial results and/or corresponding provincial subpopulation results. Shading in cells containing percentages show the presence of meaningful distinctions between the division subpopulation and the overall provincial results. Shading in cells showing the arrow symbols indicate whether there is a meaningful distinction between the division subpopulation and the corresponding provincial subpopulation (see the legend below the figures). Recall the definitions of meaningful distinctions offered in an earlier section of this report.

Figure 5.2: Percentages Achieving Standards of Excellence/Proficiency, Division Sub-Population Results, Grade 5

Percentage Achieving Excellent Opportunity Among ...	All Students		Male		Female		First Nations & Metis		French Immersion		Community Schools	
Opportunity-to-Learn Measures												
Propensity to Learn	26%	↔	31%	↑	20%	↓	nr	↔	nr	↔	26%	↑
Persistence When Experiencing Difficulty in Math	14%	↓	16%	↓	12%	↓	nr	↔	nr	↔	14%	↓
Home Support for Learning in General	35%	↔	33%	↓	38%	↓	nr	↔	nr	↔	35%	↔
Home Support for Learning Math	42%	↓	33%	↓	53%	↓	nr	↔	nr	↔	42%	↓
Percentage Achieving Proficient Achievement Among ...												
Math Performance Measures												
Math Content Skills	25%	↔	36%	↑	12%	↓	nr	↔	nr	↔	25%	↑
Whole Numbers	32%	↓	40%	↔	23%	↓	nr	↔	nr	↔	32%	↑
Fractions	14%	↓	18%	↓	10%	↓	nr	↔	nr	↔	14%	↑
Geometry	50%	↔	57%	↑	42%	↓	nr	↔	nr	↔	50%	↑
Measurement	49%	↓	51%	↓	46%	↓	nr	↔	nr	↔	49%	↑
Data Management	53%	↔	52%	↔	54%	↔	nr	↔	nr	↔	53%	↑
Integrated Applications	42%	↑	44%	↑	39%	↑	nr	↔	nr	↔	42%	↑
Estimation Skills	35%	↑	36%	↑	33%	↑	nr	↔	nr	↔	35%	↑
Calculator Skills	57%	↓	59%	↓	54%	↓	nr	↔	nr	↔	57%	↔
Computation Skills	51%	↑	54%	↑	47%	↑	nr	↔	nr	↔	51%	↑

Legend: Division **subpopulation** results are:

62% meaningfully higher than the provincial (all) results	45% meaningfully lower than the provincial (all) results	54% similar to the provincial (all) results
↑ meaningfully higher than the provincial subpop'n	↓ meaningfully lower than the provincial subpop'n	↔ similar to the provincial subpop'n

Figure 5.3: Percentages Achieving Standards of Sufficiency/Adequacy (or Higher), Division Sub-Population Results, Grade 5

Percentage Achieving Sufficient (or Higher) Opportunity Among ...		All Students		Male		Female		First Nations & Metis		French Immersion		Community Schools	
Opportunity-to-Learn Measures													
Propensity to Learn	68%	↓	63%	↓	73%	↔	nr	↗	nr	↗	68%	↔	
Persistence When Experiencing Difficulty in Math	76%	↔	74%	↔	78%	↔	nr	↗	nr	↗	76%	↑	
Home Support for Learning in General	87%	↔	87%	↔	88%	↔	nr	↗	nr	↗	87%	↑	
Home Support for Learning Math	88%	↔	84%	↔	94%	↔	nr	↗	nr	↗	88%	↔	
Percentage Achieving Adequate (or Higher) Achievement Among ...		All Students		Male		Female		First Nations & Metis		French Immersion		Community Schools	
Math Performance Measures													
Math Content Skills	62%	↓	57%	↓	67%	↔	nr	↗	nr	↗	62%	↑	
Whole Numbers	73%	↔	61%	↓	87%	↔	nr	↗	nr	↗	73%	↑	
Fractions	50%	↓	50%	↓	49%	↓	nr	↗	nr	↗	50%	↑	
Geometry	74%	↓	81%	↔	65%	↓	nr	↗	nr	↗	74%	↔	
Measurement	81%	↔	81%	↔	81%	↔	nr	↗	nr	↗	81%	↔	
Data Management	86%	↔	83%	↔	89%	↔	nr	↗	nr	↗	86%	↑	
Integrated Applications	65%	↑	63%	↔	68%	↔	nr	↗	nr	↗	65%	↑	
Estimation Skills	47%	↓	55%	↔	40%	↓	nr	↗	nr	↗	47%	↑	
Calculator Skills	76%	↔	76%	↔	76%	↔	nr	↗	nr	↗	76%	↔	
Computation Skills	84%	↑	75%	↑	91%	↑	nr	↗	nr	↗	84%	↑	

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Figure 8.2: Percentages Achieving Standards of Excellence/Proficiency, Division Sub-Population Results, Grade 8

Percentage Achieving Excellent Opportunity Among ...		All Students		Male		Female		First Nations & Metis		French Immersion		Community Schools	
Opportunity-to-Learn Measures													
Propensity to Learn	17%	↔	20%	↑	16%	↓	12%	↔	nr	↗	17%	↑	
Persistence When Experiencing Difficulty in Math	27%	↔	24%	↔	29%	↔	23%	↑	nr	↗	27%	↑	
Home Support for Learning in General	41%	↑	28%	↔	48%	↑	27%	↑	nr	↗	41%	↑	
Home Support for Learning Math	47%	↑	33%	↔	55%	↑	38%	↑	nr	↗	47%	↑	
Percentage Achieving Proficient Achievement Among ...		All Students		Male		Female		First Nations & Metis		French Immersion		Community Schools	
Math Performance Measures													
Math Content Skills	14%	↓	0%	↗	24%	↑	4%	↓	nr	↗	14%	↑	
Data Management	87%	↑	89%	↑	86%	↑	84%	↑	nr	↗	87%	↑	
Numbers and Operations	29%	↔	12%	↓	40%	↑	19%	↑	nr	↗	29%	↑	
Ratio and Proportion	40%	↔	48%	↑	34%	↓	32%	↑	nr	↗	40%	↑	
Geometry and Measurement	10%	↓	0%	↗	18%	↓	8%	↔	nr	↗	10%	↔	
Algebra	23%	↓	6%	↓	35%	↔	23%	↑	nr	↗	23%	↔	
Integrated Applications	50%	↑	56%	↑	46%	↑	45%	↑	nr	↗	50%	↑	
Estimation Skills	52%	↑	38%	↔	60%	↑	54%	↑	nr	↗	52%	↑	
Calculator Skills	22%	↓	4%	↓	32%	↑	4%	↓	nr	↗	22%	↑	
Computation Skills	37%	↔	30%	↓	41%	↔	41%	↑	nr	↗	37%	↑	

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Figure 8.3: Percentages Achieving Standards of Sufficiency/Adequacy (or Higher), Division Sub-Population Results, Grade 8

Percentage Achieving Sufficient (or Higher) Opportunity Among ...		All Students		Male		Female		First Nations & Metis		French Immersion		Community Schools	
Opportunity-to-Learn Measures													
Propensity to Learn	60%	⇔	48%	↓	67%	⇔	51%	↑	nr	↗	60%	↑	
Persistence When Experiencing Difficulty in Math	84%	↑	78%	↑	87%	↑	80%	↑	nr	↗	84%	↑	
Home Support for Learning in General	68%	↓	58%	↓	75%	⇔	76%	↑	nr	↗	68%	⇔	
Home Support for Learning Math	76%	↑	52%	↓	90%	↑	78%	↑	nr	↗	76%	↑	
Percentage Achieving Adequate (or Higher) Achievement Among ...		All Students		Male		Female		First Nations & Metis		French Immersion		Community Schools	
Math Performance Measures													
Math Content Skills	65%	↑	66%	↑	64%	↑	69%	↑	nr	↗	65%	↑	
Data Management	99%	↑	100%	↑	98%	↑	100%	↑	nr	↗	99%	↑	
Numbers and Operations	83%	↑	79%	↑	85%	↑	85%	↑	nr	↗	83%	↑	
Ratio and Proportion	68%	⇔	76%	↑	63%	⇔	62%	↑	nr	↗	68%	↑	
Geometry and Measurement	40%	↓	28%	↓	49%	⇔	44%	↑	nr	↗	40%	↑	
Algebra	47%	↓	30%	↓	58%	⇔	46%	⇔	nr	↗	47%	⇔	
Integrated Applications	72%	↑	82%	↑	67%	↑	67%	↑	nr	↗	72%	↑	
Estimation Skills	78%	↑	69%	↑	84%	↑	74%	↑	nr	↗	78%	↑	
Calculator Skills	56%	↑	49%	⇔	61%	↑	53%	↑	nr	↗	56%	↑	
Computation Skills	63%	⇔	56%	⇔	68%	↑	63%	↑	nr	↗	63%	↑	

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Figure 11.2: Percentages Achieving Standards of Excellence/Proficiency, Division Sub-Population Results, Grade 11

Percentage Achieving Excellent Opportunity Among ...		All Students		Male		Female		First Nations & Metis		French Immersion		Community Schools	
Opportunity-to-Learn Measures													
Propensity to Learn	28%	↑	28%	↑	32%	↑	0%	↗	nr	↗	28%	↑	
Persistence When Experiencing Difficulty in Math	45%	↑	29%	↑	57%	↑	27%	↑	nr	↗	45%	↑	
Home Support for Learning in General	36%	↑	30%	↑	38%	⇔	29%	↑	nr	↗	36%	↑	
Home Support for Learning Math	30%	↑	35%	↑	31%	↑	29%	↑	nr	↗	30%	↑	
Percentage Achieving Proficient Achievement Among ...		All Students		Male		Female		First Nations & Metis		French Immersion		Community Schools	
Math Performance Measures													
Math Content Skills	17%	↓	27%	↑	13%	↓	13%	⇔	nr	↗	17%	↑	
Irrational Numbers	51%	⇔	59%	↑	53%	⇔	37%	↓	nr	↗	53%	↑	
Consumer Math and Probability	72%	↑	75%	↑	71%	↑	79%	↑	nr	↗	72%	↑	
Polynomials and Rational Functions	27%	↑	38%	↑	25%	⇔	22%	↑	nr	↗	28%	↑	
Quadratic Functions and Equations	24%	↓	22%	↓	27%	↓	18%	⇔	nr	↗	25%	↑	
Angles, Polygons and Circles	23%	↓	46%	↑	13%	↓	25%	↑	nr	↗	24%	↑	
Integrated Applications	17%	↓	0%	↗	31%	⇔	nr	↗	nr	↗	18%	↓	
Estimation Skills	28%	↓	56%	↑	14%	↓	nr	↗	nr	↗	30%	↓	
Calculator Skills	50%	↑	62%	↑	37%	↑	35%	↑	nr	↗	49%	↑	
Computation Skills	44%	↑	65%	↑	35%	⇔	28%	↑	nr	↗	44%	↑	

