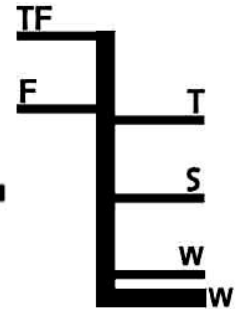
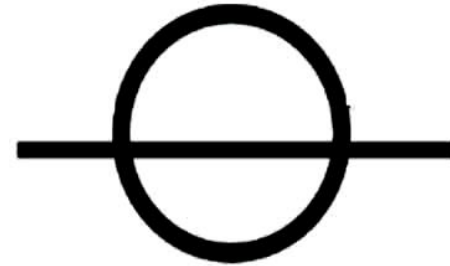
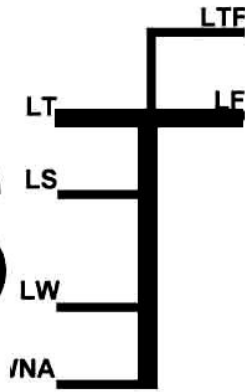


BRIS



TIDES ?

BRISTOL
2015 EUROPEAN
GREEN CAPITAL
LOVES TIDES

my future
my choice

Proxi and Perri Bench Mark Scores

Theme	Proxi and Perri Benchmark Score out of 10	How can we raise the score?
Heritage	9	?
Water	4	?
Biodiversity	6	?
Energy	9	?
Hydro-poetics	5	?
Future	7.5	?



Water

Why do we all need water?

Where does it come from?

Where does it go to?



Why we all need water – Quiz

	?	?	?	?	?
Your body is made up of how much water?	About 10%	About 30%	About 50%	About 70%	About 100%
How long can you live without water	1 day	2 days	3 days	4 days	5 days
How many types of living things – (plants, insects, animals) can survive without water	A few	Not many	A whole bunch of insects	Some plants dont need water	None at all



Why we all need water – Quiz

	?	?	?	?	?
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Water can be?

	True	False
Solid	True	
Liquid	True	
Gas	True	

	Temperature
Water Freezes at	Zero Degrees Celsius
Water Boils at	100 Degrees Celsius



When water turned into a solid it.... ?

	True	False
Gets smaller Contracts		False
Get bigger Expands	True	
Floats on liquid water <i>Lighter than water</i>	True	
Sinks in liquid water <i>Heavier than water</i>		False

Does anything else get bigger when it gets colder?:

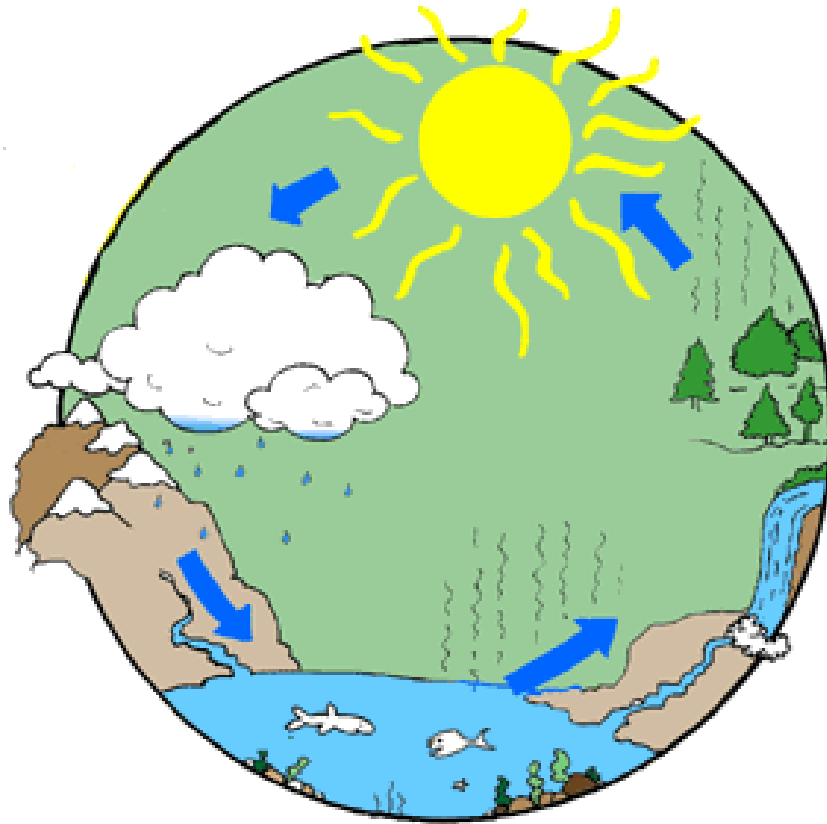


Water Cycle

Water is always changing from liquid to gas and back again. This process is called the water cycle.

