

All about water

Join us on our watery adventure!



This booklet belongs to

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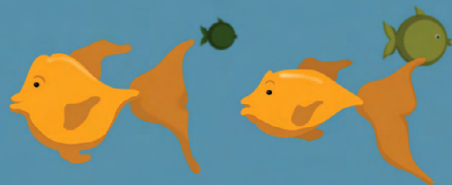


Water is very important to life and we need people to understand how much they use and also how they can save it.

Work your way through and see if you can complete experiments and puzzles, and fill in the water diary to work out how much water you actually use!

You may be able to come up with some ideas of how you can save water at school and at home.

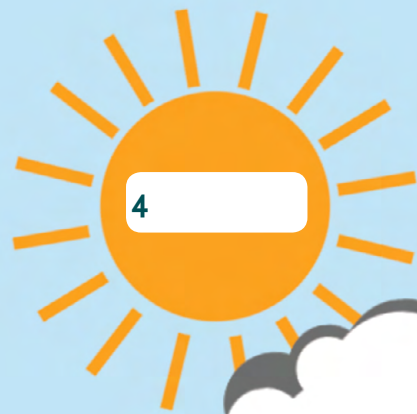
Good luck!



My animal is called

.....

Use your imagination to design, colour and name your own animal to join you on your watery adventure!



Pure water
boils at 100°C
and freezes
at 0°C.

When it rains,
water is collected
in catchment
areas such as the
Lake District and
Peak District.

5

The chemical name
for water is H₂O. This
means water is made
up of two atoms of
Hydrogen and one
atom of Oxygen.

6

The water cycle

More than 70% of the
earth's surface is covered
with water, but 97% of that
is in the oceans and 2% is
frozen in the polar ice caps.

The remaining 1% is
freshwater found in rivers,
lakes and underground. It is
this 1% that we depend on
for the water we need.

Water can be
a solid, liquid
or a gas.

7

8

3

2

1

Can you put the words below in
the right place on the picture?

Condensation
Sun
Precipitation
Land

Sea
Collection
Evaporation
Cloud

Top tips for saving water at home

- Turn off the tap when you brush your teeth
- Have a shower instead of a bath
- Take a shorter shower, if possible stay in for no more than 4 minutes
- Use a bowl for washing the dishes
- Ask mum or dad to get somebody to repair dripping taps
- Check there is a full load in the washing machine and dishwasher before they are used
- Use a watering can instead of a hosepipe to water the garden
- Get a water butt and collect the rain from your roof to water the garden
- Use a bucket instead of a hosepipe when washing the car

Match up the activity

Have a look at the pictures and draw a line to the amount of water you think each one uses.

Answers at the back of the booklet.



80 litres

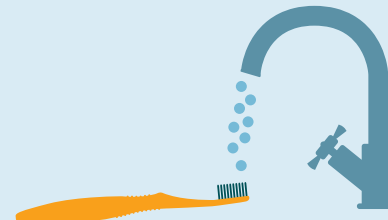
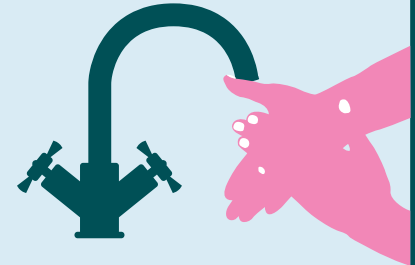
1/4 litre

18 litres

1 litre

9 litres

30 litres



If you were to turn the tap off whilst brushing your teeth, how many litres of water could you save?

5 litres ☐ 10 litres ☐ 17 litres ☐



My water diary

Use the water diary to record your water usage for one week and work out whether you are a water waster or a water saver.

Mark down how many times a week you do the activities...



ACTIVITY	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Total number for week		Litres per activity	Total number of litres
Have a bath									X	80	
Have a shower									X	30	
Flush the toilet									X	9	
Have a drink									X	1/4	
Wash your hands									X	1	
Brush your teeth (tap off)									X	1	
Brush your teeth (tap running)									X	18	
										Grand Total	



The average person in the North West uses 150 litres of water each day, which is 1050 litres per week!



Water safety

Reservoirs are large open areas of water which are used to store water before it gets treated.

Reservoirs may look inviting on a hot day but don't be fooled, they can be very dangerous places and a swim can soon become fatal.

You may swim well in a warm swimming pool but that does not mean you will be able to swim in cold water such as reservoirs, rivers, ponds or canals.

The dangers

- It is very cold and there may be hidden currents
- It can be difficult to get out (steep slimy banks)
- It can be deep
- There may be hidden rubbish e.g. shopping trolleys, broken glass
- There are no lifeguards

Remember - Don't be a fool, swim at the pool



Activity time

(Try this at home or at school)

Design your own filter

When water from a reservoir arrives at the water treatment works it can be dirty and cloudy. The first thing that happens to the water is that it has to be filtered to remove particles of mud and dirt.

You will need:

- Sand, gravel, stones
- Muddy water (soil and water)
- 1 disposable plastic cup with small holes in the base
- 2 clear beakers

Place the sand, gravel and stones in layers into the disposable cup. In small groups decide which order to place the sand, gravel and stones. Think about which material will be the best at trapping the particles of soil.

Remember to leave some room at the top to pour the water on to. Hold your filter over the clear beaker to catch the water coming through the filter.

Stir the soil and water mixture then pour over the filter.

When the water has passed through the filter into the beaker, wait for the other groups to finish and compare them to see who has the cleanest water.



Where does the water go?

