

Not All Plastics Are Created Equal

Standard*: D.4.1: Understanding that objects are made of more than one substance, by observing, describing, and measuring the properties of earth materials, including properties of size, weight, shape, color, temperature, and the ability to react with other substances.

D.4.2: Group and or classify objects and substances based on the properties of earth materials.

Objective: Students will learn that chemical composition variations result in a variety of plastics.

Materials: Samples of the following types of plastics:

- Resilient: Sand Shovel Vinyl: Beach Ball
- Kevlar: Fireman Helmet Polyurethane: Knee Pads
- Acrylic: Pillow PETE: Soda Bottle
- Nylon: Toothbrush
- Polycarbonate: CD
- Polypropylene: Sweater
- Polystyrene & Fiberglass: Bike Helmet
- Tub of Water

Activity: Students to compare and contrast the various types of plastics. Have students make a chart to document the testing of each type of plastic with the following categories:

- Buoyancy: Note position of plastic item in the water by placing the object into the tub of water.
- Flexibility: Rate on a scale from one to three how flexible the object is.
- Other: Student observation choice.

Assessment: Select three of the plastic samples and state one reason why the specific plastic was used for the job it does. For example: Why are toothbrushes made of nylon and not vinyl?

**Wisconsin Model Academic Standards*