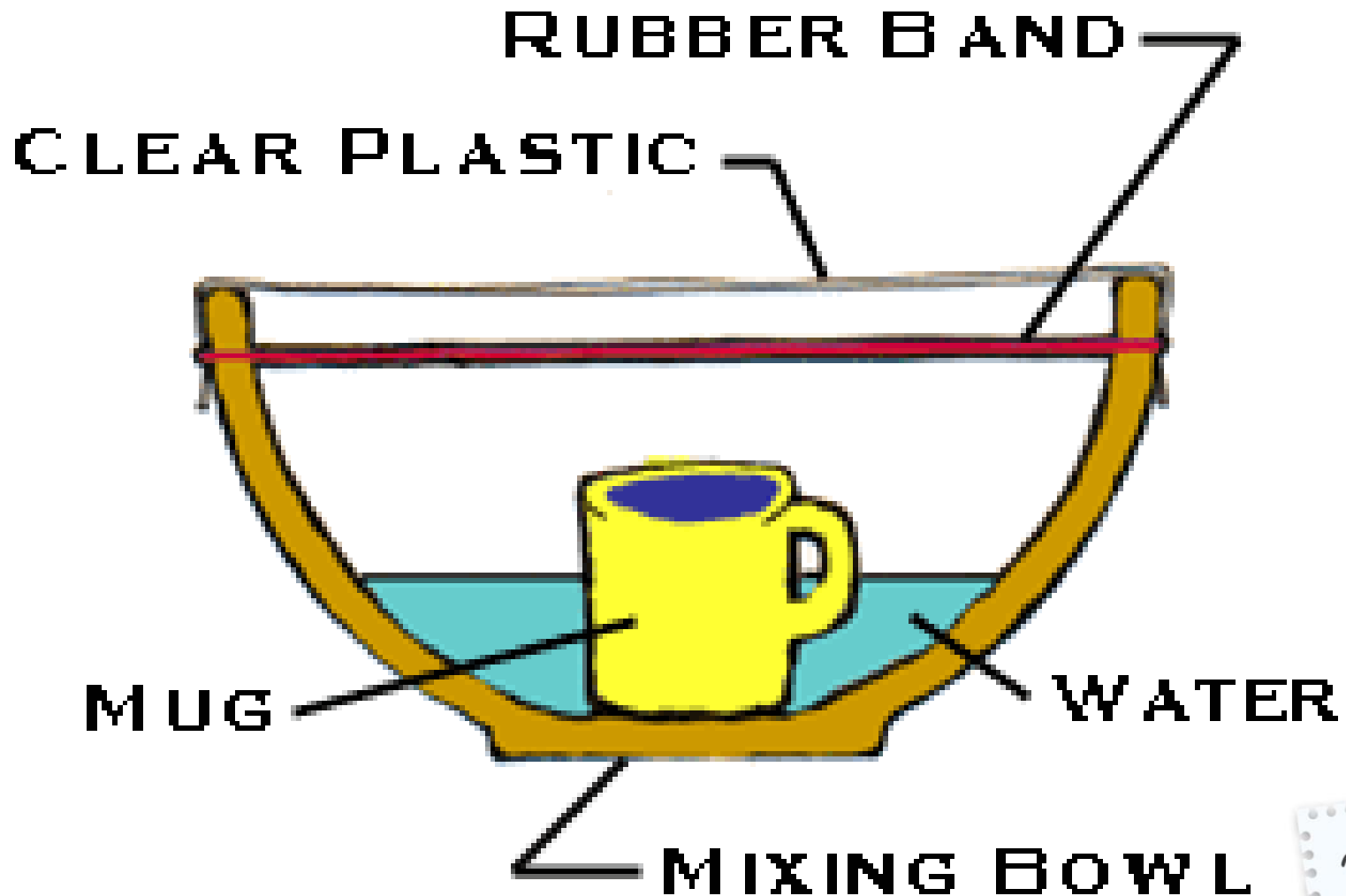
Water Cycle

The sun's heat causes water to evaporate from streams, lakes, rivers, and oceans. The water vapour rises. When it reaches cooler air, it condenses to form clouds. When the clouds are full of water, or saturated, they release some of the water as rain.

