Differentiation
Support children by asking them to compare the drying time of a screwed-up wet handkerchief with that of one hung on a line, the drying times of sheets of wet paper placed in the sun and in the shade, or in front of a fan and in still air.

Extend children by asking them to plot graphs of the depth of water over time in open containers left in different locations. They could record the temperature with a thermometer or datalogger and the airflow with an anemometer. For fair comparisons, the exposed surface areas should be the same. The effect of changing the exposed surface area can also be investigated.

will the do? What observations will they make? How will they record their observations? Each group should describe its plan to the class before proceeding to the practical work.

GROUP ACTIVITIES
The children work in groups to carry out their investigations.

ASSESSMENT
Ask the children to explain how they planned their investigations. Did they predict how the drying time would depend on the location? Were their predictions confirmed? Make sure that they understand the importance of changing only one variable at a time when they are investigating the effect of a single factor.

PLENARY
Each group should report their findings to the rest of the class and display them as a chart or graph. Some children could use the graphing tool on the CD-ROM to do this.

OUTCOME
- Can plan and carry out an investigation and record the results.

Lesson 2 Condensation

Objective
- To know that gases can be turned into liquids by cooling.
- To know that this process is called condensation.
- To know that water vapour is present in the air, but cannot be seen.

Vocabulary
condense, condensation, water vapour, changing state, liquid, gas

RESOURCES
Main activity: A picture of people or animals with steaming breath; a refrigerator, a small mirror; a pair of spectacles, a can of fizzy drink; cut flowers in a narrow-necked vase, a polythene bag; modelling clay, rubber bands.
Group activities: 1 Plastic bowls, warm water, cling film, ice cubes, paper, pencils. **2** Photocopiable page 116 (also 'Condensation' (red) available on the CD-ROM); pencils.
ICT link: 'Condensation' interactive from the CD-ROM.

PREPARATION
Cool the mirror, spectacles and can of drink in the refrigerator, for half an hour, before the lesson. Make sure there is a good supply of ice cubes available. Set out a plastic bowl and piece of cling film for each group, and a copy of page 116 for each child.

BACKGROUND
Condensation is the process by which a gas changes into a liquid. It is the reverse of evaporation. Children will be familiar with the condensation that takes place on a cold glass or metal surface, when it is brought into a warm room – the surface of a drink can or bottle taken from the fridge becomes wet with condensation. Spectacles 'steam up' with condensation when you come indoors on a cold day. Cool surfaces such as windows and mirrors become covered with water droplets in kitchens and bathrooms, when there is a lot of water vapour in the air.

As a result of the evaporation of water from the soil, lakes, rivers and oceans, water vapour is always present in the atmosphere. Warm air can hold more water vapour than cooler air. This is why condensation is observed when warm air comes into contact with a cooler surface: the air adjacent to the surface is cooled and can no longer hold as much water in the gaseous state. Some of the water vapour condenses into drops of liquid water that form on the cold surface. The same process explains 'steamy breath' on winter days and the formation of clouds: water vapour condenses