Legend: Division **subpopulation** results are:

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↑ meaningfully higher than the provincial subpop'n	↓ meaningfully lower than the provincial subpop'n	⇔ similar to the provincial subpop'n

Figure 11.3: Percentages Achieving Standards of Sufficiency/Adequacy (or Higher), Division Sub-Population Results, Grade 11

Percentage Achieving Sufficient (or Higher) Opportunity Among ...		All Students	Male	Female	First Nations & Metis	French Immersion	Community Schools					
Opportunity-to-Learn Measures												
Propensity to Learn	66%	⇔	53%	⇔	76%	↑	61%	↑	nr	↗	66%	↑
Persistence When Experiencing Difficulty in Math	75%	↑	62%	⇔	87%	↑	87%	↑	nr	↗	75%	↑
Home Support for Learning in General	78%	↑	79%	↑	81%	↑	71%	↑	nr	↗	78%	↑
Home Support for Learning Math	54%	⇔	56%	⇔	57%	⇔	38%	↓	nr	↗	54%	⇔
Percentage Achieving Adequate (or Higher) Achievement Among ...		All Students	Male	Female	First Nations & Metis	French Immersion	Community Schools					
Math Performance Measures												
Math Content Skills	77%	⇔	82%	↑	69%	⇔	50%	↓	nr	↗	76%	↑
Irrational Numbers	74%	⇔	82%	↑	73%	⇔	62%	↓	nr	↗	76%	↑
Consumer Math and Probability	91%	⇔	94%	↑	86%	⇔	100%	↑	nr	↗	90%	↑
Polynomials and Rational Functions	76%	↑	83%	↑	67%	⇔	60%	↑	nr	↗	76%	↑
Quadratic Functions and Equations	79%	↑	80%	↑	74%	⇔	62%	↓	nr	↗	78%	↑
Angles, Polygons and Circles	73%	⇔	81%	⇔	68%	↓	62%	↓	nr	↗	72%	⇔
Integrated Applications	79%	↓	86%	⇔	77%	↓	nr	↗	nr	↗	82%	⇔
Estimation Skills	64%	⇔	93%	↑	56%	↓	nr	↗	nr	↗	66%	↑
Calculator Skills	69%	↑	79%	↑	56%	↑	54%	↑	nr	↗	68%	↑
Computation Skills	80%	↑	82%	↑	79%	↑	64%	↑	nr	↗	80%	↑

Legend: Division subpopulation results are:

62% meaningfully higher than the provincial (all) results	45% meaningfully lower than the provincial (all) results	54% similar to the provincial (all) results
↑ meaningfully higher than the provincial subpop'n	↓ meaningfully lower than the provincial subpop'n	⇔ similar to the provincial subpop'n

Gender Results

This section shows results for male students and for female students. Students who did not indicate their gender are not included in the sub-population gender profiles. The first set of graphs (Figures 5.4a, 5.4b, 8.4a, 8.4b, 11.4a, and 11.4b) show gender results for four opportunity-to-learn measures (briefly described on page 3 of this report). For each measure displayed in the graph, four profiles are shown: the male or female division result; the overall division result; the male or female provincial result; and, the overall provincial result. The black portion of the bar shows the percentage achieving the excellent standard, and the entire bar shows the percentage achieving the sufficient (or higher) standard.

The second set of graphs (Figures 5.5a, 5.5b, 8.5a, 8.5b, 11.5a, and 11.5b) show gender results for five mathematics achievement measures (briefly described on page 3 of this report). The profiles shown in the achievement graphs and the layout of each of these graphs is similar to what was described for the opportunity-to-learn graphs.

Figure 5.4a: Percentages Achieving Standards, Opportunity-to-Learn, Grade 5 Male Students

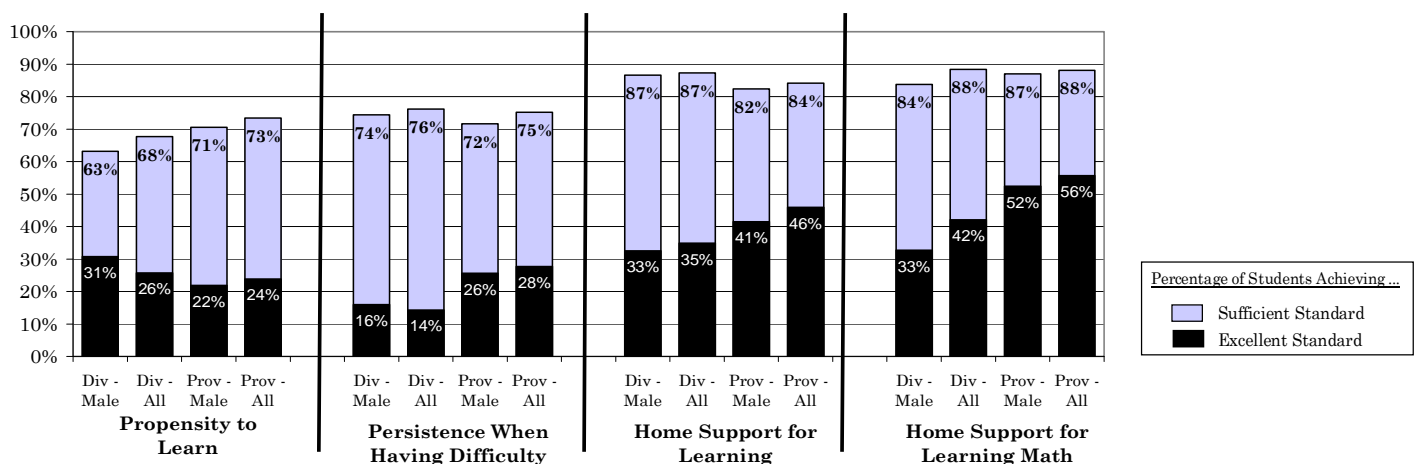


Figure 5.4b: Percentages Achieving Standards, Opportunity-to-Learn, Grade 5 Female Students

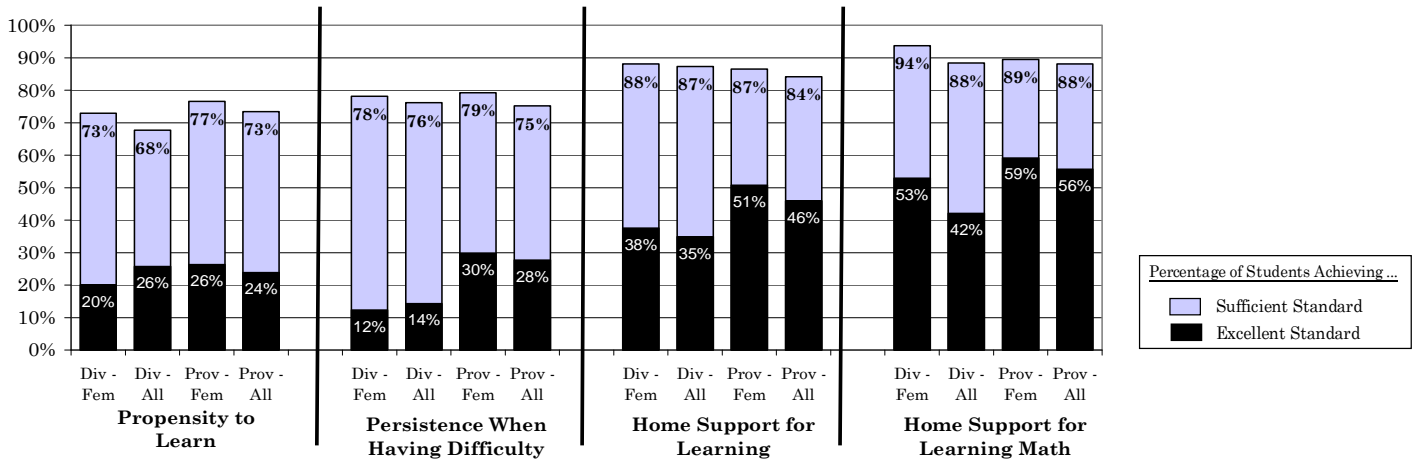


Figure 8.4a: Percentages Achieving Standards, Opportunity-to-Learn, Grade 8 Male Students

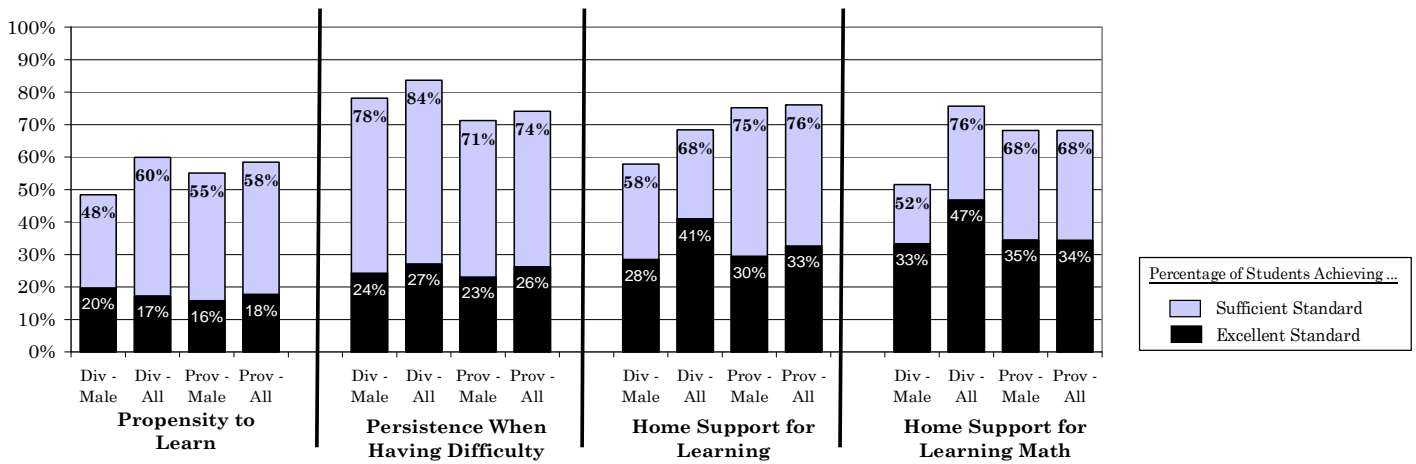


Figure 8.4b: Percentages Achieving Standards, Opportunity-to-Learn, Grade 8 Female Students

