Provincial Reading and Mathematics Assessment 2023

Overview

The Provincial Reading and Mathematics Assessment (PRMA) is an assessment of primary (K-3), elementary (4-6) and intermediate (7-9) reading and mathematics curriculum outcomes. It is administered during a two-week period each May/June to grades 3, 6 and 9 students, alternating annually between reading and mathematics.

In Newfoundland and Labrador, student achievement is assessed at many levels: individual, classroom, school, district, provincial, national, and international. Assessment at each of these levels provides information about student achievement at differing intervals of time and for different purposes. Each level of assessment plays an important role in informing educational decisions. The PRMA is an assessment of learning at the system level. It is not meant to mirror classroom assessments and should not be viewed or interpreted in the same way. It provides provincial information on reading and mathematics, adding to data already collected from school-based, national, and international assessments.

All students on prescribed and modified prescribed curriculum participate in the PRMA, to the extent that they are able. Students whose programming is advised by one or more Enrichment and Skill Development areas can access accommodations that are part of their ongoing support in the classroom. Exemptions are rare and are generally for students on alternate curriculum.

Administration

The second administration of the PRMA was in 2023, with a focus on mathematics. It was administered to 14 527 students across the Newfoundland and Labrador English School District (NLESD) and the Conseil scolaire francophone de provincial (CSFP); 4750 in grade 3, 4639 in grade 6, and 5138 in grade 9. Students in the grades 3 and 6 French immersion program were administered the assessment in French, while students in the grade 9 program were administered the assessment in English.

Grades 3, 6, and 9 students wrote this one-hour assessment during a school-selected period between May 29 and June 9, 2023. Newfoundland and Labrador teachers worked with the Department of Education to develop this assessment, to score the items, and to set the proficiency levels. All the selected and constructed response items were aligned directly with the mathematics curriculum up to the end of grades 3, 6, and 9.

Exemptions and Accommodations

The Department of Education recognizes its responsibility to provide exemptions and accommodations for students whose programming is advised by one or more Enrichment and Skill Development areas and to provide supports for students in the English as an Additional Language (EAL) program, including exemptions for some students. Students may access accommodations, as outlined in the Responsive Teaching and Learning Policy for grades 3 and 6 and the Service Delivery Model for grade 9. These accommodations include alternate format materials, assistive technology, scribing, transcribing, and reading of print material.

The following number of students were exempt or received accommodations during the 2023 administration:

	Grade 3	Grade 6	Grade 9
Exempt	96	83	111
Accommodations	276	346	348

The number of students who were exempt or availed of mathematic accommodations for the 2023 PRMA

Scoring, Proficiency Level Descriptors, and Standard Setting

The PRMA is composed of selected and constructed response items. All selected response items (multiple-choice) were scored electronically. Constructed response items were scored by teachers, using a scoring guide, at a Provincial Scoring Panel.

Groups of teachers, administrators, and educators from the Department of Education then created proficiency level descriptors, which helped define the three proficiency levels: Not Meeting Expectations, Approaching Expectations, and Meeting Expectations. Additional groups then participated in a standard-setting process to determine what percentage of students achieved at each proficiency level. A description of the specific skills students demonstrate at each proficiency level is provided in Tables 1, 2 and 3.

Table 1	
Primary Student Descriptors	
Student who is not meeting expectations	**Students have some basic mathematical knowledge. The student is able to:** • Identify numbers • Add and subtract whole numbers but may not understand when each operation should be used • Use pictorial representations to solve simple problems • Read simple graphs and tables • Sort common geometric shapes and objects, and identify common 2-D shapes • Use non-standard units of measurement • Solve simple word problems while relying on a limited number of strategies (pictorially and concretely) • Estimate • Recognize patterns (i.e. repeating, increasing, decreasing)
Student who is approaching expectations	**Students can apply basic mathematical knowledge in simple situations. The student is able to:** • Sequence numbers • Perform basic operations (add, subtract, multiply, and divide) involving whole numbers • Read and label graphs and tables • Use standard and non-standard units of measurement • Apply some knowledge of geometric shapes and objects' attributes, and draw common 2-D shapes • Apply estimation strategies • Solve word problems in familiar contexts • Demonstrate some understanding of place value, and fractions • Extend patterns
Student who is meeting expectations	**Students can apply the conceptual understanding to solve problems. The student is able to:** • Order and compare numbers • Add/subtract two or more 3-digit numbers and multiply/divide (up to 5 by 5) • Solve one-step addition/subtraction equations to represent an unknown number • Construct tables and graphs; interpret and use the data to solve problems • Solve measurement problems

