

Project 25

State of the Brick

Objective: Child will understand the basics of conservation of matter.

Essential Question(s): What happens when matter changes? Is anything lost? Does its weight change?

Special Materials: a scale and/or a laser thermometer, pencil and paper for notes

Bricks Required: 6x8 plates; 1x2, 1x4, & 1x6 bricks

Project Structure:

Engage/Explain:

1. Ask child what they know regarding what happens when matter is heated or cooled or mixed together.
 - a. Child may already be familiar with water breaking a jar when it's frozen (cooled) or the chemical reaction of baking soda and vinegar.
2. Explain that the total weight of the matter never changes in any of these situations.

Explore:

1. Explain that child will see how that works today by building with bricks representing the molecules.
2. Give child plates and bricks to build a hollow box.
 - a. Size is not too important, but probably no more than five bricks high;
 - b. The walls should not have any gaps or holes.
3. When child is finished, ask them about the properties of the box.
 - a. Child should weigh, measure, and take the temperature of their creation, taking notes on all the measurements.
4. Child then disassembles their box and reassembles it into a different-shaped box, still with no gaps.
 - a. Child weighs, measures, and takes the temperature again. Child should notice that the only measurement that changed significantly is the size.
5. Child then puts their box in ice water and the sun, and then takes the temperature and weighs it again, taking notes on all the measurements.

Elaborate:

1. Ask child how rebuilding the box is similar to what happens with water when it turns to steam and then condenses back to water.
 - a. Extend the idea to other types of materials as well.

