Physical Changes and States of Matter- One
3rd Grade
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Benchmark:

3rd Grade SLC 11-Identify characteristics of a simple physical change.

Students will identify a physical change as a change in size shape or state of matter. Students will demonstrate an understanding that the water cycle includes when matter evaporates and condenses.

Objectives:

Students will be able to identify physical changes and the three states of matter.

Materials:

- Chalk
- Petri dish
- Ice cube
- Clear Cup or Beaker
- Paper
- Clay
- Scissors
- Pencil
- Pencil sharpener

Initial Demonstration:

Take a piece of chalk and ask the students to observe it. What is it right now? Now break the chalk in two pieces. What kind of thing is in the teacher’s hands now? Is it still chalk? How has it changed? Can it still be used to write on the chalk board? What if it is broken a second time?

Target Observation:

- The chalk broke into two separate pieces
- The new pieces had a different shape and size than the original piece
- Both new pieces were still chalk.
**Target Model:**

- When matter (that is to say stuff) changes its shape or size, it is still the same kind of stuff. We call this a **physical change**.

**Procedure:**

A volunteer from the class will be asked to cause a *physical change* to a piece of paper. The term *physical change* should be defined. The students should explore other types of physical changes they know, and see if their observations hold. They can test their theories on a block of clay, and a pencil (by sharpening it).

The demonstrator will place an ice cube in a petri dish. The students will be asked to identify the object, and tell what it is made of (water). The students will make inferences about what will happen to the ice cube (i.e. it will melt), and if it is still the same substance (water).

The demonstrator will fill a clear cup with water, and ask the students what will happen to the water if it is left out over night. The students might say it will disappear, or go into the air- this is called **evaporation**. The water level in the cup should be measured, and the cup should be left out over night. The next day, measure the water level. Where did the water go?

**Target Revised Model:**

- The class should conclude that water exists in at least two different **states**, **solid** (ice) and **liquid** (water).
- Water can evaporate (go into the air), where it is a **gas** (water vapor).
- Substances that undergo physical changes are still composed of the same materials, rearranged.
- A change in state like melting or evaporation is a physical change because the substance is still made of the same material.

**Summary:**

A physical change is a change in an object's shape, size, or state. The object is still made of the same material (stuff). Melting and evaporation are examples of changes in state.