	• Identify, describe, and sort geometric shapes and objects according to their attributes • Solve a variety of multi-step word problems • Show an understanding of place value, fractions, and multiples • Compare and create patterns

Table 2	
Elementary Student Descriptors	
Student who is not meeting expectations	**Students have some basic mathematical knowledge. The student is able to:** • Carry out some routine procedures to solve one-step problems • Calculate some whole numbers accurately • Recognize some mathematical concepts, terms, and properties (e.g. geometric shapes and angles) • Represent whole number place value (concretely and pictorially) • Demonstrate some understanding of fractions and ratios • Represent patterns • Compare and order whole numbers • Identify a transformation (e.g., translations) • Apply an estimation strategy • Read simple graphs and tables
Student who is approaching expectations	**Students can apply basic mathematical knowledge in simple situations. The student is able to:** • Carry out routine procedures to solve simple problems (e.g., perimeter and ratios) • Perform basic operations involving whole and decimal numbers • Recall and recognize some mathematical concepts, terms, and properties • Identify angles and characteristics of 2-D shapes and 3-D objects • Retrieve information from graphs, tables, or diagrams • Understand and use some grade-level vocabulary but may confuse meanings and terms • Extend patterns • Perform a single transformation • Represent and compare place value, fractions, and integers • Solve equations using a variable • Demonstrate some understanding of decimals and percentages

Student who is meeting expectations	**Students can apply the conceptual understanding to solve problems. The student is able to:** • Solve a variety of routine and multi-step problems (e.g., area/volume, factors, order of operations, and multiples) • Compute accurately and efficiently with whole and decimal numbers (may make minor errors) • Recognize connections between mathematical concepts, terms, and properties, and use informal and some formal reasoning with symbolic representation. • Construct and/or compare angles of geometric shapes • Construct, interpret, and use data in tables and graphs • Pictorially, concretely, and symbolically represent a concept, such as place value • Apply an estimation strategy using whole and decimal numbers • Compare the likelihood of all possible outcomes of a probability experiment • Perform/describe successive transformations • Represent, compare, and order fractions, mixed numbers, and integers • Write expressions and equations using a variable

Table 3	
Intermediate Student Descriptors	
Student who is not meeting expectations	**Students have some basic mathematical knowledge. The student is able to:** • Recognize previously learned information (e.g., geometric shapes, perfect squares) • Retrieve information from graphs, tables, or diagrams • Calculate percentages and translate between percentage and decimal notation • Compare and order numbers, including positive fractions and decimal representations (excluding percentages and negative rational numbers) • Solve previously learned routine problems with explicit instructions in the stem • Solve problems with one-step calculation, including problems with several one-step calculations • Identify two-dimensional shapes and determine their area and perimeter (e.g. circle, triangle, rectangle)

Student who is approaching expectations	**Students can apply basic mathematical knowledge in simple situations. The student is able to:** • Carry out calculations that involve more than one operation (e.g. add/subtract, multiply/divide, square/square root) • Interpret information from graphs, tables, or diagrams • Compare and order numbers, including integers, decimals and percentages • Identify, graph, and solve one-step and two-step algebraic equations to solve simple problems • Identify geometric concepts (e.g. circle properties, Pythagorean theorem, similar shapes) • Use their knowledge of statistics and probability to interpret given information (i.e. circle graphs, tree diagrams) and solve problems
Student who is meeting expectations	**Students can apply the conceptual understanding to solve problems. The student is able to:** • Apply mathematical concepts in a problem-solving context • Construct, use, and extend information from tables, diagrams, or graphs • Generate the algebraic expression, equation or inequality for a given context/problem and solve it • Solve problems requiring algebraic and spatial reasoning (e.g., carry out multiple multi-step calculations, perform multiple transformations, manipulate variable equations) • Compare and order rational numbers • Solve problems using relevant information and/or hidden assumptions • Determine the surface area and volume of 3-D objects • Apply geometric concepts (e.g. circle properties, Pythagorean theorem, similar shapes) • Select appropriate strategies to solve a problem • Use mathematical reasoning to justify a solution to a problem • Use their knowledge of statistics and probability to interpret given information, identify and analyze potential bias, and determine the possible outcomes of a situation to solve problems

