Scientific Inquiry (PS1.1)

Describe how a testable hypothesis may need to be revised to guide a scientific investigation.
Scientific Inquiry (PS1.2)

Design and implement an experiment, including appropriate use of tools and techniques to organize, analyze, and validate data.
Scientific Inquiry (PS1.3)

Defend and support conclusions, explanations, and arguments based on logic, scientific knowledge, evidence from data.
Scientific Inquiry (PS1.4)

Determine the connection(s) among hypothesis, scientific evidence, and conclusions.
Scientific Inquiry (PS1.5)

Communicate the components of a scientific investigation, using appropriate techniques.
Scientific Inquiry (PS1.6)

Engage in and explain the importance of peer review in science.
Scientific Knowledge (PS1.7)

Revise, as needed, conclusions and explanations based on new evidence.
Scientific Knowledge (PS1.8)

Describe the importance of ethics and integrity in scientific investigation.
Scientific Knowledge (PS1.9)

Explain how scientific explanations must meet a set of established criteria to be considered valid.
Science, Technology, and Society (PS2.1)

Explain how scientific advancements and emerging technology have influenced society.
Science, Technology, and Society (PS2.2)

Compare the risks and benefits of potential solutions to technological issues.
Energy and its Transformation (PS6.1)

Describe endothermic and exothermic chemical reactions.
Energy and its Transformation (PS6.2)

Explain how the law of conservation of energy is applied to various systems.
Energy and its Transformation (PS6.3)

Describe different examples of the concept of entropy.
Energy and its Transformation (PS6.4)

Explain that changes in thermal energy can lead to a phase change of matter.
Waves (PS6.5)

Compare transverse and longitudinal waves and their properties.
Waves (PS6.6)

Explain and provide examples of electromagnetic radiation and sound, using a wave model.
Nature of Matter (PS6.7)

Explain how elements are arranged in the periodic table and describe trends among elemental properties.
Nature of Matter (PS6.8)

Describe interactions among molecules.
Nature of Matter (PS6.9)

Describe the factors that affect the rate of chemical reactions.
Nature of Matter (PS6.10)

Explain how atoms bond using valence electrons.
Nature of Matter (PS6.11)

Describe a variety of chemical reactions.
Nature of Matter (PS6.12)

Describe nuclear reactions and how they produce energy.
Forces and Motion (PS7.1)

Apply the laws of motion to determine the affects of forces on the linear motion of objects.
Forces and Motion (PS7.2)

Use vectors to explain force and motion.
Forces of the Universe (PS7.3)

Explain the relationship among the gravitational force, the mass of the objects, and the distance between objects.
Forces of the Universe (PS7.4)

Explain the magnetic and electric forces in the universe.