Severn Trent Water

the Wet WATER WIZARD homefile





Hello, I'm the Wet Water Wizard. I hear that you have just enjoyed an exciting visit to a Severn Trent Water site. I am going to take you on a journey with some of my friends to discover how important every drop of water is to our amazing planet. Hold on and enjoy the ride! Some of the activities in this booklet require the use of scissors. Always ask permission before you use them.



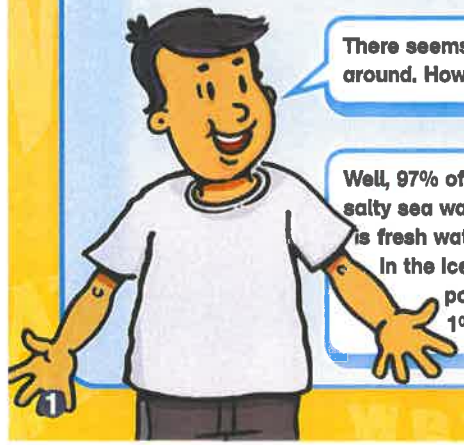
Where shall we start?

You have learned about the water cycle, let's see if we can make it work.

1. Ask if you can borrow four identical small dishes.
2. Pour enough water to cover the bottom of each dish.
3. Ask an adult to help you cut a large plastic bottle in half – keep the lid!
4. Cover two of the bowls with the parts of the bottles.
5. Put a covered and an uncovered bowl on a sunny window sill and leave the other two bowls in a dark, cool place.
6. From which bowl does the water evaporate most quickly?
7. Which process can you see happening on the inside of the bottles?







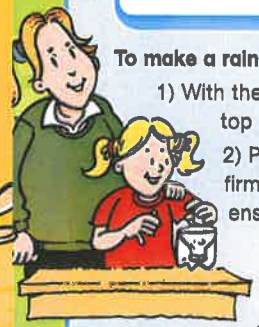
There seems to be a lot of water around. How much of it can be used?

Well, 97% of the world's water is salty sea water so there is 3% that is fresh water. 2% of that is frozen in the ice at the north and south poles, so there is only 1% left that we can use.





At home or with your class, follow the instructions to make a rain gauge recording the daily rainfall on the graph.



To make a rain gauge:

1) With the help of an adult, cut the top off a plastic bottle.

2) Push top section in firmly, or use tape to ensure a water tight fit.



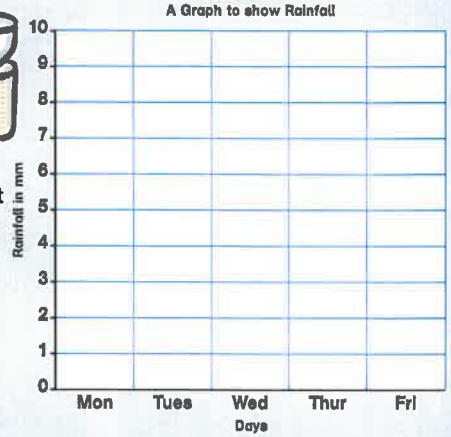
3) Cut out 50mm scale and fix onto the side of the base with 0 at about 5cm from the bottom. Fill with water to the starting point at 0mm.

4) Put rain gauge in suitable position etc.

5) Each day measure the water level and record your results on the graph.

- **Weather stations also measure temperature and windspeed. Can you find a way of measuring these?**

A Graph to show Rainfall





This graph shows the volume of water contained at our reservoir at Carsington in a typical year. When Carsington is 100% full it contains 35412 megalitres.



- **In which months was the reservoir full?**
- **Which month was the reservoir at its lowest level?**
- **Why does the level of this reservoir rise and fall during the year?**
- **What would happen if the reservoir became empty?**



Where is the driest place in the world?

There is a part of Chile called the Atacama Desert where it hasn't rained for more than 400 years!







The Wicked Water Witch uses as much water as she can each day, while the Wet Water Wizard tries to save water! Draw two lines in two different colours following the choices the Wet Water Wizard and the Wicked Water Witch make. Use a calculator to add up how much water they each use in one day.

Get up on Saturday morning

1

Cleaning teeth
tap running: **10 litres**
turn tap on and off: **1 litre**
use mug: **0.5 litres**

2

Flush toilet
use save-a-flush in the cistern: **8 litres**
no save-a-flush: **9 litres**
invest in economy flush toilet: **6 litres**

Wash hands and face: 9 litres
3

Fill the kettle
enough for one drink: **0.5 litres**
to the top: **2 litres**

4

Wash breakfast dishes
in the sink: **20 litres**
put in dishwasher and wait: **0 litres**
in dishwasher and switch on: **15 litres**

5

Wash clothes
turn on machine only half full: **50 litres**
put in machine wait until more washing needs cleaning: **0 litres**

6

Glass of water: 0.5 litres
7

Wash car
hosepipe for 5 minutes: **90 litres**
bucket: **5 litres**

8

9

Wash up from lunch
in the sink: **20 litres**
Put in dishwasher and wait: **0 litres**
In dishwasher and switch on: **15 litres**

10

Water garden
Hosepipe/sprinkler for 30 minutes: **500 litres**
Water from water butt: **0 litres of tap water**
Watering can filled from tap: **5 litres**

Cook pasta for dinner: 2 litres
11

Wash up from dinner
Sink again!: **20 litres**
Dishwasher full, switch on: **15 litres**

12

Glass of water: 0.5 litres
13

Wash clothes
use machine half full again: **50 litres**
fill machine: **50 litres**

14

15

Washing
bath: **80 litres**
shower: **40 litres**

16

Cleaning teeth
tap running: **10 litres**
tap on and off: **1 litre**
mug of water: **0.5 litres**

17

Flush toilet
use save-a-flush in the cistern: **8 litres**
no save-a-flush: **9 litres**
invest in economy flush toilet: **6 litres**

Wash hands and face: 9 litres
18

Bed time!

