

Teachers Notes

These notes refer to activities 8 - 15 in the activities list.

What makes water dangerous to drink?

Possible suggestions:

Poisonous chemicals or metals, (mercury/lead)

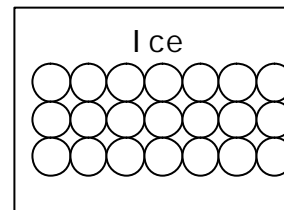
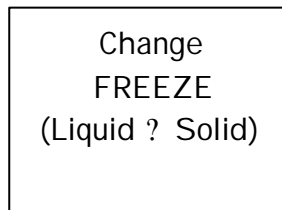
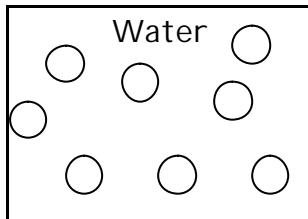
Insect egg/larvae (invisible to the naked eye)

High mineral content (in some foreign countries)

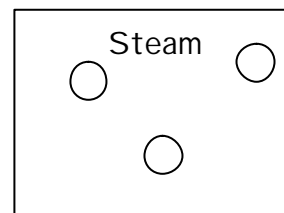
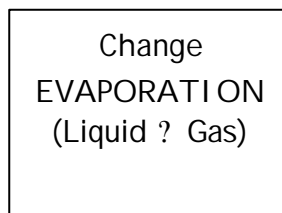
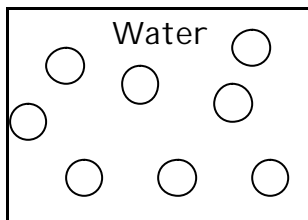
High salt content (the ocean)

Water as a gas, liquid and a solid.

The Changing Water worksheet should be completed using the following diagrams.



Ice to water uses this diagram in reverse. The "circles" represent water particles.



Steam to water uses this diagram in reverse.

Dissolving activities

Suggested solids to try:

Sugar

Salt

Flour

Sand

Instant coffee

Sawdust

Gravel

Bath crystals

Note that hot water gives more successful results.

Discuss soluble/insoluble materials

Soluble – something which disappears in water.

Insoluble – something which does not disappear in water.

Condensation

A handy tip when carrying out the condensation experiment is not to use a plastic bottle, which can melt when filled with extremely hot water.

Use glass bottles or jars with an adult supervising.

The water has to be extremely hot to successfully observe condensation.

The missing answers in the worksheet are; water vapour, air, water droplets, condensation.

Everyday places where you can observe condensation include the bathroom when having a hot shower, the kitchen tiles when the kettle boils and windows when it's cold in winter (particularly single glazing).

Evaporation

Children should be aware that puddles drying is a very good example of evaporation.

The experiment takes at least a week to observe any visible results.

Surface Tension

The experiment in work card 1 is very tricky and can be more successful using a pin.

A steady hand is essential!

If the pin still won't float sit it on blotting paper which will eventually dissolve leaving the pin floating on the water.

This experiment demonstrates how fragile surface tension is and how easily it can be broken.

The missing words in worksheet 1 are; surface tension, skin.

In worksheet 2 the children can decide what shape they think the drop from the pipette makes. A sphere, ball, teardrop, bubble are all possible observations.

In worksheet 3 the missing words are; surface tension x2, curves.

In work card 4 it is a good idea to have an adult turning the jar upside down as the children can become very wet otherwise!

In worksheet 4 the missing words are; holes, surface tension, stops, water.

The Water Cycle

The order of the cycle is as follows;

1. The water cycle starts with the sea. The sea is made up of water.
2. As the sun shines down the water evaporates. The water does not disappear, it becomes invisible water vapour (water droplets in the air).
3. Warm air can hold a lot of water vapour. The water vapour gathers together in a big group. We see this as a cloud.
4. As the cloud moves up the air becomes colder.
5. Cold air cannot hold as much water as warm air.
6. The water is dropped from the air as rain.
7. The water runs into rivers and streams and these flow into the sea.
8. The cycle happens all over again. This way we always have water.

Children could explain this process by making a labelled diagram.

Equipment which could be useful

A water cycle simulator is a mini ecosystem which demonstrates the water cycle. Available from any good science catalogue for about £35.00.