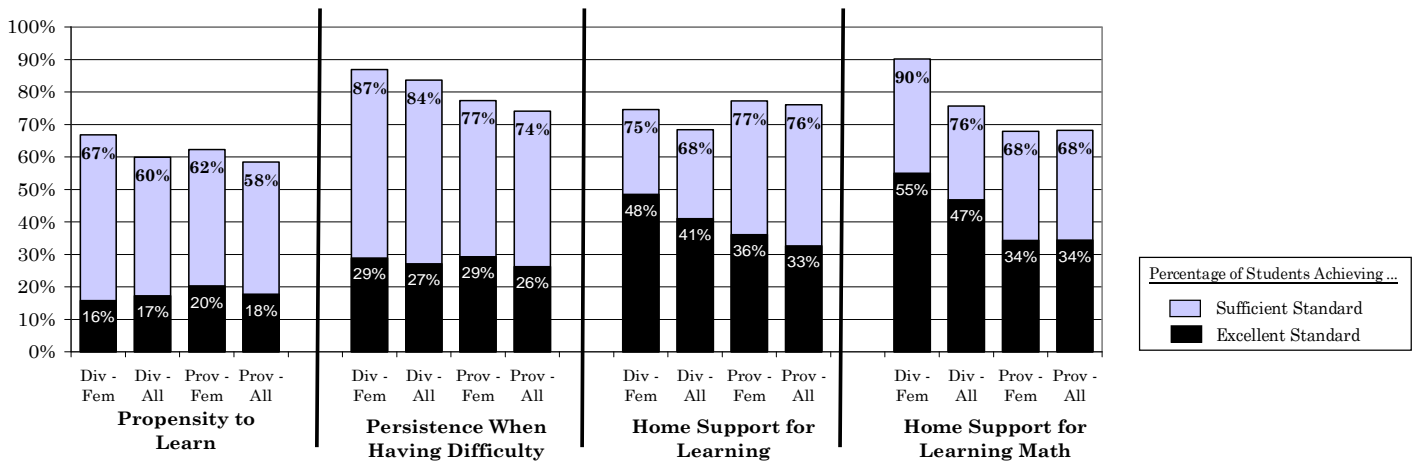


Figure 11.4a: Percentages Achieving Standards, Opportunity-to-Learn, Grade 11 Male Students

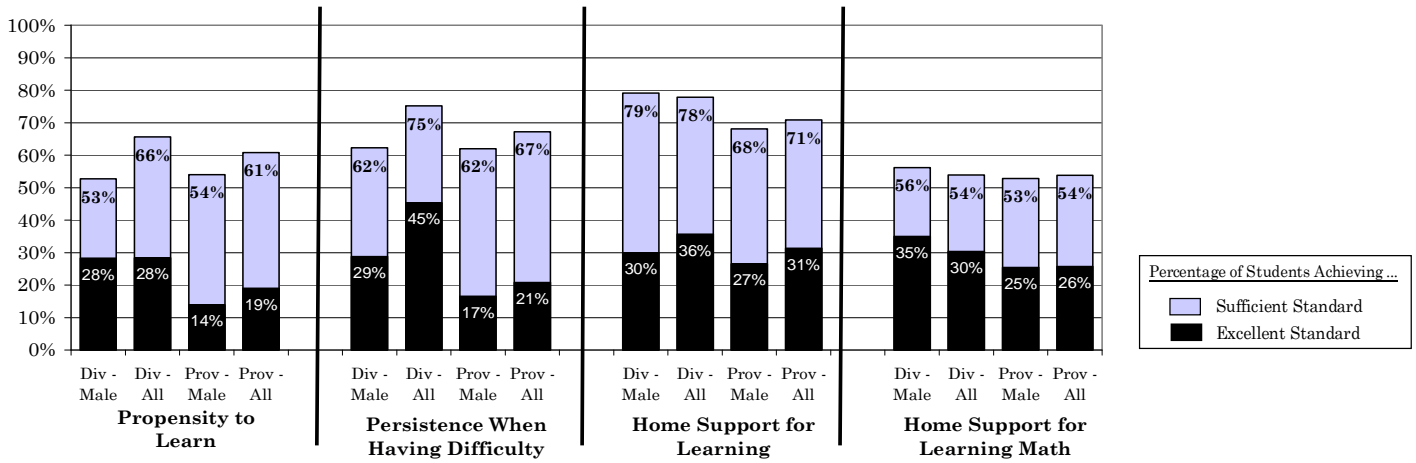


Figure 11.4b: Percentages Achieving Standards, Opportunity-to-Learn, Grade 11 Female Students

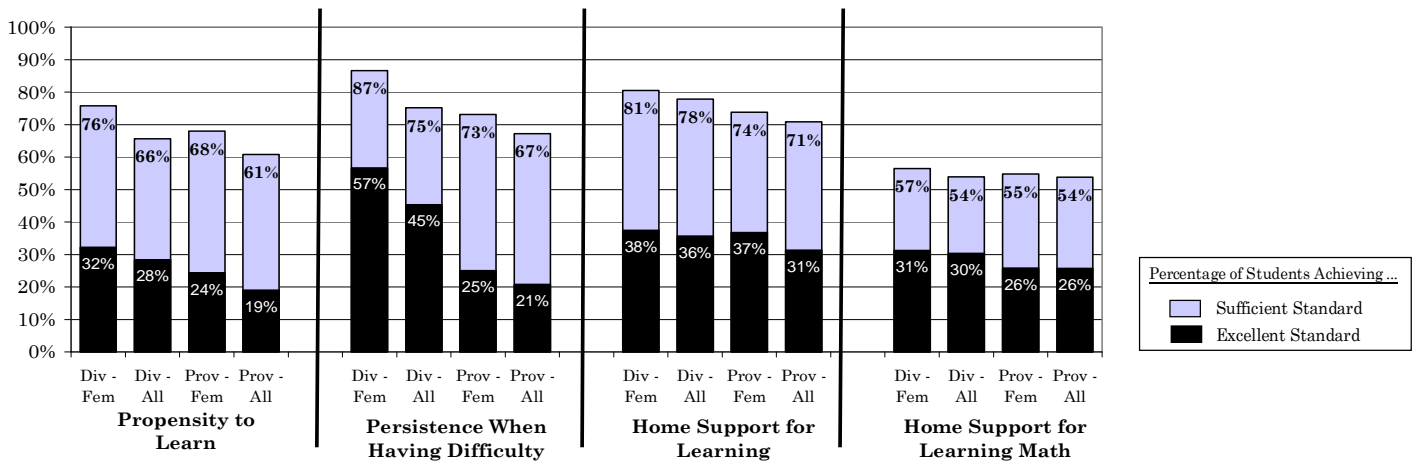


Figure 5.5a: Percentages Achieving Standards, Mathematics Performance, Grade 5 Male Students

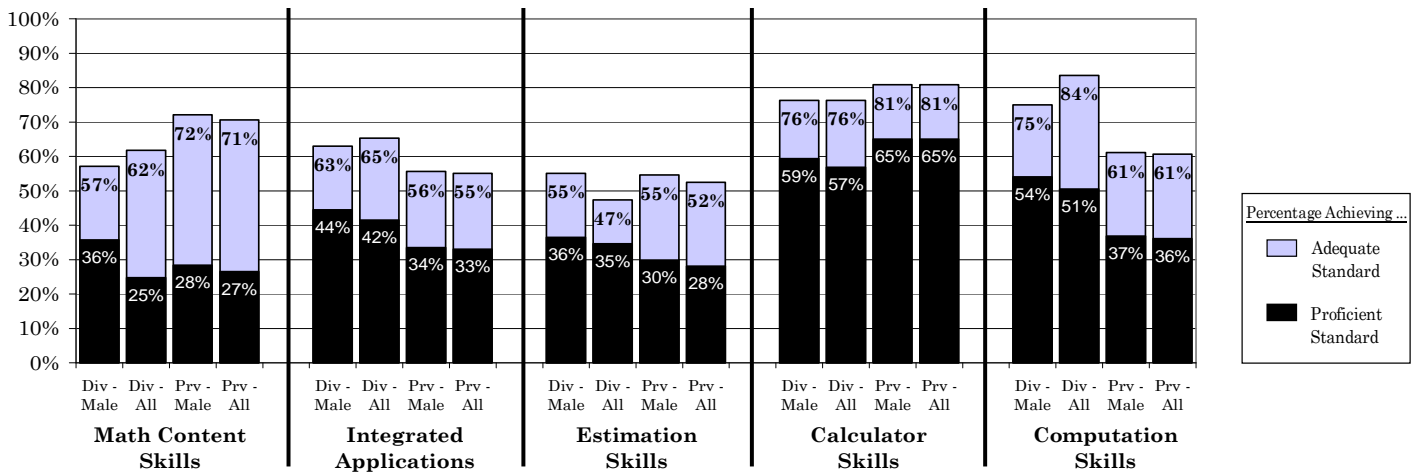


Figure 5.5b: Percentages Achieving Standards, Mathematics Performance, Grade 5 Female Students

