

Name \_\_\_\_\_

Period \_\_\_\_\_ Date \_\_\_\_\_

## MIXING WATER

### Question

If you mixed equal volumes of 50°C hot water and 10°C cold water, what do you think the temperature of the mixture would be?

### Prediction

Predict the temperature of the mixture. \_\_\_\_\_

### Reasoning

Explain the thinking behind your prediction.

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### Procedure

Describe an experiment you can conduct to check your prediction.

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### Data

Conduct a water-mixing experiment.

We mixed \_\_\_\_\_ mL of hot water and \_\_\_\_\_ mL of cold water.

$T_{\text{hot}} (^{\circ}\text{C})$	$T_{\text{cold}} (^{\circ}\text{C})$	Prediction ( $^{\circ}\text{C}$ )	$T_{\text{final}} (^{\circ}\text{C})$

Write the equation for calculating final temperature when equal volumes of water are mixed.



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## **ENERGY ON THE MOVE QUESTIONS**

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1. Explain how cold milk cools hot cocoa.

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2. Why do you think an ice cube feels cold when you hold it in your hand?

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3. What will happen to a balloon stretched over the mouth of an empty bottle when the bottle is placed in hot water? Explain all the energy transfers.

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4. When does energy flow from a cold object to a hot object?

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5. What does a thermometer measure, and how does it do it?

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## **RESPONSE SHEET—ENERGY TRANSFER**

Julie said,

When you put a bottle of juice in a cooler full of ice, the juice gets cold. That's because the cold transfers to the juice and slows down the kinetic energy of the juice particles.

Comment on Julie's ideas and give your explanation for why the juice gets cold.

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