

Steamy Shower

I love a
dreamy, steamy shower
hanging about for over an hour
just before bed
getting hot and red
in the steam
standing there with time to dream
water-running-over-me feeling
drips dripping off the ceiling
mum says its my fault its peeling
nothing can beat
the hot wet heat
nothing wetter
nothing better
I love a
dreamy steamy shower

“Steamy Shower”

Discussion

Points

- ◆ What gases are in the bathroom?
- ◆ Why is water vapour there? Where does it come from? Can you see it? What shape is it?
- ◆ What shape is the water in the bath? Does it stay like that?
- ◆ When water becomes warmer it changes more quickly from a liquid to a gas (vapour). This is called evaporation. What will eventually happen to it?
- ◆ What is the water dripping from the ceiling? Where does it come from?
- ◆ There is a water-cycle happening in the bathroom. Can you describe it?
- ◆ How would you describe steam? Where does it come from?
- ◆ When it rains, there are puddles on the playground. When the puddles dry up, where does the water go?
- ◆ Where does the water go when washing dries?
- ◆ Do puddles and washing dry up quicker on a hot or cold day?
- ◆ Describe a water cycle in a kitchen.

Key

Ideas

- ◆ Water changes from a liquid to a gas called water vapour, which is in the air.
- ◆ Evaporation is also affected by the size of the surface area of liquid from which the evaporation is occurring.
- ◆ Evaporation is reversed when the water vapour cools. This is called condensation.
- ◆ Solids that have dissolved can be recovered by evaporating the liquid from the solution.

Science

Background

- ◆ A solid has a definite shape that remains the same unless a force is acting upon it. The particles that make up a solid are close together and move about a fixed position. A liquid has no fixed shape but a fixed volume and takes on the shape of the container it is in. The particles remain in close contact with each other but have more energy and movement than a solid. A gas has no fixed shape or volume. Energy, usually in the form of heat is required to change from solid to liquid to gas. This process is reversible, which happens on cooling and a transfer of energy.
- ◆ Steam is the gaseous state of water at or above 100°C; it is not visible. Water vapour is the gaseous state below 100°C; it is also usually not visible.
- ◆ Evaporation occurs when a liquid dries up. Those molecules on the surface of the liquid which have more energy change to a colourless gas called water vapour. They move from the liquid into the air. The more liquid that is exposed to the air, the faster it will evaporate.
- ◆ Evaporation occurs at low temperatures but increases as the temperature rises because the surface molecules have more energy and move away faster. As evaporation occurs it has a cooling effect.
- ◆ When water is boiled, the gas phase is very hot (100°C). When the water vapour or steam hits colder air, the gaseous state turns back to the liquid state (condenses) and forms tiny droplets in the air which remain suspended as a fog, mist or cloud. If these tiny droplets hit a cold surface they coalesce further to form water.

Science

Skills

Children should be able to:

- ◆ follow instructions correctly;
- ◆ use apparatus carefully;
- ◆ plan and carry out an investigation;
- ◆ work with others.

Key

Activities

Ask children to think about what happens in the bathroom when someone has a bath or shower. They could create a flow diagram or draw pictures and annotate them.

Discuss the children's ideas and then do a teacher demonstration, using very hot water, to illustrate how water vapour condenses when it meets a cold surface.

Talk about evaporation and condensation with the children. Encourage them to think this through in the context of the bathroom and kitchen. Then help them to make links with other contexts where evaporation takes place such as washing on the line or puddles on the ground.

Children could be given the opportunity to investigate what makes a puddle dry up. They could create their own puddles by pouring water on different parts of the school playground, using the same amount of water but in different places, such as shady or not shady.

This could be done each day of the week, noting the weather conditions. Do they find a link between the weather and how quickly or slowly the puddle dries up?

Safety : Take care when using thermometers, and handling hot and cold liquids.
See ASE publication *Be Safe!* for information on all aspects of safety in school science.

Numeracy

Skills

Children should be able to:

- ◆ use a stopwatch accurately;
- ◆ make careful observations;
- ◆ measure area accurately;
- ◆ record results accurately;
- ◆ use a thermometer.

Literacy

Skills

Children should be able to:

- ◆ use rhyme and alliteration;
- ◆ manipulate words;
- ◆ make a flow diagram to explain something;
- ◆ read poetry and modify performance.