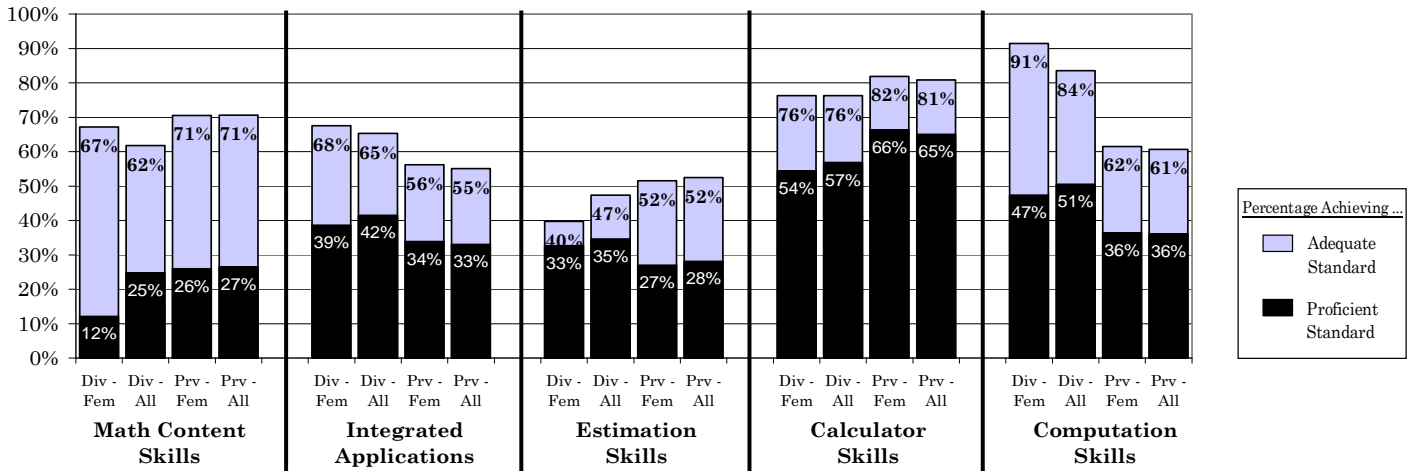


Figure 8.5a: Percentages Achieving Standards, Mathematics Performance, Grade 8 Male Students

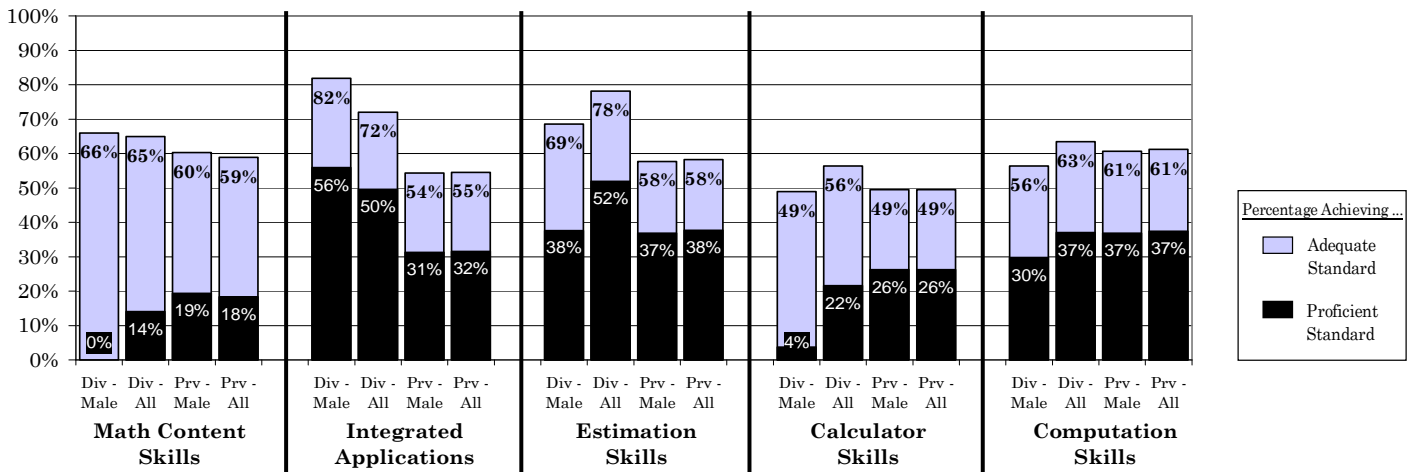


Figure 8.5b: Percentages Achieving Standards, Mathematics Performance, Grade 8 Female Students

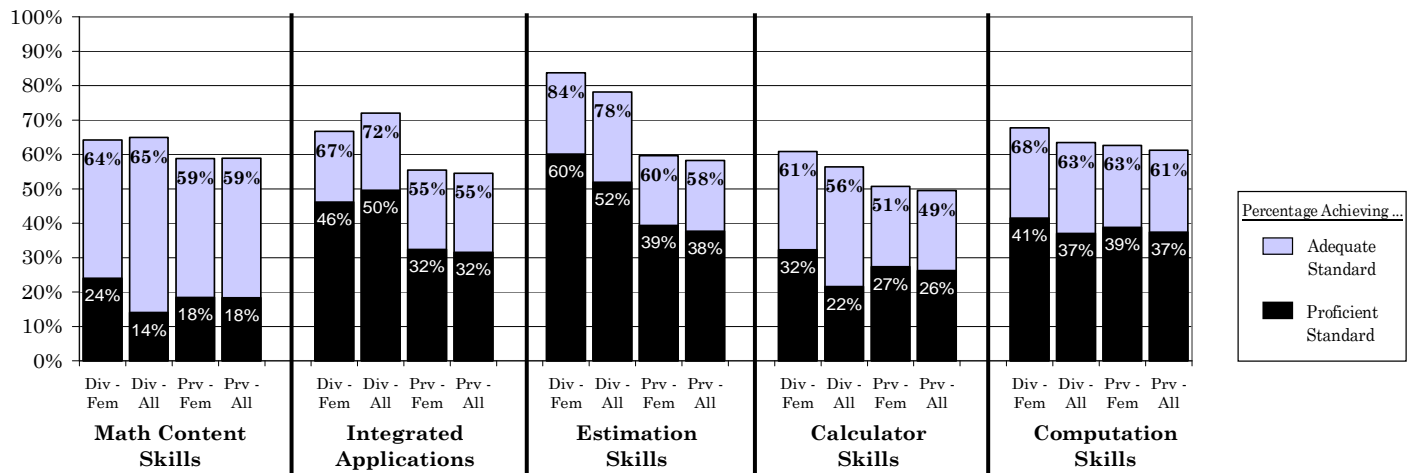


Figure 11.5a: Percentages Achieving Standards, Mathematics Performance, Grade 11 Male Students

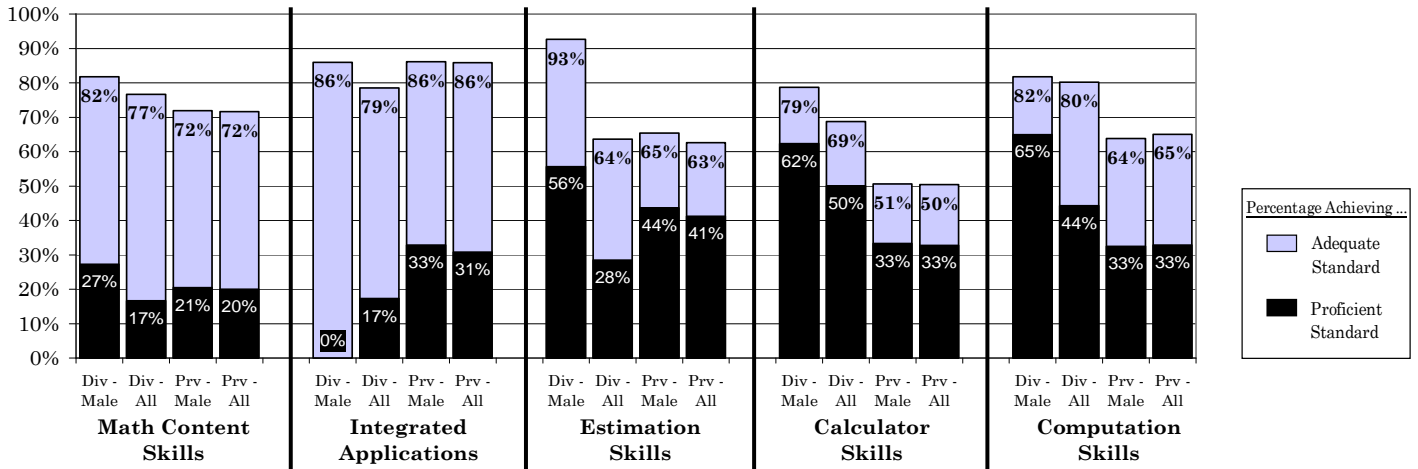
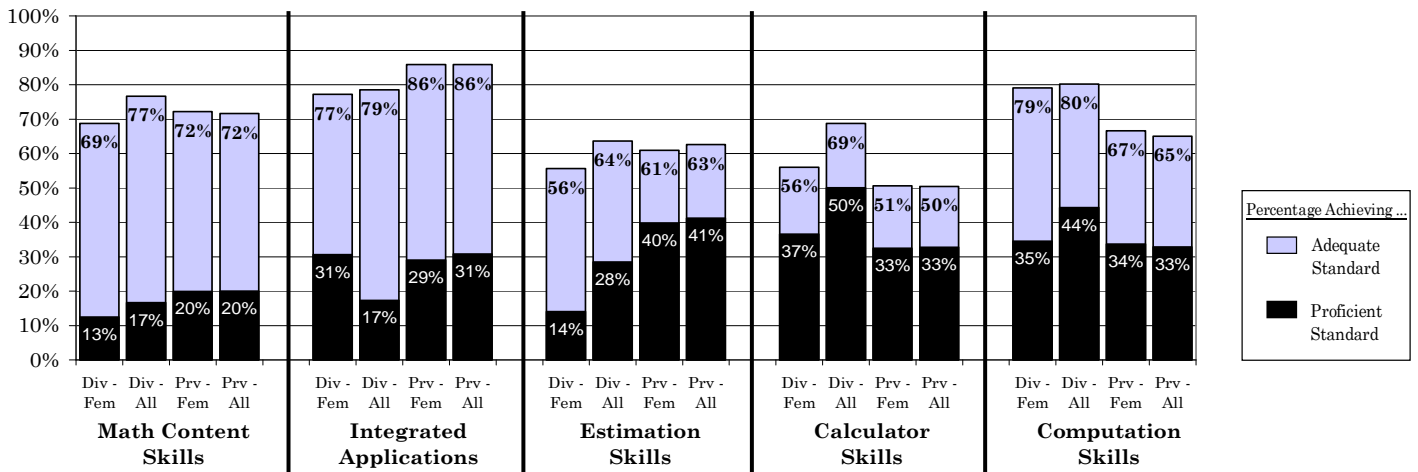


Figure 11.5b: Percentages Achieving Standards, Mathematics Performance, Grade 11 Female Students



First Nations & Metis Student Results

This section shows results for students who declared as First Nations or Metis people. The first set of graphs (Figures 5.6, 8.6, and 11.6) show results for four opportunity-to-learn measures (briefly described on page 3 of this report). For each measure displayed in the graph, four profiles are shown: the division result for First Nations and Metis students; the overall division result; the provincial result for First Nations and Metis students; and, the overall provincial result. The black portion of the bar shows the percentage achieving the excellent standard, and the entire bar shows the percentage achieving the sufficient (or higher) standard.