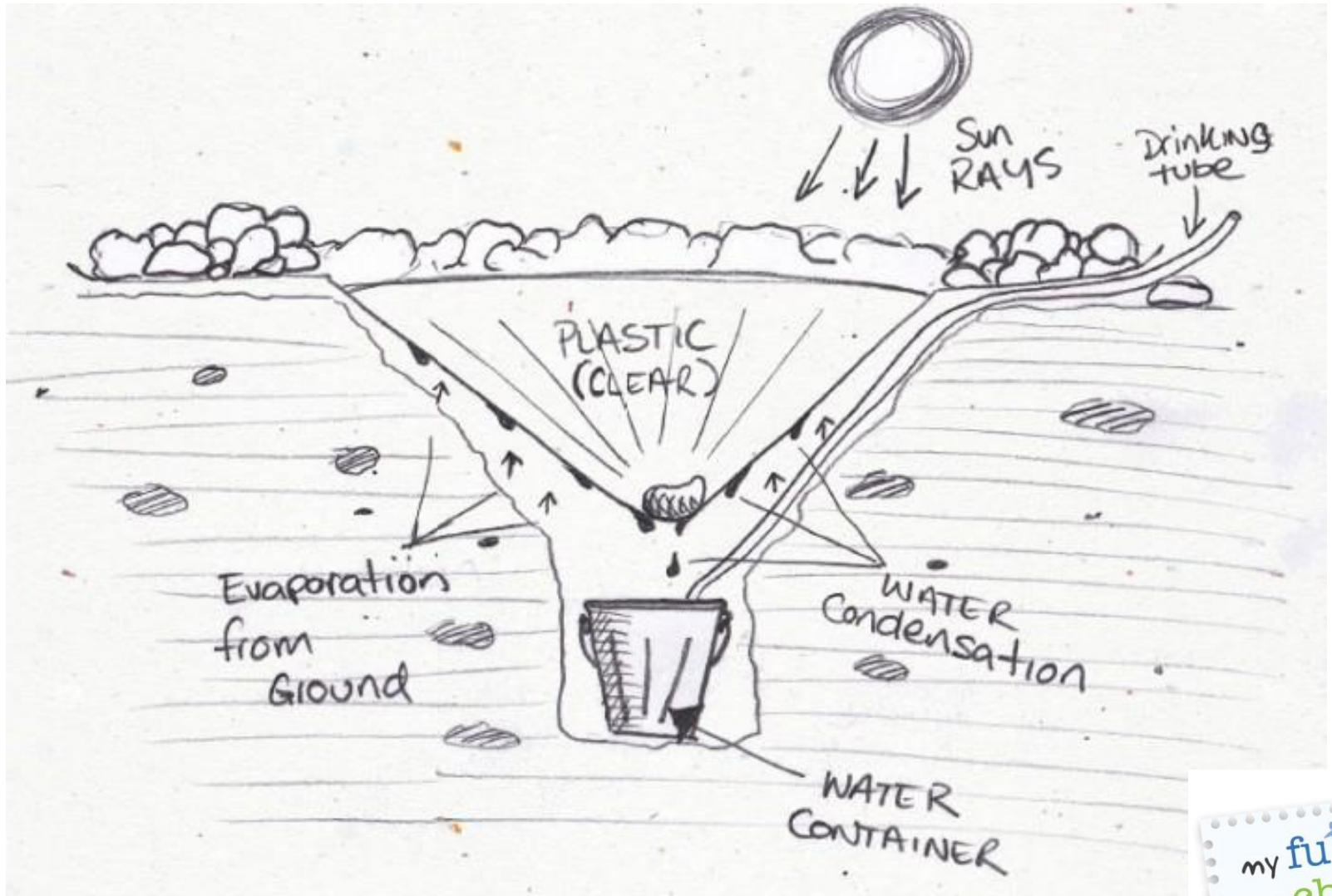


Where do the tides Proxi and Peri appear in the water cycle ?

Water Cycle – Make your own



There are no rivers but there is water in some damp soil on your island how could you capture it?



Water CAPTURE In Bristol

Type of capture	Describe what this is	Find an example of this for Bristol Water
Rivers		
Wells		
Springs		
Boreholes		
Reservoir		



Water Capture In Bristol

How is rain water captured and put into the water supply so it can come out of your tap? Draw pictures of each one of these.

Which of these do you think we rely on the most ?

Springs - Water that collects under ground and bubbles up to the surface naturally

Rivers and canals- channels of flowing water on the surface

Wells – A hole or shaft that is dug to reach into underground water . These are usually old

Boreholes – drilling for water that has collected underground – usually deeper than a well

Reservoir – An open lake or covered tank used to store water



Water Capture In Bristol

	Example	Vital Supply Stats
Springs	Banwell Spring	16 million litres of water a day.
Rivers and canals-	Sharpness Canal – Taking water mainly from the River Severn.	235 million litres of water a day, over half Bristol Water's total daily requirements.
Wells	Clevedon Well is 33.53 metres deep and is lined with brick down to the first 21 metres	4.5 million litres a day
Boreholes	At Shipton Moyne there are six boreholes, sunk to 130 metres (360 feet)	18 million litres of water a day
Reservoir	Blagdon reservoir is a dam across the River Yeo. Built 1891 to 1899 by labourers with spades and horse-drawn carts A massive deep hole 1.78 Km in area	9,547 million litres of water each year.



