

## Grade 6 Scientific Literacy: What the 2022-23 Provincial Assessment Revealed about Student Understanding

Provincial assessments are designed to discover what students understand about curricular outcomes and to identify the degree to which specific skills have been mastered at a given point in time. Assessment items, their correct responses and distractors are systematically constructed to pinpoint students' understandings and misconceptions. In addition to providing an overview of student performance at the provincial, district, and school level, the analysis of response patterns provided in this document has an application for classroom use.

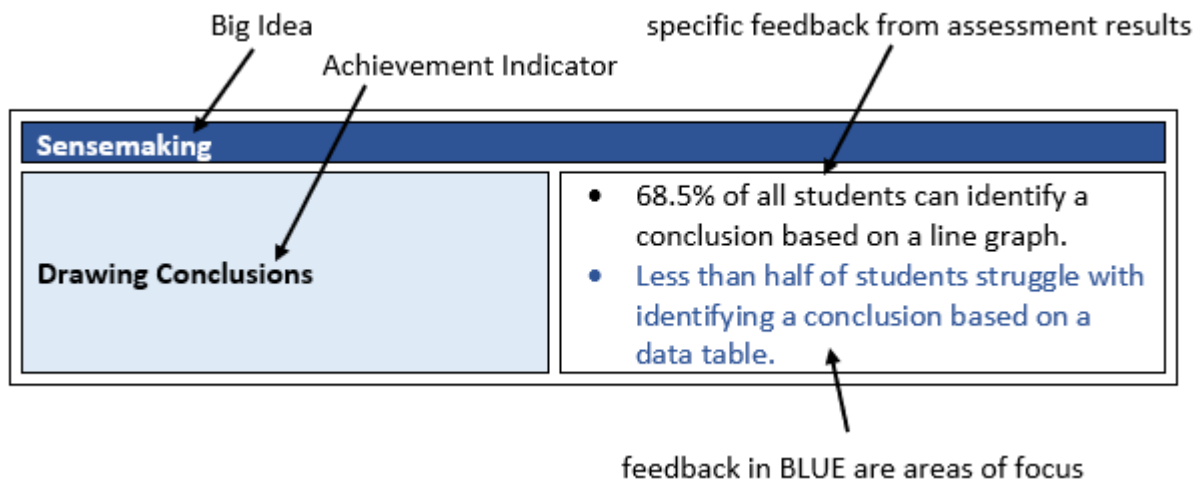
### How to use this feedback for your classroom

The statements in the feedback section reflect the collective understanding of a large number of students at this grade level. This may include some or many of your students.

**A checkpoint:** This information can be applied to the development of your formative assessments to help you identify whether any of your students are missing the highlighted concepts.

**Instructional design:** Given the widespread nature of the gaps identified and the fact that some of the skills involved would have been included in the curricula of previous years, this information could be of assistance with multigrade planning.

### Example:



In the example above, the first bullet reveals that 68.5% of students can identify a conclusion based on a line graph. The second bullet indicates a widespread misconception pertaining to the concept of a conclusion when it refers to a data table.

<b>Investigation</b>	
<b>Propose Testable Questions/Problems</b>	<ul style="list-style-type: none"> <li>• 94.1% of strong students can identify a testable question written in standard form about familiar topics.</li> <li>• Many students are able to identify a testable question when presented with both a diagram and a description of an experiment.</li> <li>• Many students struggle to identify a testable question based solely on a text-description of an experiment.</li> </ul>
<b>Identify and Describe Variables</b>	<ul style="list-style-type: none"> <li>• 63.1% of all students can identify a dependent or independent variable when given the definition for the terms.</li> <li>• More than half of all students struggle to identify a control variable when given the definition.</li> </ul>
<b>Fair Test</b>	<ul style="list-style-type: none"> <li>• 61.7% of students are able to identify aspects of a fair test.</li> <li>• Some students struggle with the parameters which can ensure a fair test.</li> </ul>
<b>Plan Investigations</b>	<ul style="list-style-type: none"> <li>• 79.9% of strong students can arrange a set of steps for a procedure into a logical order.</li> <li>• Most students can identify the next step for a straight-forward procedure.</li> <li>• Less than half of students struggle with finding the missing step in a procedure.</li> </ul>
<b>Appropriate Tools</b>	<ul style="list-style-type: none"> <li>• 83.35% of all students can select the appropriate scientific tool for a specific investigation.</li> <li>• Some students struggle to identify a stopwatch versus a digital clock for measuring time in an experiment.</li> </ul>
<b>Collect and Represent Data</b>	<ul style="list-style-type: none"> <li>• 57.7% of students can distinguish the difference between a Quantitative and Qualitative measurement, when provided with definitions.</li> <li>• Many students struggle to read the temperature on a thermometer.</li> <li>• Most students struggle to read a ruler when the item being measured does not start at 0.</li> </ul>

Sensemaking	
<b>Classify, Organize &amp; Display Data</b>	<ul style="list-style-type: none"><li>• 83.4% of all students can sort information from a Venn diagram into a table.</li><li>• 85.6% of all students can draw the correct columns on a bar graph.</li><li>• 71.3% of all students can identify classification rules for two sets of data.</li><li>• Many students struggled to give a proper title to a bar graph.</li></ul>
<b>Analyze Data</b>	<ul style="list-style-type: none"><li>• 65.96% of all students can successfully answer analysis-based items.</li><li>• Most students can make predictions based on a data trend.</li><li>• Most students can match a data table to a diagram of the represented information.</li></ul>
<b>Reliable Sources</b>	<ul style="list-style-type: none"><li>• 73.3% of all students can identify a reliable source for research purposes.</li></ul>
<b>Drawing Conclusions</b>	<ul style="list-style-type: none"><li>• 94.8% of strong students can identify a proper a conclusion when presented with a data table and explanation of an experiment.</li><li>• Many students struggle with selecting a conclusion when presented with an explanation of an experiment and/or a data table.</li></ul>

Responsible and Sustainable Application	
<b>Lab Safety</b>	<ul style="list-style-type: none"><li>• 75.8% of all students can identify items required for proper classroom lab safety.</li></ul>