The second set of graphs (Figures 5.7, 8.7, and 11.7) show First Nations and Metis results for five mathematics achievement measures (briefly described on page 3 of this report). The profiles shown in the achievement graphs and the layout of each of these graphs is similar to what was described for the opportunity-to-learn graphs.

Figure 5.6: Percentages Achieving Standards, Opportunity-to-Learn, Grade 5 First Nations & Metis Students

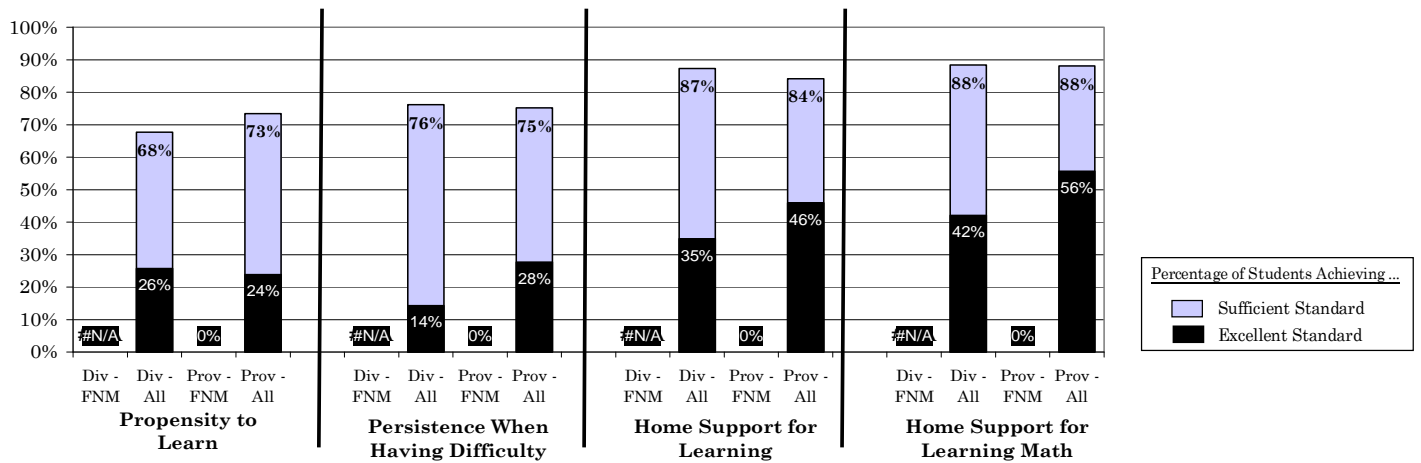


Figure 8.6: Percentages Achieving Standards, Opportunity-to-Learn, Grade 8 First Nations & Metis Students

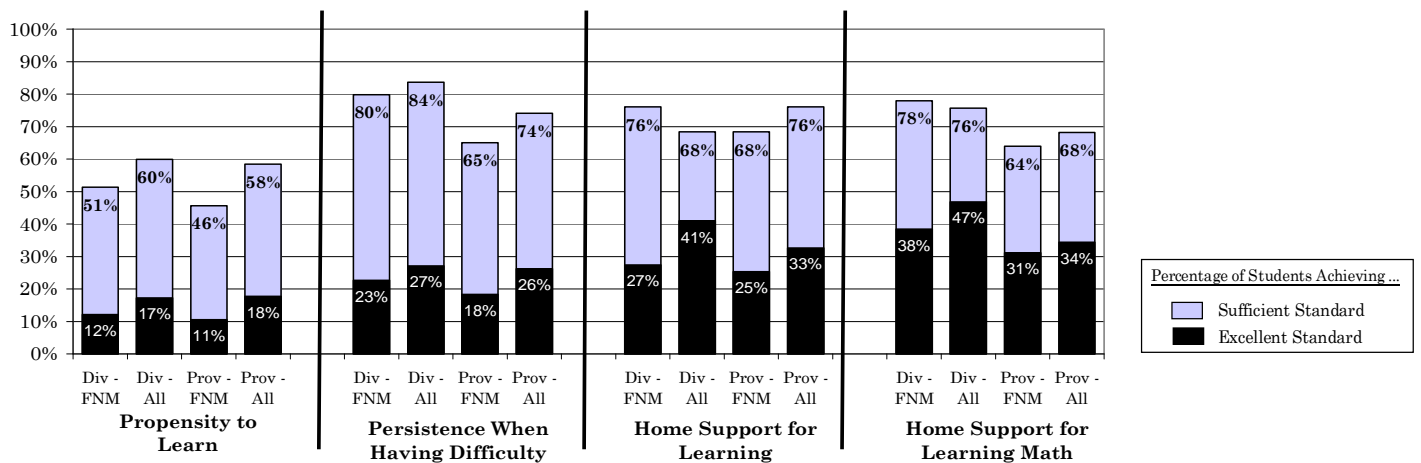


Figure 11.6: Percentages Achieving Standards, Opportunity-to-Learn, Grade 11 First Nations & Metis Students

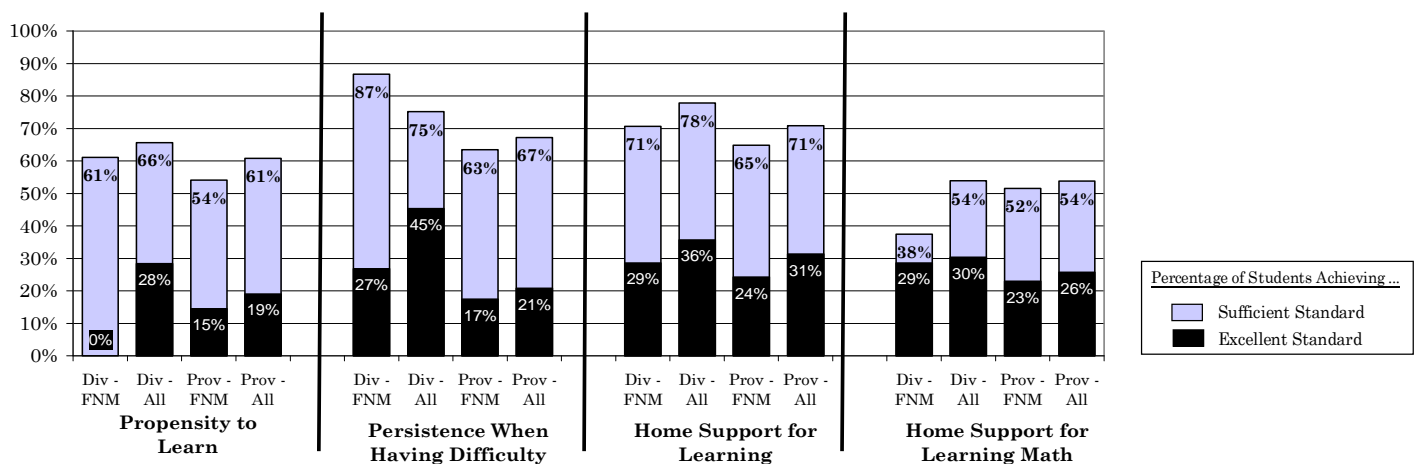


Figure 5.7: Percentages Achieving Standards, Mathematics Performance, Grade 5 First Nations & Metis Students

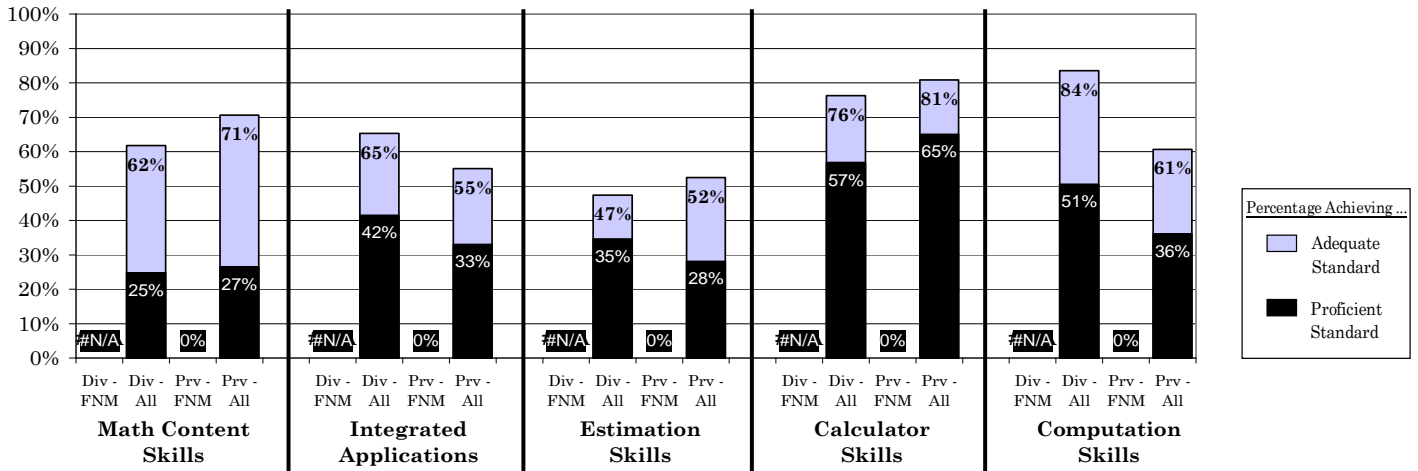


Figure 8.7: Percentages Achieving Standards, Mathematics Performance, Grade 8 First Nations & Metis Students