Assessment Results

The results for the 2023 spring administration of the PRMA are shown in the figures below. Figures 1.1-1.8 show the results for grade 3 students, 2.1-2.8 show the results for grade 6 students, and 3.1-3.8 show the results for grade 9 students.

These results have been categorized into four main sections;

1. **Provincial Results** – overall performance by grade, including students from the English, French First Language, and French Immersion programs, and those who availed of mathematics accommodations during the assessment.
2. **Performance by Gender** – performance by gender, including males, females, and other gender identities.
3. **Performance by Program** –performance of students enrolled in the English, French First Language, and French Immersion programs.
4. **Performance With and Without Accommodations** – performance of students who completed the assessment with mathematics accommodations.

Primary

Provincial Results

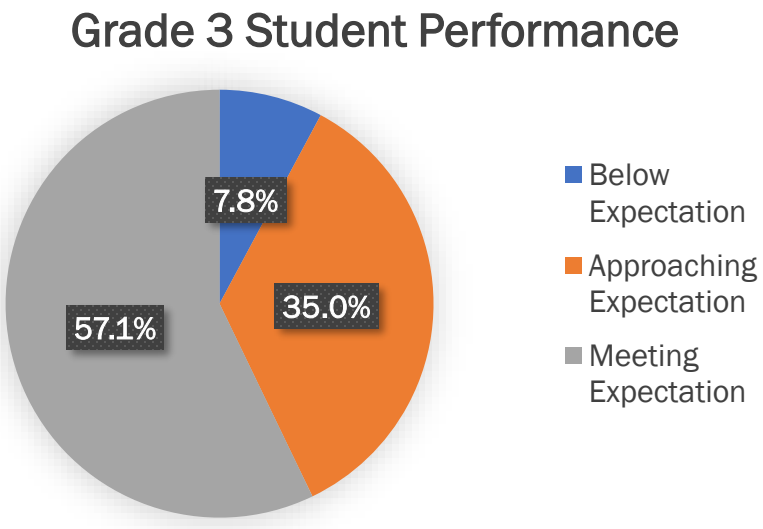


Figure 1.1 - Percentage of grade 3 students below, approaching and meeting expectations.

Performance by Gender

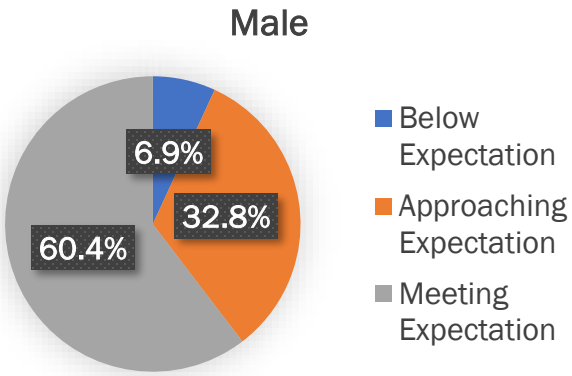


Figure 1.2
Percentage of grade 3 male students below, approaching and meeting expectations.