You use water for many things in the home such as washing your hands, cleaning your teeth, having a shower or flushing the toilet, but have you ever thought about where it goes?

Once you pull the plug or flush your loo the dirty water goes into your drain and then into one of our sewers. In the North West we collect the equivalent of 184,000,000 toilet flushes a day but there are many people who forget that the toilet is not a dustbin.

We find some really strange things down in the sewers - such as toys, mobile phones and hairbrushes. We think these get flushed accidentally. But some people flush other things down such as cotton buds and baby wipes, thinking that they are ok, but they all stick together to make a big lump of horrible stuff which can block up the pipes and might stop the water from being flushed away. Sometimes it comes back up and spills over the toilet seat and that's not very nice. Then a grown up has to clean up the mess and may even have to phone a plumber to help.

This is a real problem so only toilet paper and anything that comes out of you should go down the loo!



Experiment time

(Try this at home or at school)

Experiment 1

Your will need:

- A cereal bowl, half full of cold water
- A paperclip (pulled open a little)
- Washing up liquid

Delicately place the paperclip on the surface of the water (don't touch the water with your fingers). Once the paperclip is floating, add a small drop of washing up liquid and see what happens.

To find out why go to the back of the booklet.

Experiment 2

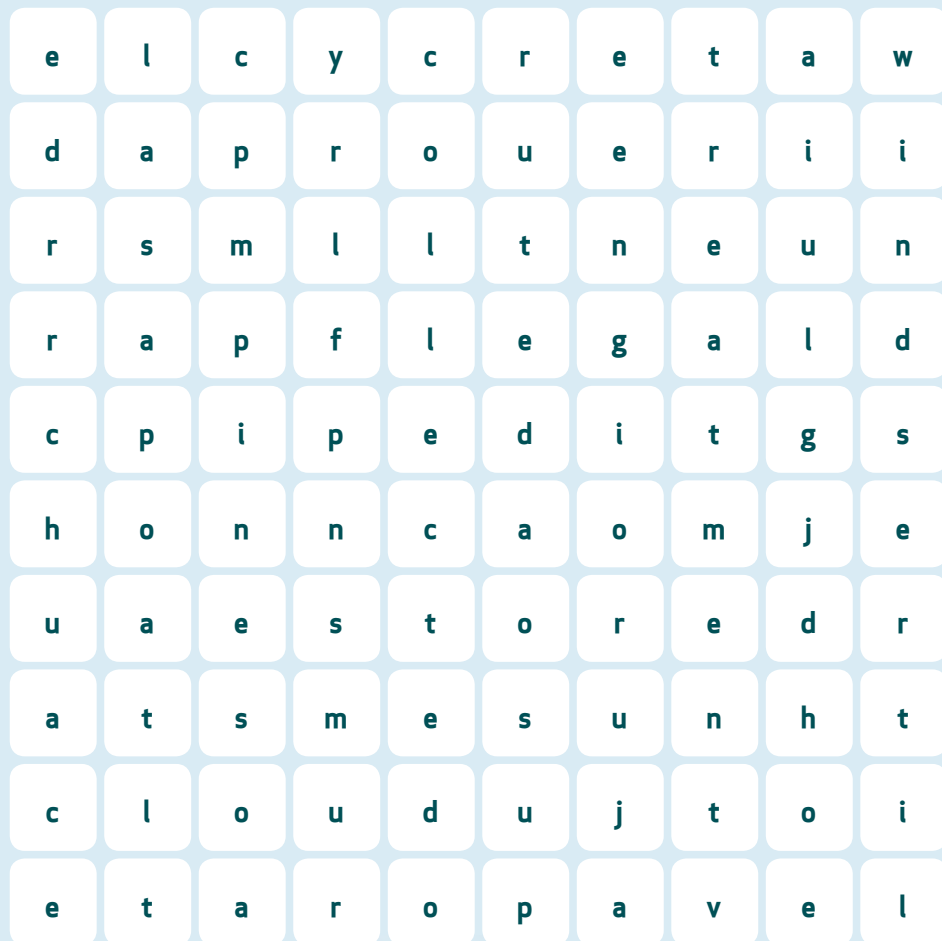
Your will need:

- A cereal bowl half full of cold water
- Pepper
- Washing up liquid

Sprinkle pepper onto the water's surface. On the same hand have one clean finger and one finger with a drop of washing up liquid. Gather round your friends to be impressed!

Place your clean finger in the bowl first (nothing should happen). Use some magic words, then place your finger with the washing up liquid on in the bowl and see what happens.

All the pepper should move to the outer edge of the bowl as if by magic!



Can you find these words?

Wordsearch

sea	collected
sun	stored
evaporate	treatment
wind	piped
cloud	water cycle
rain	litres

Answers



The water cycle

1. Land
2. Sea

3. Evaporation

4. Sun
5. Cloud

6. Condensation

7. Precipitation
8. Collection

Match up the activity

Shower	30 litres	Washing your hands	1 litre
Flush the toilet	9 litres	Have a bath	80 litres
Have a drink	1/4 litre	Brush your teeth	18 litres

If you were to turn the tap off whilst brushing your teeth, how many litres of water could you save?

Answer: 17 litres

Why does the paper clip float?

Water has a surface tension (skin) which is strong enough to support small weights. This is why pond skaters can skate on the surface of water.

Why does the paper clip sink?

The washing up liquid binds with the water molecules weakening the surface tension.



If you want some more help go to
www.unitedutilities.com/primary-schools



Bye for now!

We hope you have enjoyed your water adventure



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