

# In the Mix



## SUMMARY OF CLASSROOM LEARNING

Young children spend a lot of time sorting objects by hand. However, tools can also be used to separate mixtures. In this lesson, students explored how knowledge of the properties of objects (mainly size) can be useful for separating mixtures. Students cooperated as engineers to solve a real-world problem. Given a container filled with water mixed with soil, Styrofoam, pebbles, and leaves, students used a variety of filtering tools to create a cleaner water sample.

## OBJECTIVES

Students were able to:

- use tools to sort objects based on properties.
- work in teams to develop a solution to a technology problem.

## BACKGROUND INFORMATION

The world is made of matter. Young children often love to explore matter by combining and separating objects. Mixing up concoctions in a pretend kitchen or sifting sand and shells at the beach are just two examples. When matter is combined to make a mixture, it can be separated using physical means. From oil spills to the need for clean drinking water, scientists are constantly trying to find creative ways to separate mixtures.

## HOME ACTIVITY

Your young scientist has been learning about properties of materials and how they can be mixed and separated. As a family, you will predict what will happen when salt and warm water are mixed together. Then you will test your predictions to determine the results.

## MATERIALS

- Shallow bowl or container
- 2 cups of warm water
- 1 tablespoon of salt
- Spoon
- An area of direct sunlight to set the mixture

## VOCABULARY

- **Physical properties:** characteristics that can be observed, like appearance, texture, color, size, mass, and volume.
- **Mixture:** two or more substances joined together.
- **Separate:** to set apart or take apart.

## THOUGHT/CONVERSATION STARTERS

- What are the physical properties of salt?
- What are the physical properties of water?
- What happens to salt if it is placed in water?

## STEPS

1. Gather your materials.
2. Put 2 cups of warm water in the shallow bowl or container.
3. Pour 1 tablespoon of salt into the warm water and stir.
4. Discuss what you observe in the **mixture**.
5. Set the bowl or container of salt and water in the direct sunlight.
6. Allow the bowl to sit for several hours.
7. Observe and discuss what happened to the **mixture**.
8. Discuss how the salt dissolved in the warm water, and how the water evaporated and the salt **separated** from the water when it was placed in the sunlight.
9. How did the **physical properties** of the warm water and the salt change throughout this activity?

## DOCUMENT THE LEARNING IDEA

- Write a summary of how the experiment went. Include your predictions as well as the results. Were your predictions correct?
- Take pictures or draw pictures of your family completing different steps of the activity. Send them to school with your young scientist to share with their class.

## CONTINUE MAKING CONNECTIONS

Let's find mixtures! Search for everyday examples around the house where substances are combined (mixed) and/or separated and record these examples as a list (e.g. separating pasta and water when cooking, combining drink mixes with water, air and water filters, etc.). Send the list to school with your young scientist to share and compare with their classmates.