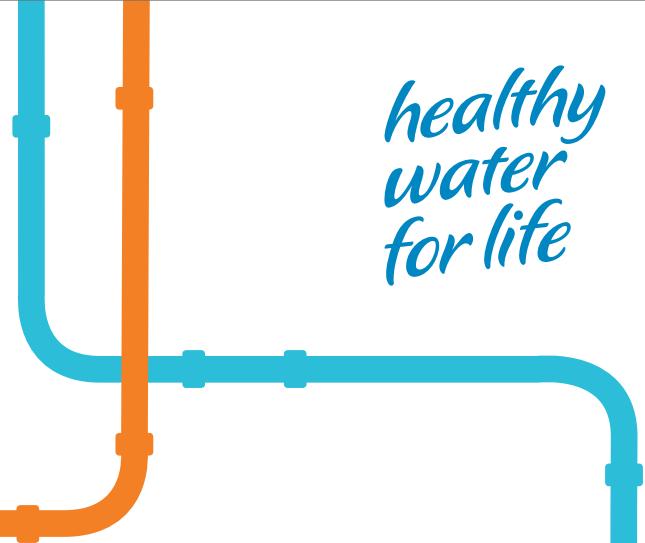


Fact sheet

Water

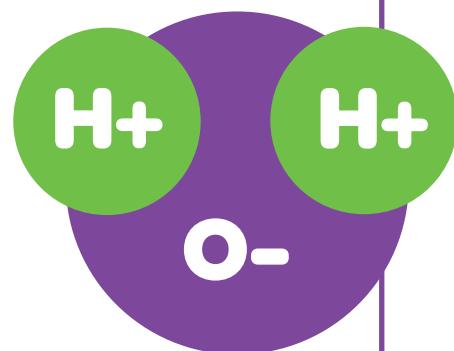


1. What is water?

Everyone has seen, touched and tasted water. You drink it every day and use it for many things at home. Have you ever wondered what water is? It is a very simple substance and in most cases it doesn't have a colour, taste or smell.

2. The science of water

The scientific name for water is H₂O. The number two means there are two hydrogen atoms, which are bound to one side of a single oxygen atom. This combination is called a water molecule. The molecule has a positive charge on the side where the hydrogen atoms are and a negative charge on the oxygen atom side. Since opposite electrical charges attract, water molecules tend to attract each other, making water kind of 'sticky'.



Did you know? If you placed a single drop of water in your hand, you would be holding millions of water molecules that are 'stuck' together!

Challenge: Using an eye dropper see how many drops of water you can place on a five cent piece. You will be amazed by the answer!

3. States of water

When you use water it is usually in its liquid state but water can exist in other states too. Think about what you see coming out of the kettle when it boils, or what happens to water in the freezer. That's right – water can also exist as a gas (steam or water vapour) and a solid (ice).

Challenge 1: Make a list of the different places you can find water in its three states.

Water – solid state	Water – liquid state	Water – gas state

Challenge 2: When water changes from one state to another, the process has a special name.

Find out the scientific name for these processes:

From solid to liquid **M** _____

From liquid to gas **E** _____

From liquid to solid **F** _____

From gas to liquid **C** _____

(Secret answers are provided on the back)

4. Water on Earth



Water is found in many places on Earth, but 97% of it is found in the world's oceans as saltwater.

The other 3% is the type of water that we drink – freshwater. Freshwater is found in rivers, lakes and creeks, but it can also be found underground and in places like Antarctica as frozen ice.

Did you know? If you took all the water in the world and poured it into one litre milk cartons, you would need

1,397,918,500,000,000,000 cartons!

5. Water in our solar system

Water, in its solid state (ice), can be found in other places in the solar system:

- On the Moon
- On the planets Mercury, Mars and Neptune
- On the dwarf planet Pluto
- On satellites of planets such as Triton and Europa.

But water in its liquid state has, so far, only been found on Earth.

6. Activity time!

Activity 1: Make your own 'states of water' collage. Look back at the list you made of the three water states. Draw some pictures and add images from magazines, newspapers or the internet – or your own photos – to create your poster collage.

Activity 2: See water in its three states but make sure you have an adult to help you. You will need some ice and a pan. Place the ice in the pan and put it on the stove. Turn on the heat. First the ice (solid) will change to water (liquid) and then it will turn into steam (gas).

Did you know? Ice and snow melt at zero degrees Celsius and water turns into steam at 100 degrees Celsius.

7. Want to know more?

More information and fact sheets about South East Water and our sewerage network can be found at southeastwater.com.au

Melting, Freezing, Evaporation, Condensation

Challenge 2

Gas: Rising from boiling water in a kettle and saucerpan, also off a pool.

Liquid: Tap water, river, rain.

Solid: Ice cube, ice skating rink, frozen lake.

Challenge 1

Activity answers: