**Crosscutting Concepts**

Adapted from: A Framework for K-12 Education, and NGSS

The seven crosscutting concepts that allow us to connect different arenas of science, also cut across other academic content areas: Math, social studies, reading and writing.

1. ***Patterns****.* Observed patterns of forms and events guide organization and classification.

2. ***Cause and effect****: Mechanism and explanation*. Events have causes, sometimes simple, sometimes multifaceted that can then be tested and used to predict and explain events in new contexts.

3. ***Scale, proportion, and quantity****.* Recognize what is relevant at different measures of size, time, and energy and how changes affect a system’s structure or performance.

4. ***Systems and system models.***Defining the system under study provides tools for understanding and testing ideas.

5. ***Energy and matter****: Flows, cycles, and conservation.* Tracking fluxes of energy and matter into, out of, and within systems helps one understand the systems’ possibilities and limitations.

6. ***Structure and function.***The way in which an object or living thing is shaped and its substructure determine many of its properties and functions.

7. ***Stability and change****.* conditions of stability and determinants of rates of change are critical elements.