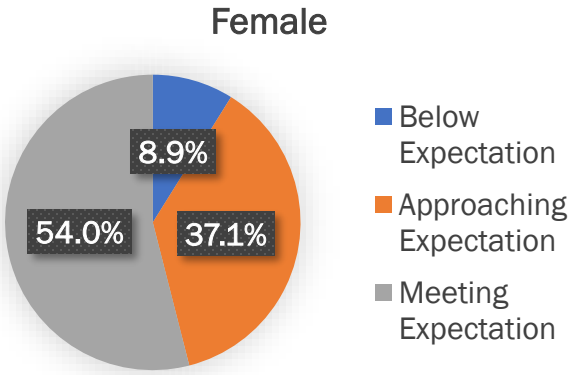


Figure 1.3
Percentage of grade 3 female students below, approaching and meeting expectations.

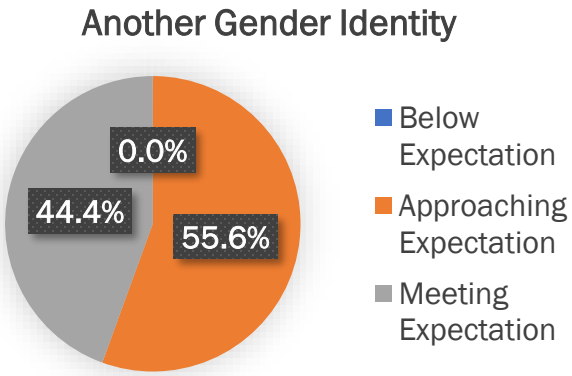


Figure 1.4
Percentage of grade 3 students who have another gender identity who are below, approaching and meeting expectations.

Performance by Program

Figure 1.5
Percentage of grade 3 students in the English program below, approaching and meeting expectations.

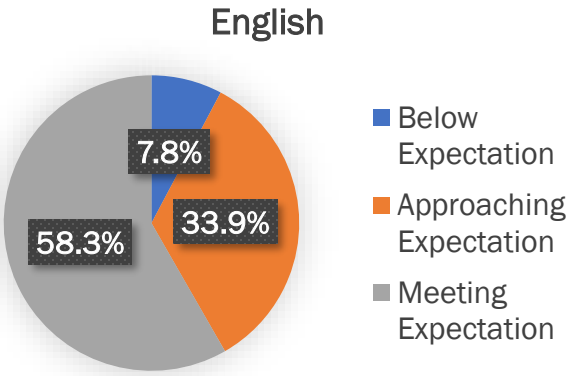
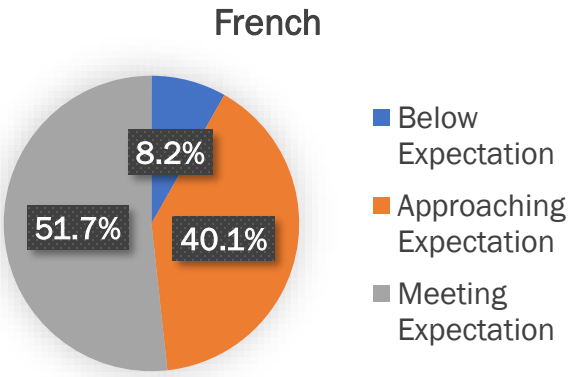
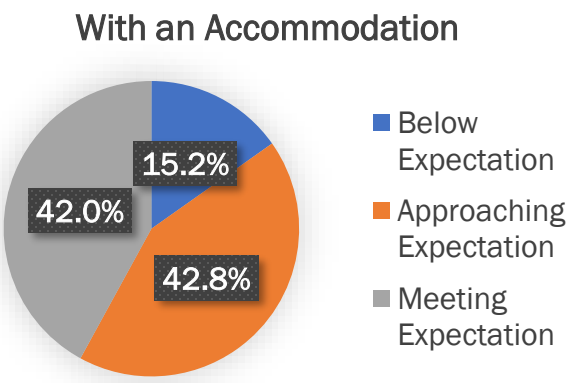


Figure 1.6
Percentage of grade 3 students in the French First Language and French Immersion programs below, approaching and meeting expectations.



Performance With and Without Accommodations

Figure 1.7
Percentage of grade 3 students who wrote the assessment with a mathematics accommodation below, approaching and meeting expectations.



