Grades K, 1, 2

Adopted 2013

Appendix G: Crosscutting Concepts

Patterns

1. Observe patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them. AG.1

1. Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence. K-2.AG.1.1

Cause and Effect: Mechanism and Prediction

2. Events have causes, sometimes simple, sometimes multifaceted. Deciphering causal relationships, and the mechanisms by which they are mediated, is a major activity of science and engineering. AG.2

1. Events have causes that generate observable patterns. K-2.AG.2.1

2. Simple tests can be designed to gather evidence to support or refute student ideas about causes. K-2.AG.2.2

Scale, Proportion, and Quantity

3. In considering phenomena, it is critical to recognize what is relevant at different size, time, and energy scales, and to recognize proportional relationships between different quantities as scales change. AG.3

1. Relative scales allow objects and events to be compared and described (e.g., bigger and smaller; hotter and colder; faster and slower). K-2.AG.3.1

2. Standard units are used to measure length. K-2.AG.3.2

Systems and System Models

4. A system is an organized group of related objects or components; models can be used for understanding and predicting the behavior of systems. AG.4

1. Objects and organisms can be described in terms of their parts. K-2.AG.4.1

2. Systems in the natural and designed world have parts that work together. K-2.AG.4.2

Energy and Matter: Flows, Cycles, and Conservation

5. Tracking energy and matter flows, into, out of, and within systems helps one understand their system's behavior. AG.5

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Objects may break into smaller pieces, be put together into larger pieces, or change shapes. K-2.AG.5.1

Structure and Function

6. The way an object is shaped or structured determines many of its properties and functions. AG.6

1. The shape and stability of structures of natural and designed objects are related to their function(s). K-2.AG.6.1

Stability and Change

7. For both designed and natural systems, conditions that affect stability and factors that control rates of change are critical elements to consider and understand. AG.7

1. Some things stay the same while other things change. K-2.AG.7.1

2. Things may change slowly or rapidly. K-2.AG.7.2