6th Grade Science — Performance Level Descriptors

**Interpretation of Data**

Students apply science knowledge, skills, and practices to locate, translate, infer, and extend from, and evaluate data and information in scientific graphs, tables, and diagrams of varying complexity.

A student performing at the Needs Support level:
- selects one piece of data from a simple data presentation.
- identifies features of a single table, graph, or diagram (e.g., axes, labels, units of measure).

A student performing at the Close level:
- selects one piece of data from a moderately complex data presentation.
- identifies features of a single table, graph, or diagram (e.g., axes, labels, units of measure).

A student performing at the Ready level:
- selects one piece of data from a complex data presentation.
- identifies features of a single table, graph, or diagram (e.g., axes, labels, units of measure).

A student performing at the Exceeding level:
- selects two or more pieces of data from a complex data presentation.
- identifies features of a moderately complex table, graph, or diagram (e.g., axes, labels, units of measure).

**Scientific Investigation**

Students apply science knowledge, skills, and practices to locate, translate, infer, and extend from, and modify those experiments.

A student performing at the Needs Support level:
- finds information in text that describes a simple experiment.
- identifies similarities and differences between experiments.
- determines which experiments utilized a given tool, method, or combination.

A student performing at the Close level:
- finds information in text that describes a moderately complex experiment.
- identifies similarities and differences between simple experiments.
- determines which simple experiments utilized a given tool, method, or combination of design.

A student performing at the Ready level:
- finds information in text that describes a complex experiment.
- identifies similarities and differences between moderately complex experiments.
- determines which moderately complex experiments utilized a given tool, method, or combination or design.

A student performing at the Exceeding level:
- identifies similarities and differences between complex experiments.
- determines which complex experiments utilized a given tool, method, or combination of design.

**Evaluation of Models, Inferences, and Experimental Results**

Students apply science knowledge, skills, and practices to evaluate the utility of scientific information and formulate conclusions and predictions based on that information.

A student performing at the Needs Support level:
- finds information in a simple theoretical model (a viewpoint proposed to explain scientific observations).
- identifies implications and assumptions in a simple theoretical model.
- determines which simple theoretical models present or imply certain information.

A student performing at the Close level:
- finds information in a moderately complex theoretical model (a viewpoint proposed to explain scientific observations).
- identifies implications and assumptions in a moderately complex theoretical model.
- determines which moderately complex theoretical models present or imply certain information.

A student performing at the Ready level:
- finds information in a complex theoretical model (a viewpoint proposed to explain scientific observations).
- identifies implications and assumptions in a complex theoretical model.
- determines which complex theoretical models present or imply certain information.

A student performing at the Exceeding level:
- identifies similarities and differences between complex theoretical models.
- determines which complex theoretical models support or weaken new information.
- determines which simple theoretical models support or contradict a hypothesis, prediction, or conclusion.

**Simple Data Presentations, Experiments, and Theoretical Models for the Middle School Grade Band**

Concepts/predicates encountered in a simple data presentation, experiment, or theoretical model: Concepts are likely to be familiar to, or readily understood by, middle school students regardless of their exposure to rigorous science instruction, such as density, volume, speed, and rates of change. Students are expected to understand the meaning of each term and its relationship to one another.

Components: A simple data presentation typically contains one experiment, a theoretical model, and one theoretical model.

**Moderate Complexity Data Presentations, Experiments, and Theoretical Models for the Middle School Grade Band**

Concepts/predicates encountered in a moderately complex data presentation, experiment, or theoretical model: Concepts are likely to be familiar to middle school students with some advanced scientific knowledge (such as density, volume, speed, and rates of change). Students are expected to understand the meaning of each term and its relationship to one another.

Components: A moderately complex data presentation typically contains one experiment, a theoretical model, and one theoretical model.

**Complex Data Presentations, Experiments, and Theoretical Models for the Middle School Grade Band**

Concepts/predicates encountered in a complex data presentation, experiment, or theoretical model: Concepts are likely to be familiar to middle school students with considerable scientific knowledge (such as density, volume, speed, and rates of change). Students are expected to understand the meaning of each term and its relationship to one another.

Components: A complex data presentation typically contains one experiment, a theoretical model, and one theoretical model.

*Some elementary school-level material is assessed in Grade 2. This allows students with diverse access to science instruction to demonstrate some skills, even when not ready for most middle school-level science content.