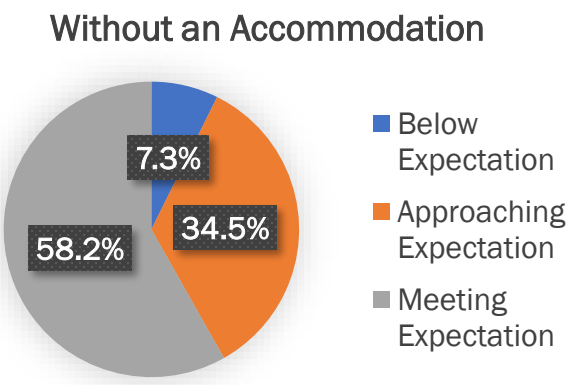


Figure 1.8
Percentage of grade 3 students who wrote the assessment without a mathematics accommodation below, approaching and meeting expectations.

Elementary

Provincial Results

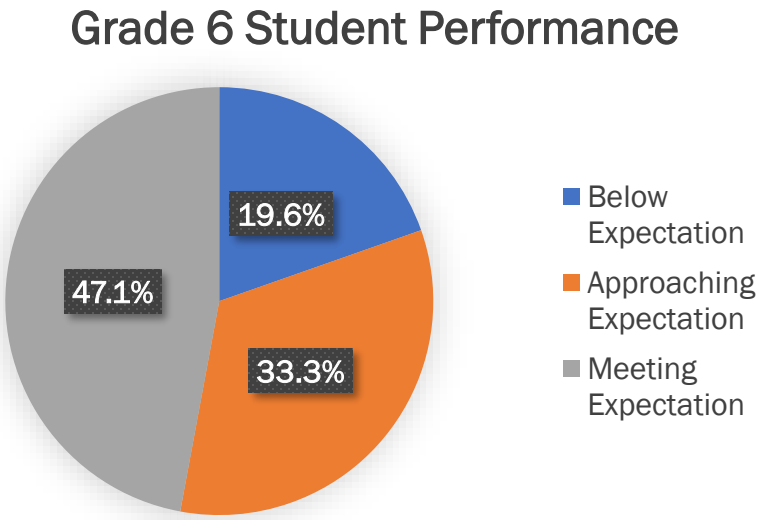


Figure 2.1 - Percentage of grade 6 students below, approaching and meeting expectations.

Performance by Gender

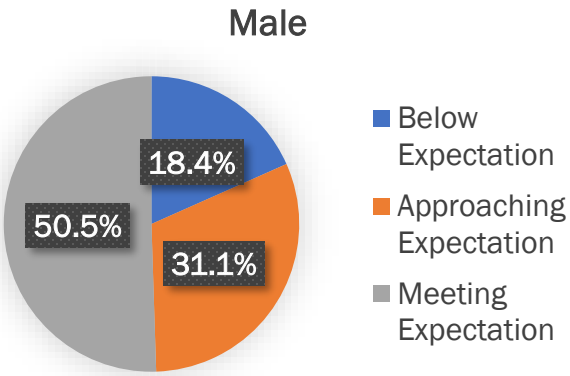


Figure 2.2
Percentage of grade 6 male students below, approaching and meeting expectations.

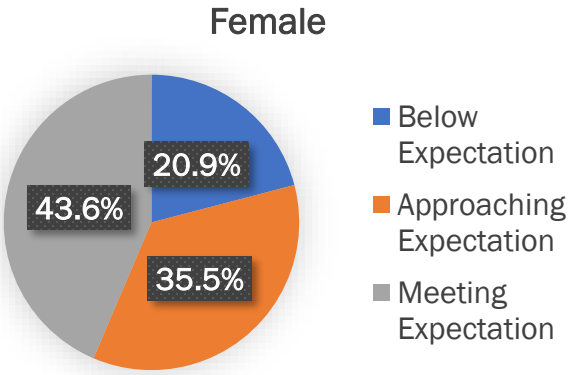


Figure 2.3
Percentage of grade 6 female students below, approaching and meeting expectations.

