

# Year 6

## Changing states: activity ideas

**1** Research the amount of water used by people in the UK each day. What is the average water consumption per person? What are the main things that individuals use water for? (Washing, flushing toilets, cooking, drinking, and so on.) Encourage the children to think about their own consumption and that of their families. Stress that water is a commodity that has to be paid for. Why is it important to conserve water? How could this be done? The children might like to produce posters encouraging people to use less water.

**2** Link to data-handling activities in numeracy and ICT by presenting findings about the amount of water consumed for different purposes in the form of a bar graph or pie chart.

**3** Compare the availability and the use of water in this country with that of other countries. Why do some parts of the world have little or no access to a safe, abundant water supply? Ask the children to reflect on how difficult life would be without easy access to safe water. Write to appropriate charities, government departments and other organisations, and gather information on the political and social issues surrounding the availability and use of water around the world.

**4** Use an IT sensor or thermometer to record the temperature of warm water as it cools and cold water as it warms up. Children may need to be shown explicitly how to use and read a thermometer. Present the children with a plastic beaker containing warm (not hot) water. Working in pairs or small groups, ask them to record the initial temperature and then record

the temperature at intervals of approximately five minutes. After taking the first three or four readings, can they predict if the temperature will follow any pattern? Give each group water at a different starting temperature. Are there any differences in the rate at which the water cools? When the temperature of the water is constant, check the temperature of the room. What do the children anticipate it will be? Why?

**5** Carry out the same experiment but give the children containers of iced water. What predictions can they make about how the temperature of the water will change? Does the temperature of the water increase at a greater rate than it decreased? Does it change more slowly, or are they the same? Display the information collected in a line graph.

**6** Ask the children to identify examples of changes in state when things melt, freeze, evaporate and condense. Examples may include water, ice, steam, wax, molten metal or molten rock. Explain that these changes are all reversible. Demonstrate the changes in state of water. Begin with a large block of ice and melt it in a saucepan. Continue to heat the water until it is boiling, and cover with a lid. Lift off the lid and position it so that the steam condenses and runs into a container for collection. When enough water has been collected it can be refrozen to complete the cycle.

**Safety note:** great care should be taken to ensure the safety of children and adults. All work with boiling water should be teacher demonstration only. Children should be kept at a safe distance away from the experiment. Protection, such as oven gloves, should be worn.