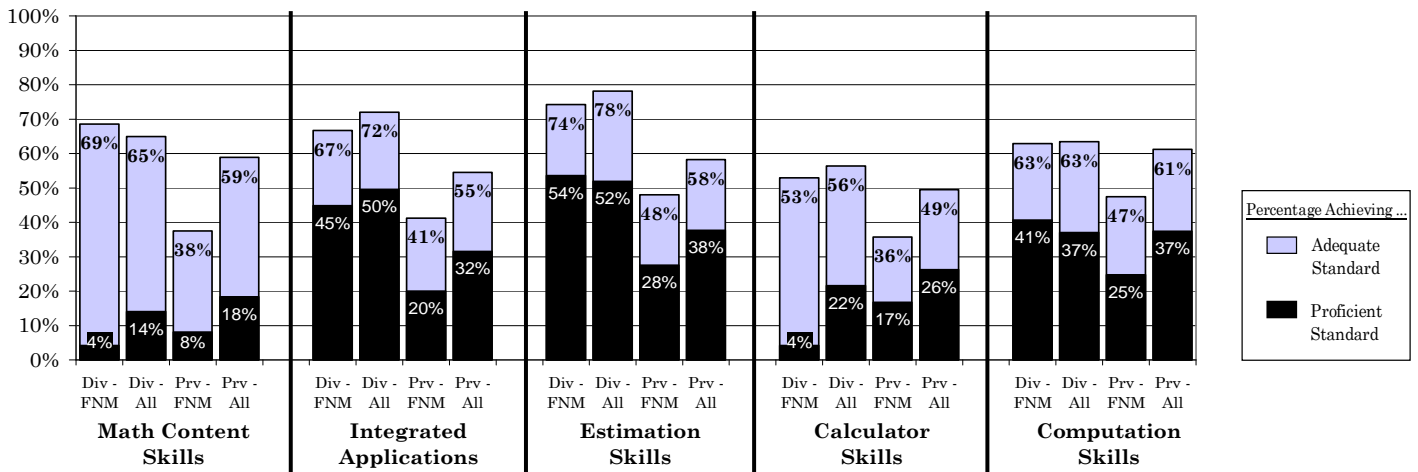
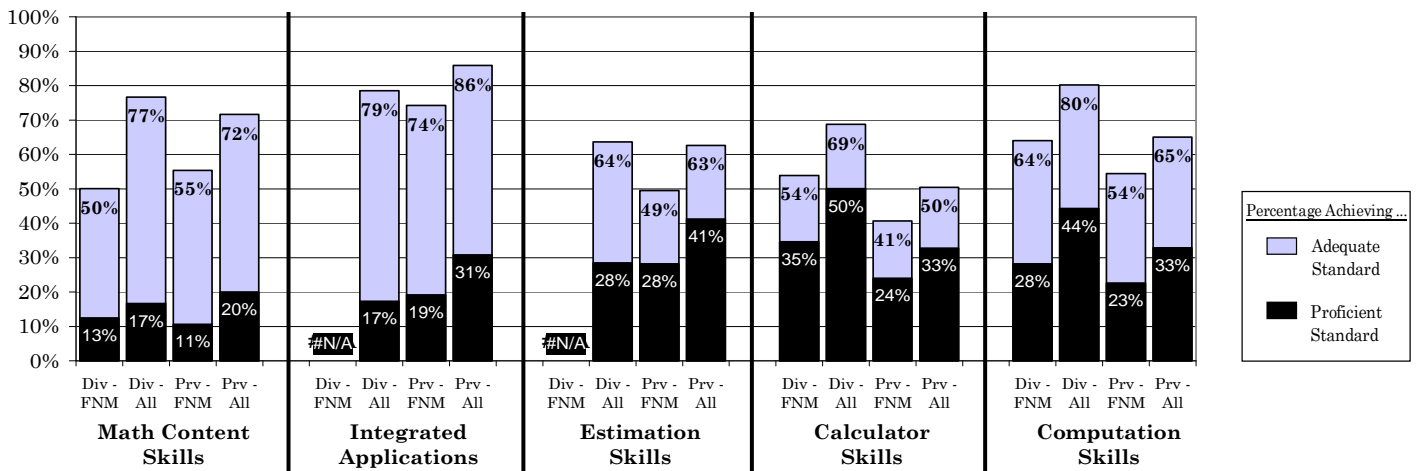


Figure 11.7: Percentages Achieving Standards, Mathematics Performance, Grade 11 First Nations & Metis Students



French Immersion Student Results

This section shows results for students identified to be learning in French Immersion programs. The first set of graphs (Figures 5.8, 8.8, and 11.8) show results for four opportunity-to-learn measures (briefly described on page 3 of this report). For each measure displayed in the graph, four profiles are shown: the division result for French Immersion students; the overall division result; the provincial result for French Immersion students; and, the overall provincial result. The black portion of the bar shows the percentage achieving the excellent standard, and the entire bar shows the percentage achieving the sufficient (or higher) standard.

The second set of graphs (Figures 5.9, 8.9, and 11.9) show French Immersion results for five mathematics achievement measures (briefly described on page 3 of this report). The profiles shown in the achievement graphs and the layout of each of these graphs is similar to what was described for the opportunity-to-learn graphs.

Figure 5.8: Percentages Achieving Standards, Opportunity-to-Learn, Grade 5 French Immersion Students

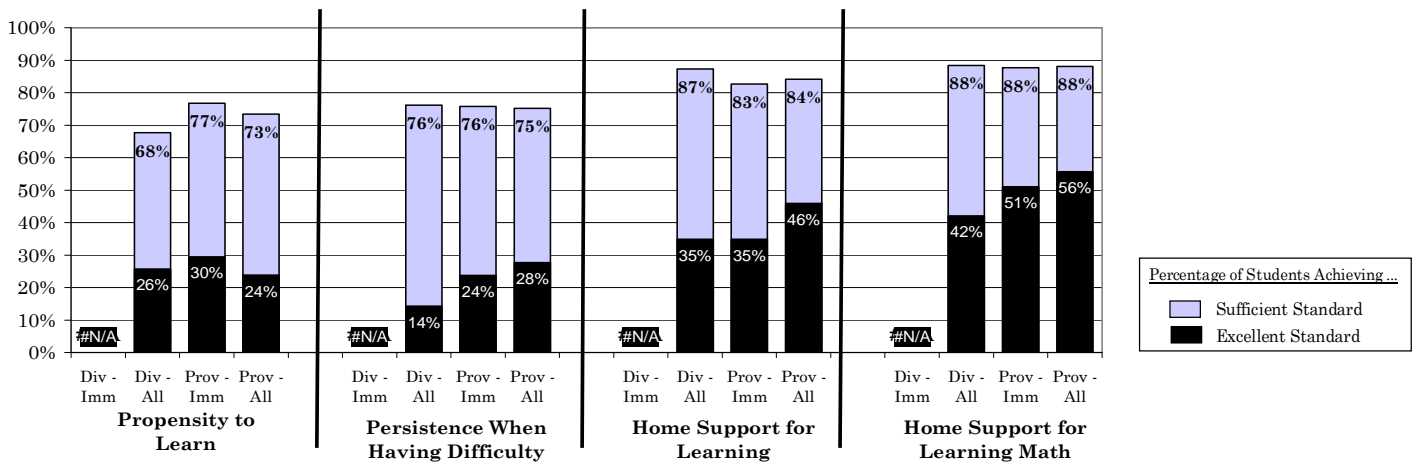


Figure 8.8: Percentages Achieving Standards, Opportunity-to-Learn, Grade 8 French Immersion Students

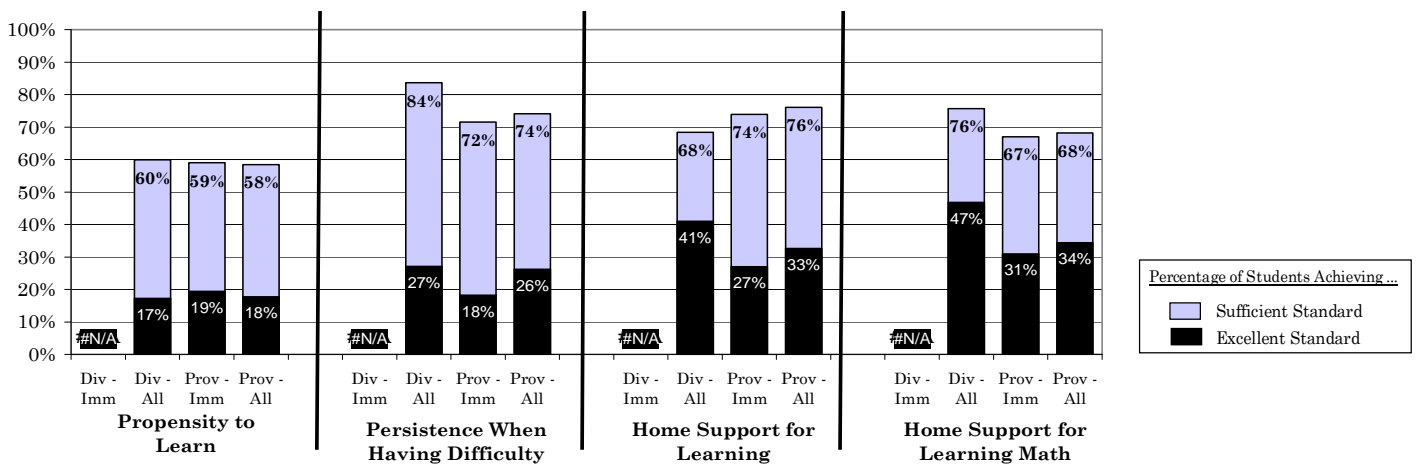


Figure 11.8: Percentages Achieving Standards, Opportunity-to-Learn, Grade 11 French Immersion Students