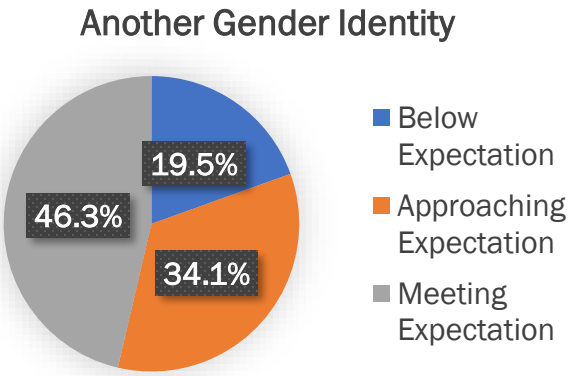


Figure 2.4
Percentage of grade 6 students who have another gender identity who are below, approaching and meeting expectations.

Performance by Program

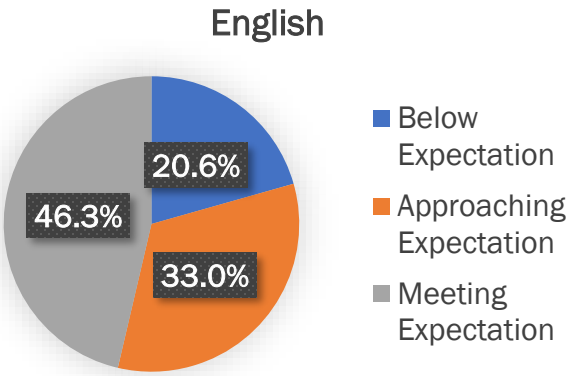


Figure 2.5
Percentage of grade 6 English program students below, approaching and meeting expectations.

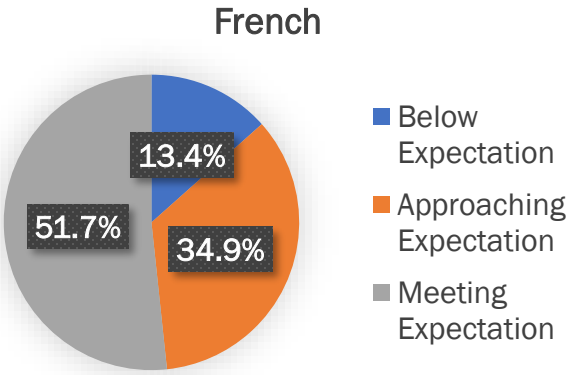


Figure 2.6
Percentage of grade 6 French Immersion program and French First Language students below, approaching and meeting expectations.

Performance With and Without Accommodations

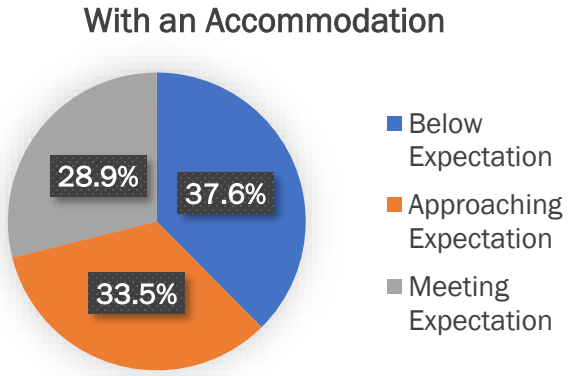


Figure 2.7
Percentage of grade 6 students who wrote the assessment with a mathematics accommodation below, approaching and meeting expectations.

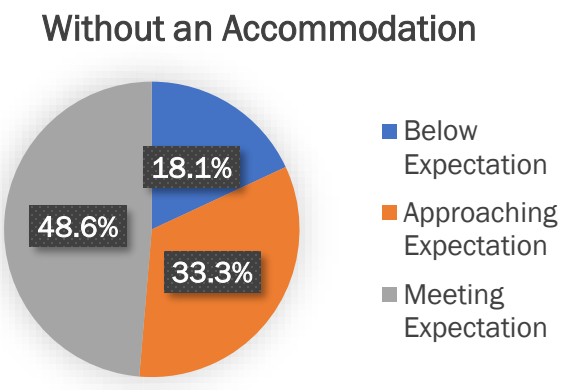


Figure 2.8
Percentage of grade 6 students who wrote the assessment without a mathematics accommodation below, approaching and meeting expectations.

