

Mixtures and Solutions



National Science Foundation
WHERE DISCOVERIES BEGIN

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Dear Family,

Your child is learning about mixtures and solutions and what happens to each of the ingredients' physical properties. The class is also discussing topics such as boiling points and melting points.

Your child is learning many new vocabulary words that describe mixtures and solutions. Help your child make these words a part of his or her own vocabulary by finding ways to use them in everyday conversations.

WORD

DEFINITION

measure	to find out the size or amount of something
mixture	a collection of materials in which the materials do not join together
ingredients	one of the parts that make up a mixture or combination
solution	a type of mixture in which the ingredients are thoroughly mixed together
dissolve	to mix thoroughly with a liquid, such as salt dissolves in water
substance	synonym for matter, something that has mass and takes up space, the material something is made of
boiling point	the temperature at which a substance begins to turn to a gas (The boiling point of water is 100° C)
freezing point	the temperature at which a substance begins to turn from a liquid to a solid
melting point	the temperature at which a substance begins to turn from a solid to a liquid

The following pages include activities that you and your child can do together. By participating in your child's education, you will help to bring the learning home.

Fun Fact

Initially, Silly Putty® was a novelty item marketed toward adults. In 1955, the market for the item changed, and Silly Putty® became a popular toy among kids between the ages of 6 and 12.

Literacy and Art

Draw a picture of a solution in each bottle.

Label each solution.



Check out these online games to have more fun with Science:

<http://www.harcourtschool.com/activity/mixture/mixture.html>

http://www.quia.com/rr/38085.html?AP_rand=1979115892

Helper's Signature _____

Helpers, please rate the activities in this booklet:

1-poor 2-needs improvement 3-good 4-excellent
(Please circle one number on each line.)

My child's performance on these activities was: 1 2 3 4

The quality of these activities was: 1 2 3 4

Once you have completed all the activities and experiments, complete this section, cut along the dotted line, and return it to your teacher.

Student's Name: _____ on _____

I worked with my _____ (ex: mom, aunt, brother, guardian) on these projects.

Family Science Activity

Center Stage

Discover the secret colors hidden in a black marker!

Materials:

- ◆ white paper coffee filter
- ◆ black marker (not permanent)
- ◆ saucer or small plate
- ◆ scissors
- ◆ water



Steps:

- a. Cut a circle out of the coffee filter. (It doesn't have to be a perfect circle, just a round shape that's about as big as your spread-out hand.)
- b. Use your marker to draw a black spot in the center.
- c. Put the circle on a saucer, and put a few drops of water on the spot. In a few minutes you'll see rings of color that go out from the center of the circle to the edges.

Talk About It

Most nonpermanent markers use inks that are made of colored pigments and water. When the dried pigments dissolve in water, they separate.

In this experiment, you're using a technique called chromatography. The name means color writing. There are many different types of chromatography. In all of them, a gas or liquid (like the water in your experiment) flows through a stationary substance (like your coffee filter). Since different ingredients in a mixture are carried along at different rates, they end up in different places.

Biochemists use chromatography to determine things such as the ingredients that make up a flavor or scent and to analyze the components of pollutants.