

Crosscutting Concepts

1. **Patterns:** Repeated arrangement or sequence of events. Patterns can be found across scientific disciplines. The organization that results from patterns leads to classification.
2. **Cause and effect:** Science seeks to study events or the evidence of events to determine root causes. The event (effect) can be linked to a single cause or group of causes.
3. **Scale, proportion, and quantity:** Various scale, proportions, and quantities can have different effects on a system's structure and or function.
4. **Systems and system models:** Observing particular systems may be out of the scope of reality. Models allow us to create a replica of the system in order to gain a deeper understanding.
5. **Energy and matter:** Studying the flow, cycle, and conservation of matter and energy within a system provides insight to the function of the system and the limitations that exist as a result of the energy and matter inputs and outputs.
6. **Structure and function:** The function of a system or object can be traced back to its structure. Studying structure gives us a deeper understanding of the function. In science, we study adaptations to structure to see what effects it has on the function.
7. **Stability and change:** In science, we study the stability of systems, and the factors that cause a system to become unstable. Studying rates of change are important aspect of science.