Intermediate

Provincial Results

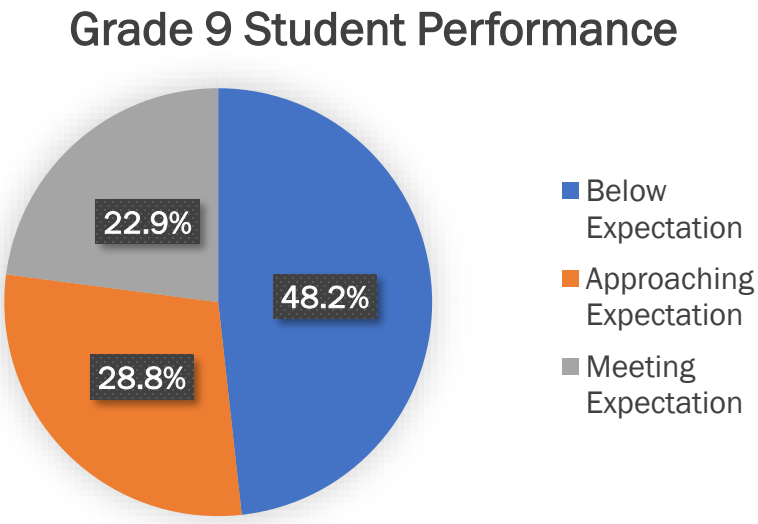


Figure 3.1 - Percentage of grade 9 students below, approaching and meeting expectations.

Performance by Gender

Figure 3.2
Percentage of grade 9 male students below, approaching and meeting expectations.

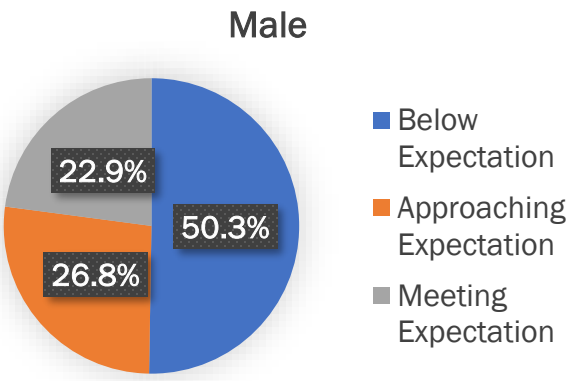


Figure 3.3
Percentage of grade 9 female students below, approaching and meeting expectations.

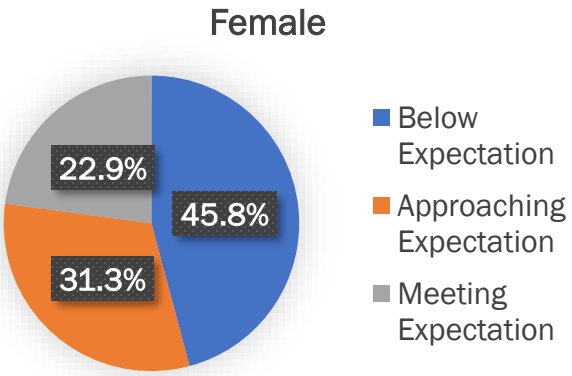
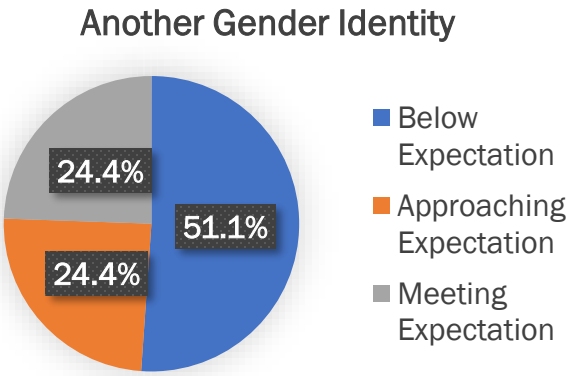


Figure 3.4
Percentage of grade 9 students who have another gender identity who are below, approaching and meeting expectations.