Water use in Bristol (Bristol Water)

What does the maths tell us?

Population served 1,151,000

Average daily supply 264,000,000 litres

How many litres of water per person per day?

229.37 Litres per person

Does Bristol use more or less water than we did 10 years ago?

Less – discuss in your group why you think this is and the ways you can prevent water from being wasted

Water Treatment

Raw fresh water has to be treated after capture to make sure it is safe when it comes out of the tap.

Water has to be treated after we have used it before it can be returned to rivers and the sea to join the water cycle.

List all the things that humans do that turn tap water into waste water – include all the activities you do but also those you have seen.

Water Treatment – Make your own

You can make your own water filter to show how water treatment helps to remove some of the things found in water. You will need:

large plastic bottle

scissors

washed sand

washed gravel

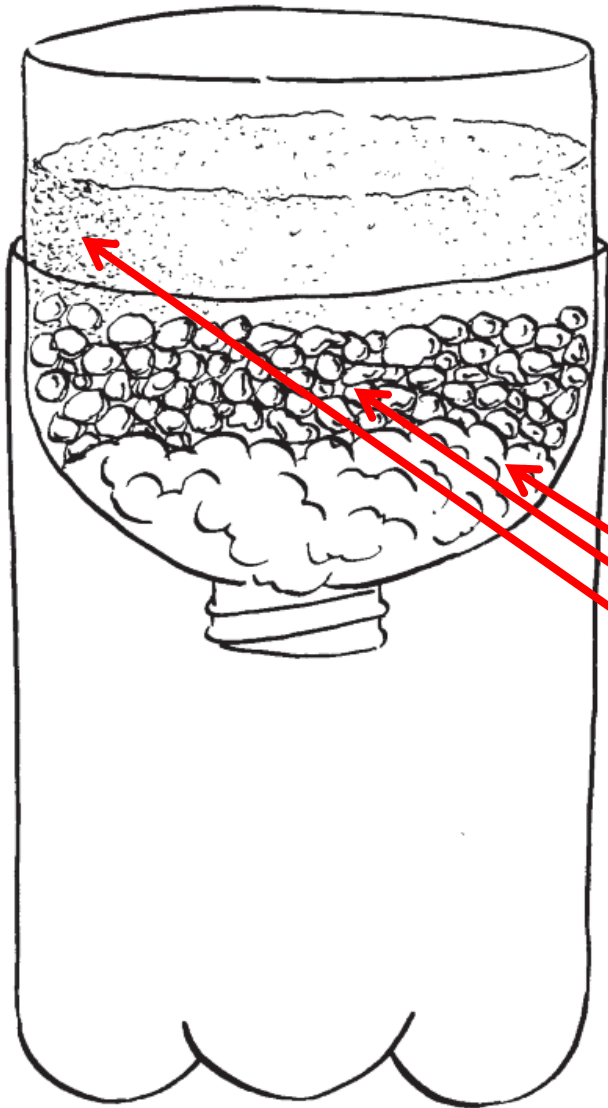
cotton wool

water

soil

large jar

Water Treatment – Make your own



Step 1

Cut the top off the plastic bottle at a point just above the middle.

Place the top half of the bottle upside down in the bottom half.

Step 2

Layer the materials like this:

1 cotton wool

2 washed gravel

3 washed sand

This is your water filter.

Step 3

Now mix together some soil and water in a jar to make dirty water.

Step 4

Slowly pour the dirty water on to the filter.

Water Treatment –

Now answer these questions:

What happened as the dirty water went through the layers of the filter?

What does the water look like now?

The water you have filtered is still not fit to drink. Why is this?

Water Treatment

Look at your list of all the things that humans do that turn tap water into waste water.

List all the filters and screens you can think of that stop things going into the water cycle.

Start at home and then think in the street.

Sewage and waste water is treated by giant versions of your mini filter.

Water Treatment



Look carefully at this picture- Is anything wrong?

Does the packet lie or mislead us about the contents?

Why is important we know it contains plastic sticks?

Water Treatment



Some things don't get filtered and don't get stopped by drain covers
Some things look like food to creatures high up the food chain

What do turtles mistake as food? – jelly fish



Remember the sign of the turtle when you recycle plastic



Water Treatment

Dirty water – who suffers?

Dirty water will kill plant life – along the river banks and seashore.

Who will this effect?

You



Seaweed → Winkle → Lobster → Human

Water

Friends and family challenges –

Find another label on a product in your house that is misleading or a lie.

Find another product that is not safe to flush down a sink or toilet and tell the owner of the product.

Run an awareness campaign about the products you have found in school and at home.

Invent a system of rewards for not buying drinks in bottles and cans and using tap water.

Visit places where our water comes from.

