

# HOME/SCHOOL CONNECTION

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## Investigation 4: Mixtures

### How does temperature affect how much sugar will dissolve in water?

#### Materials

- Sugar 3 Clear containers
- Room-temperature water 1 Measuring spoon (5 mL or teaspoon)
- Ice water 1 Measuring cup
- Hot tap water (not boiling) 1 Mixing spoon

#### Procedure

1. Measure 100 mL (1/2 cup) room-temperature water into one clear container.
2. Measure one level 5 mL spoon (1 teaspoon) of sugar, and put it into the water.
3. Use the mixing spoon to mix the sugar until it has all dissolved. (How do you know it has all dissolved?)
4. Continue to add and mix spoonfuls of sugar until no more sugar dissolves (when you start to see non-dissolved sugar on the bottom of the pan).
5. Record your data in the table below.
6. Predict how many spoonfuls of sugar will dissolve in ice water and in hot water. (Do you think there will be a difference? Why?)
7. Repeat Steps 1–5, using ice water, and then using hot water.
8. In the last column of the table, record the difference, if any, in number of spoonfuls of sugar when mixed with water at different temperatures.
9. Answer the questions below the table.

Water temperature	Prediction (spoonfuls of sugar)	Actual (spoonfuls of sugar)	Difference (compared to room- temperature water)
Room temperature			
Ice water			
Hot water			

How did the amount of sugar you could dissolve change when you used different temperatures of water?

What is the relationship between water temperature and amount of sugar that will dissolve?