

## SCIENCE LONG TERM TRANSFER GOALS

Students will be able to independently use their learning to:

1. Approach science as a reliable and tentative way of knowing and explaining the natural world.
2. Weigh evidence and use scientific approaches to ask questions, investigate, and make informed decisions.
3. Make and use observations to analyze relationships and patterns in order to explain phenomena, develop models, and make predictions.
4. Evaluate systems, in order to connect how form determines function and how any change to one component affects the entire system.
5. Explain how the natural and designed worlds are interrelated and the application of scientific knowledge and technology can have beneficial, detrimental, or unintended consequences.

## UNIFYING THEMES BIG IDEAS AND ESSENTIAL QUESTIONS

Big Ideas	Essential Questions
Big Idea 1: Patterns: Observed patterns of forms and events guide organization and classification and prompt questions about relationships and the factors that influence them.	<i>How are patterns used to predict the outcome of an event or form?</i>
Big Idea 2: Cause and Effect: Causal relationships and their mechanisms can be tested and used to predict and explain events.	<i>In what ways can cause and effect be used to test contexts, and predict or explain events?</i>
Big Idea 3: Scale, Proportion, and Quantity: Changes in scale, proportion, and quantity affect a system's structure and/or performance.	<i>How do changes in structure and performance affect a system?</i>
Big Idea 4: Systems and System Models: Scientists develop and use system models to represent current understandings, aid in developing questions and experiments, and communicate ideas to others.	<i>How and why do scientists develop and use models?</i>
Big Idea 5: Energy and Matter (flows, cycles, and conservation): The flow of energy and matter into, out of, and within systems can be tracked to understand the systems' possibilities and limitations.	<i>How does the flow of energy contribute to the functioning of a system?</i>
Big Idea 6: Structure and Function: The way in which an object or living thing is shaped determines many of its properties and functions.	<i>How is form related to function?</i>
Big Idea 7: Stability and Change: For natural and built systems alike, conditions of stability and determinants of rates of change or evolution of a system are critical elements of study.	<i>What is the importance of stability and/or change in a system?</i>