Performance by Program

Figure 3.5
Percentage of grade 9 English program students below, approaching and meeting expectations.

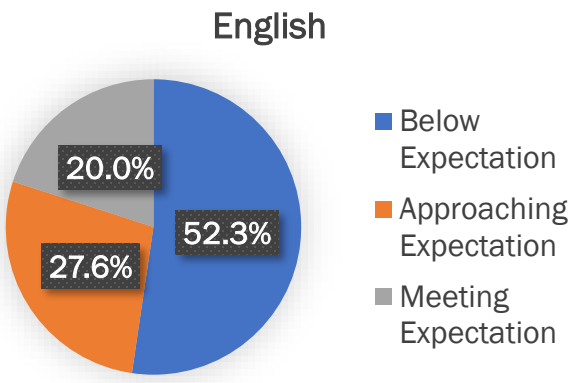
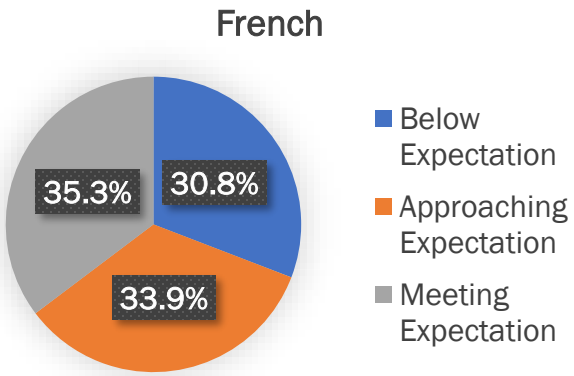


Figure 3.6
Percentage of grade 9 French Immersion program and French First Language students below, approaching and meeting expectations.



Performance With and Without Accommodations

Figure 3.7
Percentage of grade 9 students who wrote the assessment with a mathematics accommodation below, approaching and meeting expectations.

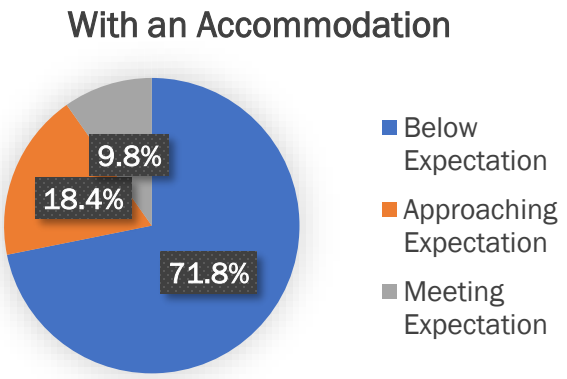
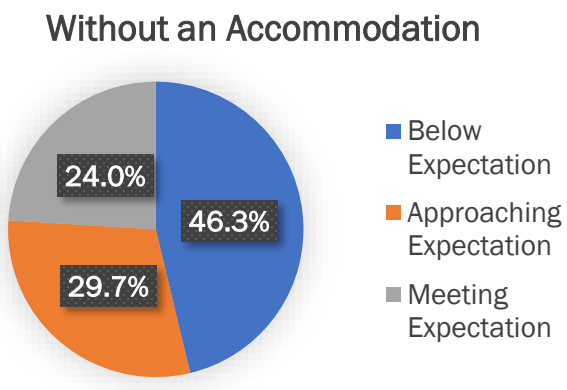


Figure 3.8
Percentage of grade 9 students who wrote the assessment without a mathematics accommodation below, approaching and meeting expectations.



Summary

The 2023 administration of the PRMA is the second year in a new assessment cycle and the first year for mathematics. As such, these results establish a baseline proficiency level for grade 3, 6, and 9 students. Considering the new format of this assessment, the results cannot be compared to past provincial level assessments.

The data collected from the PRMA will help inform policy development and identify areas of growth and challenges. With future administrations of the assessment, trend data analysis will also be possible. Teachers, administrators, school districts, and the Department of Education will use this data to develop strategies and initiatives to support and further enhance student learning.