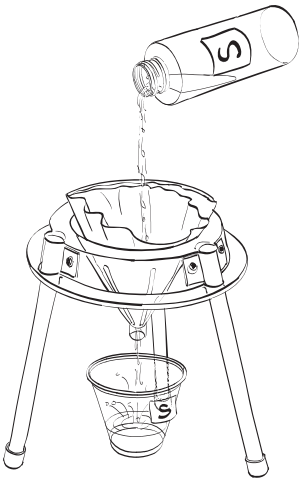
LETTER TO PARENTS

Cut here and paste onto school letterhead before making copies.

SCIENCE NEWS

Dear Parents,



Our class is beginning a new science unit, the **FOSS Mixtures and Solutions Module.** We will be studying basic concepts in chemistry, finding out how materials interact with each other. Children will learn what happens when simple materials, like gravel, salt, and water, are put together. They will also learn techniques for separating the resulting mixtures and solutions. As our studies continue, we will investigate combinations of materials, like baking soda and calcium chloride (the salt used to melt ice on roads), that react when mixed, producing new products, like chalk, carbon-dioxide gas, and table salt. These are exciting discoveries.

The U.S. Consumer Products Safety Commission (CPSC) requires the following label to be on student sheets associated with the use of these chemicals in the FOSS investigations: calcium chloride, citric acid, diatomaceous earth, Epsom salts, and kosher salt. It is a reminder to the students to exercise particular safety precautions when working with materials in the classroom.

WARNING — This set contains chemicals that may be harmful if misused. Read cautions on individual containers carefully. Not to be used by children except under adult supervision.

You can bring chemistry to life at home by exploring familiar household materials in a scientific way. Some of the interesting chemicals you may have at hand include baking soda, baking powder, alum, table salt, Epsom salts, flour, sugar, cornstarch, and vinegar. Add to these a few pieces of "laboratory equipment" such as jars, margarine tubs, plastic cups, and spoons, and you are ready to extend the classroom experiences into your home. A reminder: just as we do at school, you and your child should review and follow important safety procedures, even when working with the most familiar materials.

- Have a plan before starting an investigation.
- Avoid skin contact with experimental materials, and clean up spills immediately.
- Rinse with water if materials contact skin, eyes, or clothes, and wash hands after completing experiments.
- Never taste the experiments.

Watch for the home/school connection sheets I will be sending home with your child. These suggest ways for the whole family to investigate interesting aspects of chemistry.

We are looking forward to many weeks of exciting investigations with mixtures and solutions. If you have any questions or comments, or have expertise you would like to share with the class, please drop me a note.

HOME/SCHOOL CONNECTION

INVESTIGATION 1: SEPARATING MIXTURES

Make a mixture known as oobleck.

Materials

1 Mixing bowl
1 Spoon
1 Measuring cup
- Cornstarch
- Water

Directions

1. Put about 1 cup of cornstarch in the mixing bowl.
2. *Slowly* add water to make a mixture, stirring as you go.
3. When the starch is all wet, it will turn into oobleck.

Things to find out

Explore the properties of oobleck.

- Is it a solid or a liquid?
- What happens when you place solids, like coins or spoons, on the surface?
- What happens when you try to push your hand gently into the oobleck? When you try to push your hand hard and fast into the oobleck?
- Pick up a handful of oobleck. Can you hold it?
- Can you cut a ribbon of oobleck with scissors?
- What happens to the properties of oobleck when you change the amounts of the two ingredients in the mixture? More water? More cornstarch?

NOTE: If you want to keep oobleck to work with it another day, store it in a covered container in the refrigerator.

HOME/SCHOOL CONNECTION

INVESTIGATION 2: REACHING SATURATION

You can make your own play putty right at home. Here's what you will need.

Materials

20 ml White household glue (Colored glue won't work.)
15 ml Borax
• Water
1 Measuring cup
1 Plastic bag
1 Set of measuring spoons
• Food coloring
2 Plastic cups or small jars (Baby-food jars work great.)

Directions

1. Mix 15 ml (1 tablespoon) of borax in a cup or jar with enough water to dissolve it (about 40–50 ml). This will make a saturated solution.
2. In a separate plastic cup, mix 20 ml (4 teaspoons) of white glue with 5 ml (1 teaspoon) of water and a few drops of food coloring.
3. Add 5 ml of the saturated borax solution to the cup of glue.
4. Mix the mixture for a few minutes and watch what happens.
5. Now test your play putty for stretching, bouncing, newsprint transfers, and so forth. How long will it stretch? How high will it bounce? Record your observations and bring them to class.
6. Store the putty in a plastic bag.

HOME/SCHOOL CONNECTION

INVESTIGATION 3: FIZZ QUIZ

Baking soda (sodium bicarbonate—$NaHCO_3$) reacts with acid. One of the products is carbon dioxide (CO_2). You can use a baking-soda solution to test unknown liquids to see if they are acids. If CO_2 bubbles form when you mix the two solutions, the unknown probably contains an acid.

Materials

- Baking soda

1 Tablespoon

1 Measuring cup

- Water
- Unknown liquids

1 Small glass for testing

1 Spoon

Directions

1. Put 1 heaping tablespoon of baking soda in the measuring cup.
2. Add water to the 1-cup level. Stir to dissolve the soda.
3. Put a small amount of the baking-soda solution in a glass.
4. Add an equal amount of unknown solution. Record your observations.

Things to try

Fruit juices (particularly citrus)

Vinegar

Vitamin C dissolved in water

Coffee

Soda drinks

Unknown	Observations