

## Kindergarten-8th Multi-Grade Level I Can Science Statements

The skills noted below can be learned and applied to the content areas for their respective grade level groupings. These skills can be assigned to the lessons in your personalized curriculum to demonstrate the following intellectual, reasoning, reflection, and research skills.

- Practice 1: I can ask questions and define problems.
- Practice 2: I can develop and use models.
- Practice 3: I can plan and carry out investigations.
- Practice 4: I can plan, analyze and interpret data.
- Practice 5: I can use mathematics and computational thinking.
- Practice 6: I can construct explanations and design solutions.
- Practice 7: I can engage in argument from evidence.
- Practice 8: I can obtain, evaluate and communicate information.

### Kindergarten-2nd Crosscutting Concepts:

- I can observe patterns in the world and use them to prompt questions or describe natural occurrences.
- I can recognize events have causes that are simple or complex.
- I can make predictions and conduct simple tests to understand events.
- I can demonstrate relative scales allow objects and events to be compared and described (e.g. bigger-smaller; hotter-colder; faster-slower).
- I can describe objects and organisms in terms of their parts.
- I can observe systems have parts that work together.
- I can understand that objects may break into smaller pieces, be put together into larger pieces or change shape.
- I can recognize that the shape of natural or human-designed objects is related to their function(s).
- I can understand and explain that some things stay the same while other things change. Change can be rapid or slow.

### Kindergarten-2nd Engineering Design:

- I Can Define: Ask questions, make observations, and gather information to define a problem that can be solved through engineering.
- I Can Develop Solutions: Use sketches, drawings, or models to develop possible solutions.
- I Can Optimize the Design: Gather and analyze data from tests, compare outcomes and engineering solutions.

### 3rd-5th Crosscutting Concepts:

- I can use similarities and differences in patterns to sort, classify and analyze natural occurrences and human-designed objects.
- I can identify cause and effect relationships and use to test and explain change.
- I can observe natural objects and occurrences that exist from the very small to the immensely large or from short to long time periods.
- I can describe a system in terms of its parts and their interactions.
- I can observe and explain that energy can be transferred in many ways and between objects. Matter cannot be destroyed; it flows and cycles.
- I can make observations and show different materials have different structures.
- I can investigate and demonstrate that some systems appear stable, but over long periods of time will eventually change.

#### 3rd-5th Engineering Design:

- I Can Define: Define a design problem that includes criteria for success and constraints.
- I Can Develop Solutions: Research, generate and compare multiple possible solutions to design problems.
- I Can Optimize the Design: Test and improve solutions to design problems using the results of simple tests, including failure points

#### 6th-8th Crosscutting Concepts:

- I can observe patterns on graphs, charts and images which provide information about natural and human-designed systems.
- I can make observations and explain how natural phenomena may have more than one cause.
- I can understand and demonstrate how models at various scales allow one to study natural phenomena that would otherwise be too small or too large.
- I can explain how models can be used to understand systems and interactions. I understand models are limited as they only represent certain aspects.
- I can investigate and illustrate how matter is conserved (not destroyed) in physical and chemical processes. Energy may take different forms (electric, thermal, motion).
- I can explain complex natural and designed structures can be visualized, modeled and used to determine how they function
- I can investigate and demonstrate that small changes in one part of a system may cause large changes in another part. Sudden events or gradual changes over time can disturb stability.

#### 6th-8th Engineering Design:

- I Can Define: Attend to precision of criteria and constraints and considerations likely to limit possible solutions.

- I Can Develop Solutions: Combine parts of different solutions to create new solutions.
- I Can Optimize the Design: Use systematic processes to iteratively test and refine a solution.