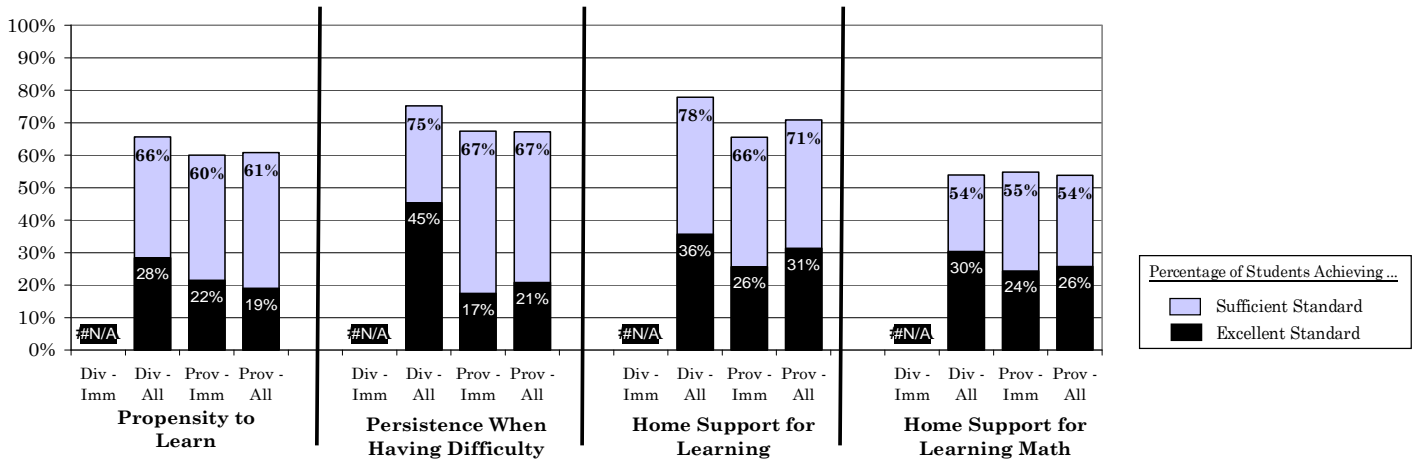


Figure 5.9: Percentages Achieving Standards, Mathematics Performance, Grade 5 French Immersion Students

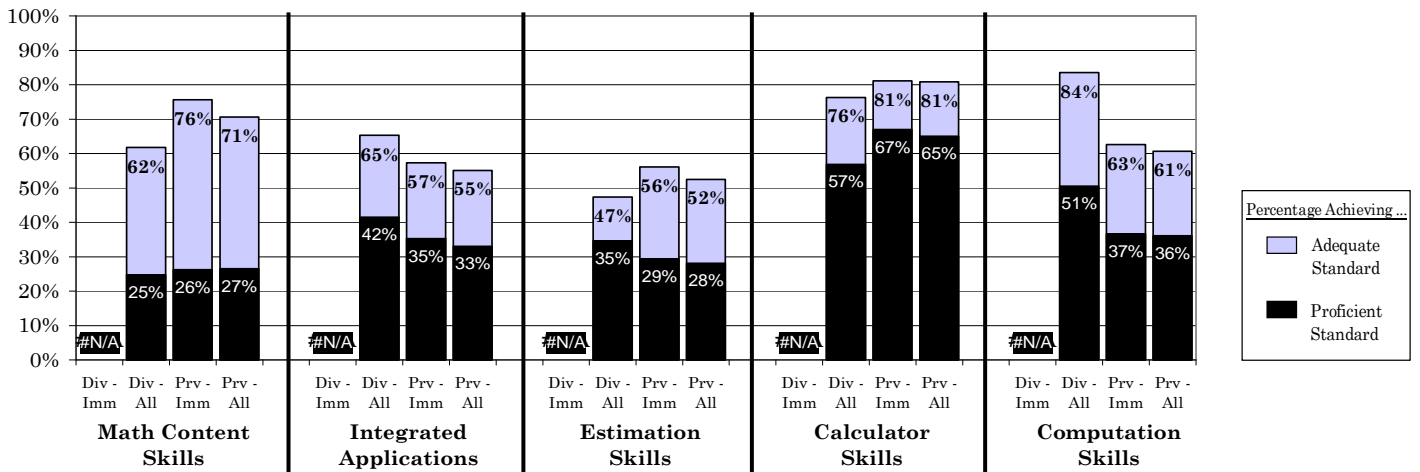


Figure 8.9: Percentages Achieving Standards, Mathematics Performance, Grade 8 French Immersion Students

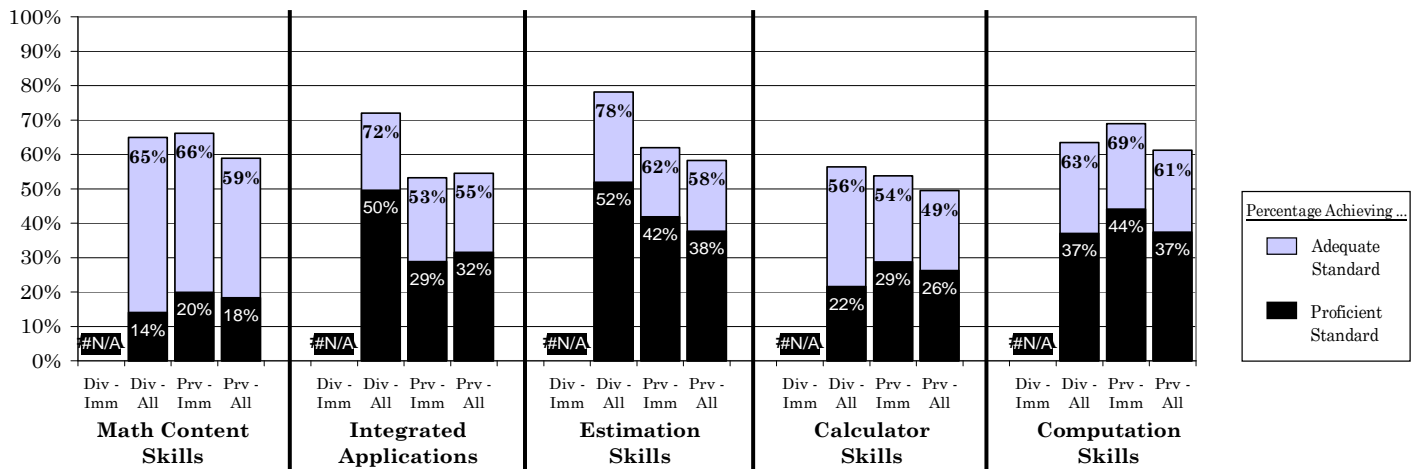
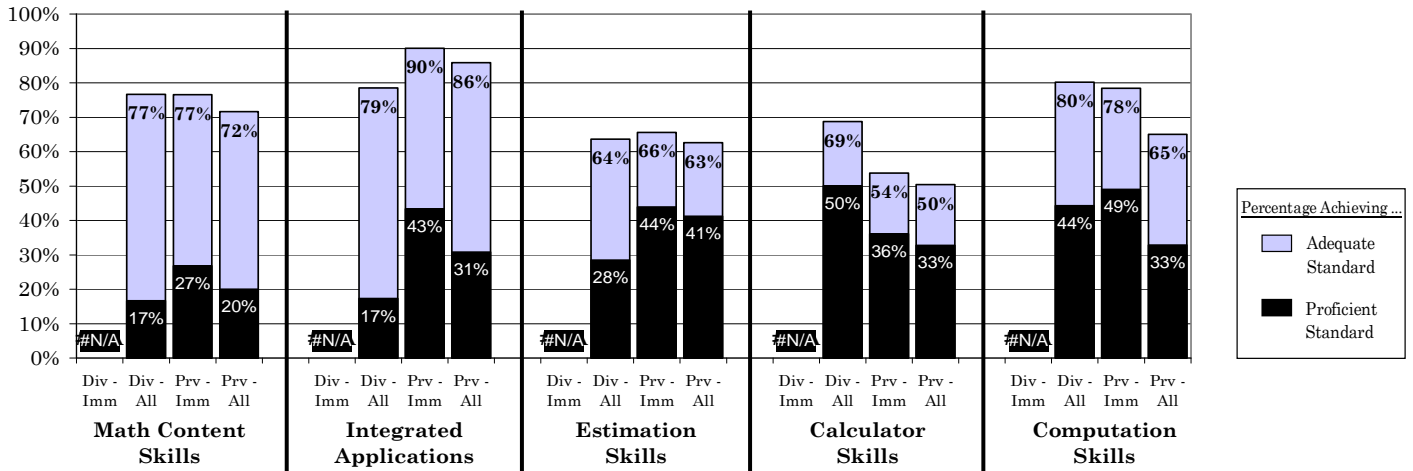


Figure 11.9: Percentages Achieving Standards, Mathematics Performance, Grade 11 French Immersion Students



Community School Student Results

This section shows results for students identified as learning in community schools. The first set of graphs (Figures 5.10, 8.10, and 11.10) show results for four opportunity-to-learn measures (briefly described on page 3 of this report). For each measure displayed in the graph, four profiles are shown: the division result for students learning in community schools; the overall division result; the provincial result for students learning in community schools; and, the overall provincial result. The black portion of the bar shows the percentage achieving the excellent standard, and the entire bar shows the percentage achieving the sufficient (or higher) standard.

The second set of graphs (Figures 5.11, 8.11, and 11.11) show results for students learning in community schools for five mathematics achievement measures (briefly described on page 3 of this report). The profiles shown in the achievement graphs and the layout of each of these graphs is similar to what was described for the opportunity-to-learn graphs.

