Year 5

Changing states: activity ideas

1 Revise the terms *solid*, *liquid* and *gas*. Ask the children to write a list or produce a table showing examples of each state of matter. Which category would water come into? Establish or reinforce the idea that water is commonly found in all three states.

2 Set up an investigation to explore evaporation. Pour water onto an area in the playground to create a puddle. Encourage the children to suggest what will happen to the water. If they say that the puddle will disappear, introduce the terms *evaporate* and *evaporation*. Return to the puddle at regular intervals and record observations. At this stage it is not necessary for any measurements to be taken, as it is an understanding of the concept that is being developed. A child could mark the extent of the puddle with chalk at each observation, if this would make it clearer. As the puddle dries, ask for ideas as to where the water has gone.

3 Demonstrate that liquids other than water also evaporate. Put a few drops of perfume or aftershave in a Petri dish or similar container, and place one in the middle of each table. Ask the children why they are able to smell the liquid. Explain that the liquid is evaporating and that they are able to smell the gas. Create a quiz by having a variety of different liquids like lemon juice, perfume, cold tea or coffee in unmarked plastic containers. Ask the children to identify each substance by its smell alone. If it's not possible to find containers that are opaque, then the children could work in pairs, with each child taking it in turns to cover their eyes and guess the smell.

4 Carry out research into the water cycle using secondary sources. Create a water cycle display with explanations of each stage of the process.

5 Write letters to local water companies asking how water is treated. What are the processes involved in making our water safe to drink? What happens to our waste water?

6 Provide the children with a sample of water that contains salt and a substance that is insoluble, such as sand. Hand out equipment so that the children can remove the sand and recover the salt through the process of filtration and evaporation. (Some children may need support when carrying out the two processes.) In order for the water to evaporate, the experiment will need to be established and observed over a period of time, as it will not be possible for the children to boil the water to speed up the process of evaporation. When the investigation is complete, the children should be encouraged to report their conclusions in terms of scientific knowledge and understanding.

7 If possible, allow the children to make simple cakes to investigate what happens when some materials are mixed, how heating some materials can cause them to change, and that some changes are irreversible. As the ingredients are mixed together, encourage the children to observe how it is not possible to separate them. Once the cakes have been baked, the ingredients have been irreversibly changed.
Safety note: be aware of food allergies and issues of hygiene if the food is to be eaten. Refer to appropriate school policies.

ACTIVITIES DEVISED BY MARK LONGMORE