



## Share with Your Students

### Solubility

1. Ask: **What happens when you add drink mix to water?** (*The mix seems to disappear into the liquid.*) Explain that the drink mix dissolves in the water. Point out that dissolving involves breaking the particles of a material down into smaller pieces and spreading them out evenly throughout the material they are dissolved in. Explain that this mixture of particles dissolved in another material is called a solution.
2. Ask: **What would happen if you put a rock and a chunk of salt the same size into water?** (*The salt would dissolve, but the rock would not.*) Review the definition of solubility. Point out that if a substance has high solubility in water, it seems to disappear when it is added to water. Substances with low solubility remain solid or turn the water cloudy.

## Investigate 2

Name \_\_\_\_\_ Date \_\_\_\_\_

**Solubility in Water** STUDENT RESOURCE 1.3  
ACTIVITY SHEET

Record your predictions and observations in the table. Sample data

Substance	Solubility Prediction	Solubility Observation	Solubility (High or Low)
Baking soda	Answers will vary.	It disappears into the liquid.	High
Cornstarch	Answers will vary.	A solid floats on top of the liquid.	Low
Flour	Answers will vary.	A solid floats on top of the liquid.	Low
Salt	Answers will vary.	It disappears into the liquid.	High
Sugar	Answers will vary.	It disappears into the liquid.	High

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Student Resource 1.3 (p. 14)

## Solubility in Water



20 minutes



Small Groups

### Objectives

- Students try to dissolve five different substances in water.
- Students determine the relative solubility of the substances.

### Materials

*For each group*

- 2 \*magnifiers
- paper, white
- 5 plastic cups
- 5 plastic spoons

*For the class*

- 1 box baking soda
- 1 box cornstarch
- 1 bag flour
- 1 cnt. salt
- 1 bag \*sugar, granulated
- \*water, room temperature
- \*Not provided in kit*

### Student Resource

- 1.3 *Solubility in Water*

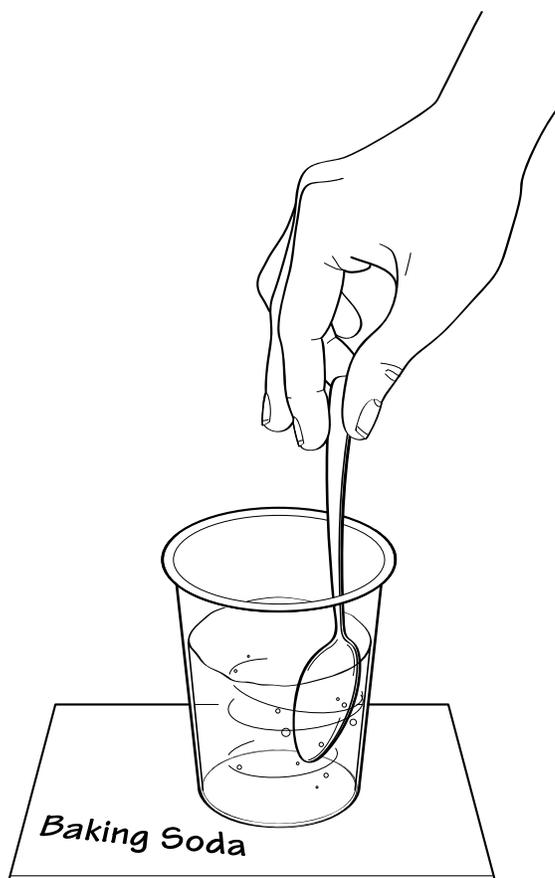
### Inquiry Focus

- Record Data

### In Advance

Cut white paper into six equal-sized cards for each group.

## Solubility in Water (continued)



▲ Dissolving the substances in water



### Teaching Tip

**Step 4:** Have students set their cups on the labeled index cards so the substances remain identified.

### 1. Distribute the Student Resource.

Distribute copies of Student Resource 1.3, *Solubility in Water*, and the group materials to students.

### 2. Students collect samples to test.

Have students label each piece of paper with the name of a material they will test. Have a student volunteer go around the class and place a spoonful of each material on the paper for that material for each group.

### 3. Students examine the different substances.

Have students use the magnifier to examine each of the substances. Have them predict the solubility of each and record their predictions on the Resource page.

### 4. Students dissolve the substances.

Have students add water to each cup until each cup is about two-thirds full. Have them add each material to a cup, place the cup on the paper labeled for that material and stir it for three minutes. After stirring, let it stand for three more minutes.

### 5. Students compare solubility.

Have students observe the mixtures in the cups and use their observations to fill in the last two columns of the table on the Resource page.

### 6. Discuss the Resource page.

When students have completed the Resource page, discuss the answers. Ask: **Which substances dissolved in water?** (*baking soda, salt, and sugar*) **Did the materials with high solubility have any other properties in common?** (*They appear to be more crystalline and less powdery.*) Point out that, generally speaking, more powdery substances are less soluble than crystalline substances.



### Assessment

Ask: **What kinds of substances tend to be soluble in water?** (*crystalline substances*)