How much did they each use in one day?

Wicked Water Witch: _____ litres

Wet Water Wizard: _____ litres

How much more did the Wicked Water Witch use? _____ litres

Now trace your day – be honest!

How much do you use? _____ litres

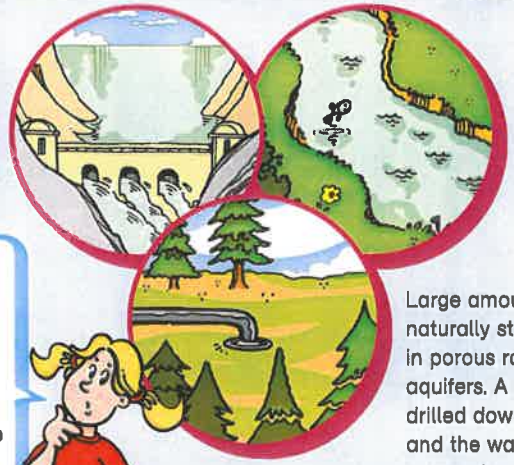
How much could you save if you were like the Wet Water Wizard? _____ litres



Severn Trent Water supplies fresh, clean water to 8 million people every day. We can collect the raw water for cleaning from three different sources.



Reservoirs can be built to store raw water from a river.



Raw water can be pumped directly from rivers.

Large amounts of water are naturally stored underground in porous rocks called aquifers. A bore hole can be drilled down into the aquifer and the water can be pumped out.

Imagine you live in a town which needs a new supply of water. Write down one advantage and one disadvantage of each of the three sources of water.

	Advantage	Disadvantage
River		
Reservoir		
Bore Hole		

Talk to a friend and agree which source of water you would choose for your town.



How does the water get from the reservoir to our house?

Water travels in large pipes. Severn Trent Water has over 40,000km of underground water pipes. The earliest pipes were made of wood. Later, iron was used, but it rusted badly. Now our water pipes are plastic.



the Wet WATER WIZARD quiz

You have almost finished your journey with us now. Let's see how much you have found out! When you have finished my quiz, check the answers on the back cover.



1) How many kilometres of water pipes do Severn Trent Water have?

a) Over 5,000km
b) Over 10,000km
c) Over 40,000km

2) The process by which water is changed into water vapour...?

a) effluent
b) evaporation
c) envelope

3) What percentage of the earth's water is fresh water that we can use?

a) 100%
b) 10%
c) 1%

4) Parts of Chile in South America are the driest places on earth. How long is it since it has rained there?

a) less than 4 weeks
b) more than 400 years
c) less than 40 years

5) Clean drinking water is produced at a...?

a) sewage treatment works
b) water treatment works
c) electricity substation

6) Flushing with a save-a-flush in your toilet cistern saves about...?

a) 1 litre of water
b) 1/2 litre of water
c) 20 litres of water

7) Which of the following uses least water...?

a) having a bath
b) using a washing machine once
c) having a shower

8) The clean effluent from Severn Trent Water sewage treatment works goes...?

a) into a tanker
b) back to people's houses
c) into a local river to begin the cycle again



congratulations!

You have completed your journey with the Wet Water Wizard Crew! We hope that you will help us to take care of our planet's most precious resource and encourage your friends and family to save water too!

Here's some things you could do:

- Take a shower rather than a bath. Save even more water by taking a shower in just four minutes.
- Turn the tap off while brushing your teeth.
- Look on our website for more water saving tips **www.stwater.co.uk/waterefficiency**
- Persuade an adult to contact Severn Trent Water for a free save-a-flush.
- Persuade an adult to contact Severn Trent Water if they spot a leak **www.stwater.co.uk/leaks**
- Please do not flush anything down the toilet other than human waste and toilet paper.



- Tell your teacher about our Be Smart award – it recognises schools that try to use water more wisely **www.stwater.co.uk/besmart**
- In the kitchen, ask adults not to pour fat, oil or grease down the sink as it can cause blockages and sewer flooding. Instead, allow the fat to cool, scrape it into a container and put in the bin.
- If we dispose of our waste correctly and try to use less water, our water and sewage treatment works will use less energy and so will your home. This is a great way of reducing your carbon footprint and helping the environment.



Good luck with trying these tips!



WaterAid

Charity Registration No. 288701

WaterAid is a charity which helps people gain access to safe drinking water and sanitation around the world. Contact WaterAid at **www.wateraid.org** to find out how we can all help.

answers

Wet Water Wizard quiz

1) c – over 40,000 km
2) b – evaporation
3) c – 1%
4) b – more than 400 years
5) b – water treatment works
6) a – 1 litre of water
7) c – having a shower
8) c – into a local river to begin the cycle again

Water Treatment

6	3	5
8	1	9
7	4	2

Sewage Treatment

5	3	8
7	9	4
2	6	1

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