

### 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 (level of complexity of the item),
- curriculum outcome(s) aligned with the item,
- description of the thinking process 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 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.
- The smaller your school, the more likely it is that a few students can have a large impact on the results for an item. For example, in a small school, the performance of a grade cohort one year can be much different than the next year just due to class composition. For this reason, in small schools, 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.
- The smaller the difference in performance, the more likely the difference could be due to statistical variability. Even for schools with large grade cohorts, a difference of 5% between the school and province may not be statistically significant.
- The following rules of thumb combine the grade cohort size of a school and the size of the percentage difference to help determine if a difference for an individual item is statistically significant:
  1. Very small school (around 10 students): differences of 40% or more are usually significant.
  2. Small school (around 20 students): differences of 25% or more are usually significant.
  3. Medium school (around 50 students): differences of 20% or more are usually significant.
  4. Large school (100–200 students): differences of 10% or more are usually significant.
  5. Very large schools (300+ students) or school boards: differences of 5% or more are usually significant.

#### Reading cognitive levels

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

## Using the report

- To identify trends/patterns in the data, a suggestion would be to highlight any items where the school performance indicates a relative area of strength in one colour and areas that may require more attention in another colour.
  - Suggestion: Start highlighting items of greatest difference (i.e. 20% or more) and continue with moderate differences (i.e. 10–20%) to see if trends occur.
  - As well, using the same process, schools can look for trends/patterns over time by examining the Item Description Reports for all assessment administration years (2012–2013, 2013–2014, and 2014–2015).
- Schools can use this information as a starting point for digging deeper at the classroom level. Compare the highlighted 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 of challenge?
  - 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, etc.)?
  - 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) will be available in March 2015 and will be located on the Documents tab for each assessment on the PLANS website at:  
<http://plans.ednet.ns.ca/nova-scotia-assessments>