

# Heat and Motion in a Glass

## **Action**

Students will see that food colouring will disperse more quickly in a glass of warm water than in a glass of cold water.

## **Grade Level**

Grade 3 - Properties of Matter

## **Materials**

- 2 clear glasses
- A kettle (or burner for heating the water)
- Water
- Food colouring
- Oven mitts

## **Instructions**

- Heat enough water to fill one of the glasses  $\frac{3}{4}$  full.
- Place both empty glasses in so the students can see them. Fill one glass  $\frac{3}{4}$  full of cold water and the other  $\frac{3}{4}$  full of the hot water.
- Add food colouring to the glass containing the cold water and observe the results. Then add food colouring to the glass containing hot water and observe the difference.

## **Safety**

No safety concerns. Use care when handling the hot water. Be careful when using food colouring as it may stain clothing.

## **Science Principle**

Water molecules are always moving but at different speeds. In the cold water, the water molecules are moving more slowly than the hot water molecules. As a result, the increased movement of the molecules will cause the food colouring to disperse more quickly in the hot water.