



Heart of the Matter Content Standards

Grade One

Physical Sciences

Nature of Matter

1. Classify objects according to the materials they are made of and their physical properties.
2. Investigate that water can change from liquid to solid or solid to liquid.
3. Explore and observe that things can be done to materials to change their properties (e.g., heating, freezing, mixing, cutting, wetting, dissolving, bending, and exposing to light.)
4. Explore changes that greatly change the properties of an object (e.g., burning paper) and changes that leave the properties largely unchanged (e.g., tearing paper.)

Scientific Inquiry

Doing Scientific Inquiry

1. Ask "what happens when" questions.
2. Explore and pursue student-oriented "what happens when" questions.
5. Create individual conclusions about group findings.

Scientific Ways of Knowing

Nature of Science

2. Demonstrate good explanations based on evidence from investigations and observations.

Grade Two

Scientific Inquiry

1. Ask "how can I/we" questions.
2. Ask "how do you know" questions (not "why" questions) in appropriate situations and attempt to give reasonable answers when others ask questions.
3. Explore and pursue student-generated "how" questions.

Grade Four

Physical Sciences

Nature of Matter

1. Identify characteristics of a simple physical change (e.g., heating or cooling can change water from one state to another and the change is reversible.)
2. Identify characteristics of a simple chemical change. When a new material is made by combining two or more materials, it has chemical

properties that are different from the original materials (e.g., burning paper, vinegar, and baking soda.)

3. Describe objects by the properties of the materials from which they are made and that these properties can be used to separate or sort a group of objects (e.g., paper, glass, plastic, and metal.)

4. Explain that matter has different states (e.g., solid, liquid, gas, plasma) and that each state has distinct physical properties.

Grade Six

Physical Sciences

Nature of Matter

2. Describe that in a chemical change new substances are formed with different properties than the original substance (e.g., rusting, burning.)

3. Describe that in a physical change (e.g., state, shape and size) the chemical properties of a substance remain unchanged.

4. Describe that chemical and physical changes occur all around us (e.g., in the human body, cooking, and industry.)

Grade Seven

Physical Sciences

Nature of Matter

1. Investigate how matter can change forms but the total amount of matter remains constant.