Figure 5.10: Percentages Achieving Standards, Opportunity-to-Learn, Grade 5 Community School Students

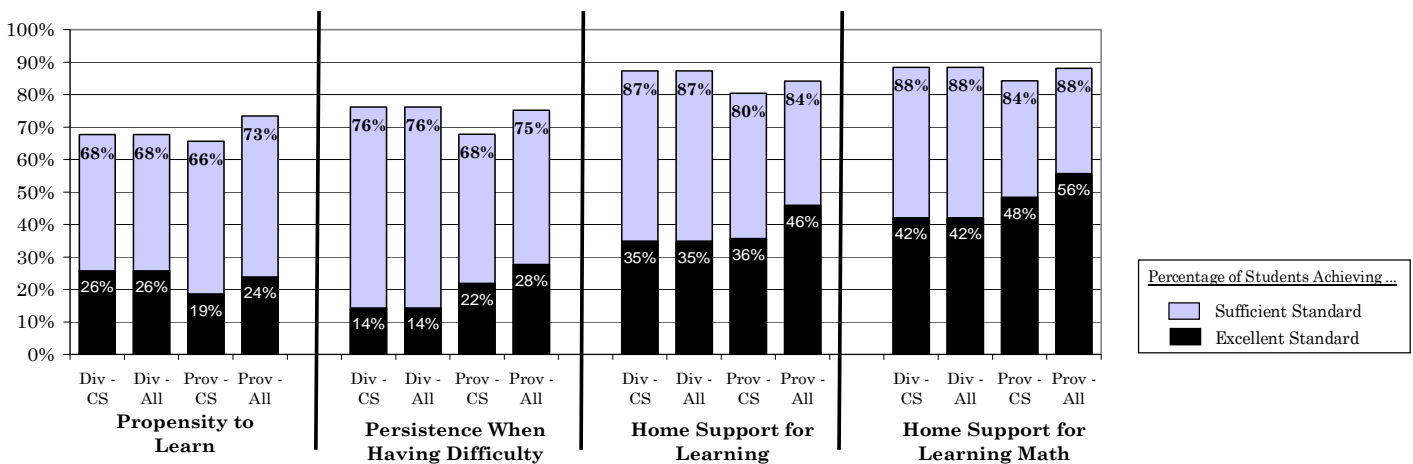


Figure 8.10: Percentages Achieving Standards, Opportunity-to-Learn, Grade 8 Community School Students

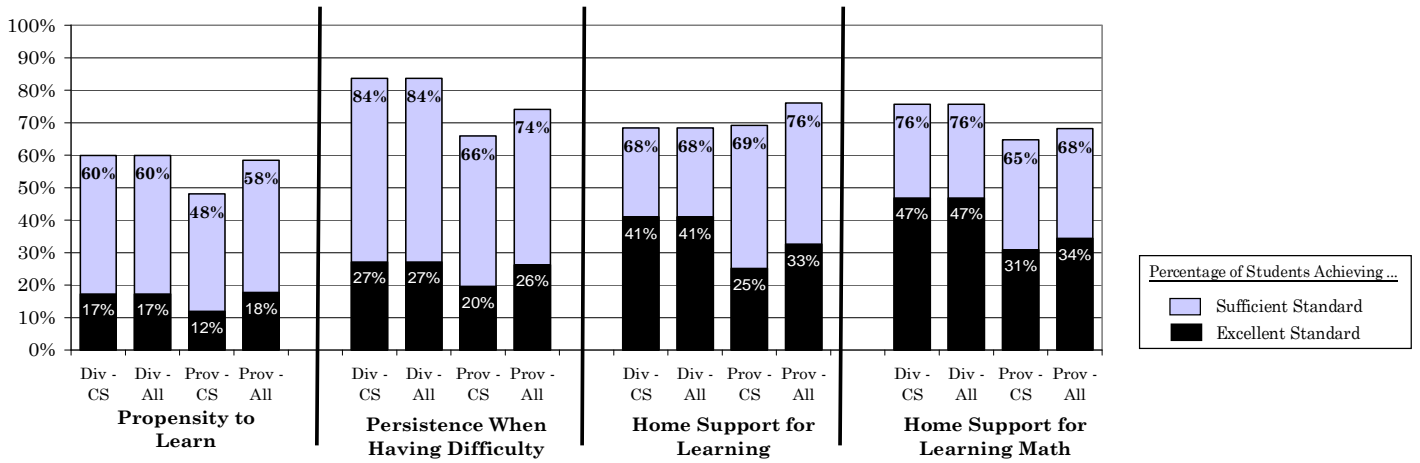


Figure 11.10: Percentages Achieving Standards, Opportunity-to-Learn, Grade 11 Community School Students

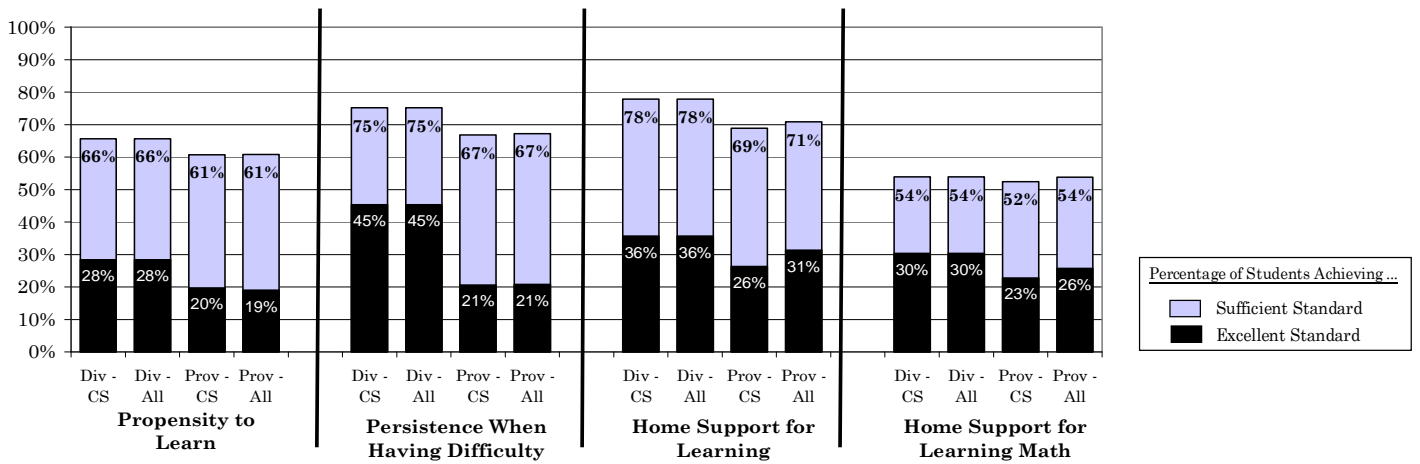


Figure 5.11: Percentages Achieving Standards, Mathematics Performance, Grade 5 Community School Students

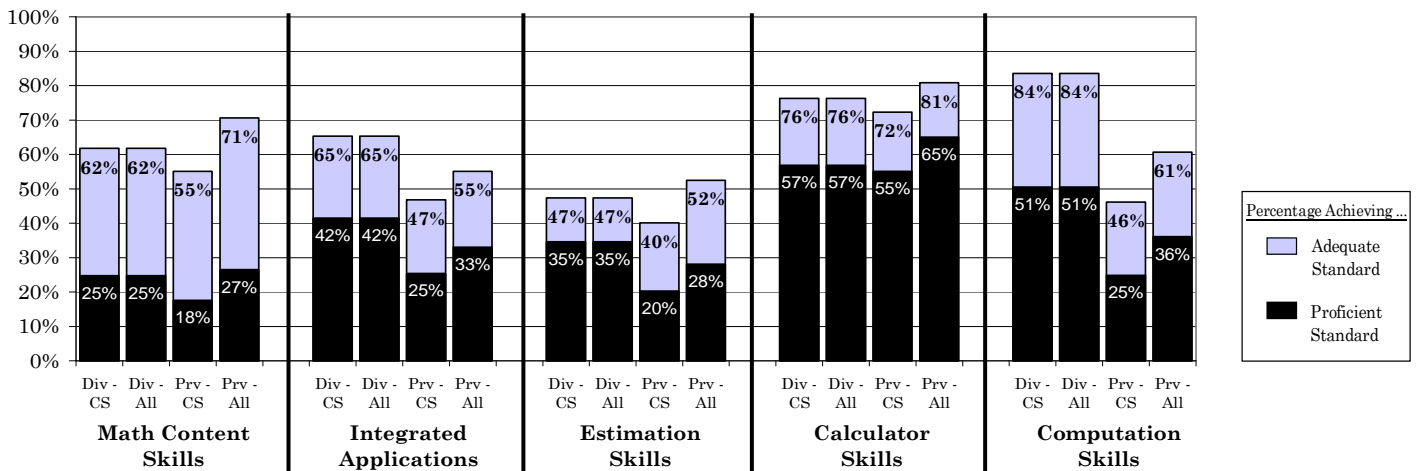


Figure 8.11: Percentages Achieving Standards, Mathematics Performance, Grade 8 Community School Students

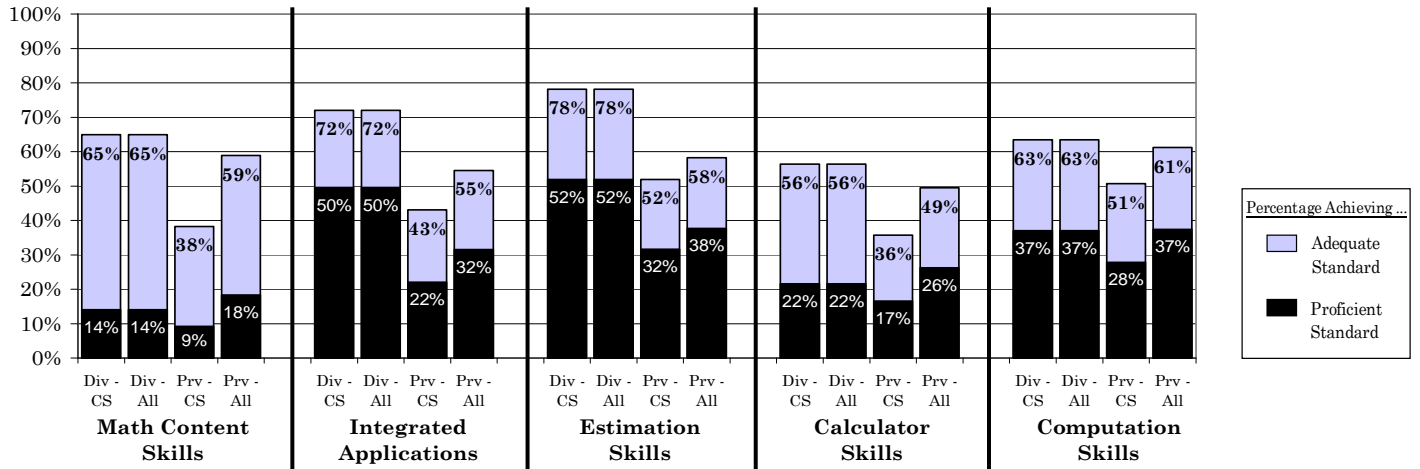


Figure 11.11: Percentages Achieving Standards, Mathematics Performance, Grade 11 Community School Students

