

# Nova Scotia Assessments

## Item Description Report User Guide

### Background information

The Item Description Report for Nova Scotia Assessments provides background information about the assessment items. It is meant to help teachers identify patterns and trends in their school performance in relation to board and provincial performance, rather than to focus on the performance of individual items.

The report includes several pieces of information about each item on the assessment:

- genre/strand of the item,
- cognitive level,
- curriculum outcome(s) aligned with the item,
- description of the required tasks involved with each item, and
- percentage of students who got the item correct at the Province, Board, and School

The items have been grouped together by genre (reading) or by strand (mathematics). They are not presented in the same order as they were in the student assessment booklet.

Item complexity is divided in three cognitive levels that reflect the *cognitive demand* of an item. Cognitive demand describes the thinking processes required in order to answer the question correctly. Each cognitive level can represent a range of difficulty. For example, in reading, an easy literal question may ask students to find an explicit detail in a text and a more difficult literal question may ask students to connect explicit details in a text. In mathematics, an easy application item may ask students to find the next term in a pattern, such as 3, 7, 11, ... while a more challenging application item may ask them to use the pattern rule to determine the 50<sup>th</sup> term in that pattern.

### Interpreting the report

- Compare your school performance to the board and provincial performance on each item.
  - A higher percentage at the school compared to the board or province may indicate an area of relative strength.
  - A lower percentage at the school compared to the board or province may indicate an area that needs more attention.
- A low percentage at school, board, and province may indicate a more challenging item, i.e., an item intended to capture information at the high end of the range of student performance.
  - Each assessment includes a range of item difficulties and complexities in order to capture information on a wide range of student performance.
- Differences for individual items are to be expected. Performance on just one item can vary quite a bit, so it is better to look for patterns across items. This may indicate aspects of reading or mathematics that can inform future instruction.

#### Reading cognitive levels

- **Literal Comprehension** items require students to understand explicit information in the text.
- **Non-literal Comprehension** items require students to understand implicit information in the text such as inferences, connotative meanings, idioms, and figurative language (e.g., simile and metaphor).
- **Analysis** items require students to think critically about texts by analyzing, synthesizing, or evaluating the explicit and/or implicit information in the text.

#### Mathematics cognitive levels

- **Knowledge** items require students to recall or recognize information, names, definitions, or steps in a procedure.
- **Application/Comprehension** items require students to make connections, represent a situation in more than one way (translating between representations), or solve contextual problems.
- **Analysis** items require students to go beyond comprehension and application to higher order thinking skills, such as generalizations and non-routine problem-solving.

### Determining meaningful differences

- Each item reported in the Item Description Report includes percentages at the provincial, board, and school levels for students who responded correctly. These percentages can be used to compare school results but the number of students who participated at the school should be considered as contextual information.
- The Item Description Report now contains a column that compares school results on the assessment to the province by subtracting the provincial percentage from the school percentage (School % – Province %).
- The values in this column are highlighted with an arrow if the difference is considered meaningful based on the number of participants on the assessment at the given school (see below for **Guidelines on meaningful differences**).
  - An upward pointing green arrow ▲ represents a positive difference for the school on that item and identifies an area of strength.
  - A downward pointing red arrow ▼ represents a negative difference for the school on that item and identifies an area that may require attention.
- The smaller the number of students that participate, the more likely it is that a few students can have a large impact on the results for an item. For example, in schools where a small number of students participate, the performance of one year can be much different than the next year just due to class composition. For this reason, even medium or large differences in performance might not be significant. Therefore, it is best to use multiple sources of evidence (e.g., classroom assessment information) and look for trends over time in the schools.
- The smaller the difference in performance, the more likely the difference could be due to statistical variability. Even for schools with a large number of participants, a difference of 5% between the school and province may not be meaningful.

### Guidelines on meaningful differences

The following guidelines are used to identify meaningful differences based on the number of participants on an assessment in a school:

- Number of participants fewer than 10 students: differences of 40% or more are usually meaningful.
- Number of participants fewer than 20 students: differences of 25% or more are usually meaningful.
- Number of participants fewer than 50 students: differences of 20% or more are usually meaningful.
- Number of participants fewer than 100 students: differences of 15% or more are usually meaningful.
- Number of participants fewer than 200 students: differences of 10% or more are usually meaningful.
- Number of participants greater than 200 students or at the school board level: differences of 5% or more are usually meaningful.

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### Using the report

Even though meaningful differences are identified in the report, it is recommended to further evaluate your school's performance on the assessment. The following suggestions will support schools in gaining the full benefit of this Item Description Report.

- Identify trends/patterns over time in GCO/Strand, Cognitive Level and Outcomes rather than individual items. Items change over time and the order of appearance in the Item Description report varies from year to year.
- Schools can use this information as a starting point for digging deeper at the classroom level. Compare the identified areas on the Item Description Report to what you know about your students from other sources of evidence, such as on-going classroom assessments (conversations, observations and products), examining student work and PLC discussions.
- Questions to ignite brainstorming and discussion when examining this report with your staff:
  - What do you notice in the report? What stands out?
  - What patterns or trends do you notice as areas of strength?
  - What patterns or trends do you notice as areas that may require attention?
  - What further questions does the data raise?
  - How well do the results concur with other sources of information (i.e., classroom assessments, surveys, focus groups, PLC notes)?
  - What does the information mean in relation to our instructional practices?  
(The *Lessons Learned* documents may support teacher discussions around this question.)
  - How will we use this information to inform our instructional practices?
  - What are our next steps?
- Consulting the *Lessons Learned* document for each assessment will provide schools with identified provincial trends in the results over time, along with suggestions for next steps in classroom assessment and instruction.
  - The *Lessons Learned* documents for each mathematics assessment (grades 4, 6 and 8) can be located on the Documents tab for each assessment on the PLANS website at:  
<http://plans.ednet.ns.ca/nova-scotia-assessments>.
  - The *Lessons Learned* documents for each reading and writing assessment (grades 3, 6 and 8) can be located on the Documents tab for each assessment on the PLANS website at:  
<http://plans.ednet.ns.ca/nova-scotia-assessments>