

Icky Squishy Matter (K-2nd grades) Post-Visit Activities

We hope that you enjoyed your visit to the Children's Science Explorium!

To help reinforce the concepts covered during today's field trip, we have prepared the following wrap-up activities for you to incorporate into the classroom.

Vocabulary List and Student Definitions (early elementary level):

- **Matter:** the material substance of the universe that has mass and occupies space
- **Atom:** particle of matter; building block of the universe
- **Solid:** state of matter that holds its own shape
- **Liquid:** state of matter that takes the shape of its container
- **Gas:** state of matter that is invisible and has the ability to expand indefinitely
- **Chemistry:** area of science that studies matter and the reactions of matter

Slime Wrap Up:

1. Teacher Information:

- a. Slime is a *non-Newtonian fluid*. It has a high viscosity (resistance to flow). If something acts on it with a small amount of force (gently pushing with your finger), it won't offer as much resistance as if would if a greater force acted upon it (jab it hard). Non-Newtonian fluids get their name because they do not fit into Newton's laws of how true liquids behave. Quicksand, gelatin, and ketchup are all non-Newtonian fluids.
- b. Slime is an example of a polymer. Polymers are strands of large molecules. Polymers make up our skin, hair, clothing, wood, and all plastics. Polymers are very stretchy and flexible. Polymers are very large molecules. Some of the bigger polymers are visible to the naked eye. Polymer strands are strengthened by cross-linking. In cross-linking, strands of polymers bond together. Think of a line of children holding hands to make a polymer chain, when along comes another chain of children. The two polymers cross-link when a child (other than the children at either end) from the first line is connected to a child from the other line. Borax cross-links the glue molecules in our slime.

Student Activities:

1. Create another gooey concoction with the following recipe for Ooblek:
 - a. Place newspaper or butcher paper on table tops.
 - b. Provide each student with a paper cup and craft stick.
 - c. Instruct students to always keep one hand on the cup (to avoid spills.)
 - d. Fill cups $\frac{1}{4}$ full of cornstarch (This can be done prior to class).
 - e. Add water, while students stir.
 - f. Add 1-2 drops food coloring, while students continue to stir (or add the drops to the water prior to pouring into cups).
 - g. Allow students to play with their ooblek, while making observations.
 - h. This concoction will clean easily as it quickly dissolves with water.
 - i. Discard into the garbage and have students rinse their hands at a sink.
 - j. This is another example of a non-Newtonian fluid.

2. Scent Balloons

- a. Add a drop of scented extract or oil to a small balloon. Blow up the balloon and clip shut with a clothes pin.
- b. Repeat the above step so that there are multiple balloons with different scents.
- c. Challenge students to use their sense of smell (and practice their wafting technique) to identify the scent from each balloon.
- d. This is to demonstrate the presence of a gas as the odors fill the room.
- e. Extracts can be purchased at the grocery store – vanilla, lemon, orange, mint, root beer, cherry, etc.