

TECHFEST

Aberdeen and North-East Scotland's
Festival of Science, Technology,
Engineering & Mathematics
www.techfest.org.uk



TECHFEST PRESENTS BOOKBUG

WATER ACTIVITIES

THIS WORKBOOK IS FULL OF FUN WATER
THEMED WORKSHEETS AND EXPERIMENTS
FOR YOU TO TRY IN SCHOOL OR AT HOME.



www.techfest.org.uk

The Water Cycle

Evaporation: Heat from the Sun causes water on Earth (in oceans, lakes etc) to evaporate (turn from liquid into gas) and rise into the sky. This water vapor collects in the sky in the form of clouds.

Condensation: As water vapor in the clouds cools down it becomes water again, this process is called condensation.

Precipitation: Water falls from the sky in the form of rain, snow, hail, or sleet, this process is called precipitation.

Collection: Oceans and lakes collect water that has fallen. Water evaporates into the sky again and the cycle continues.



Activity one: Colour and complete the water cycle

Activity two: Interactive wordsearch

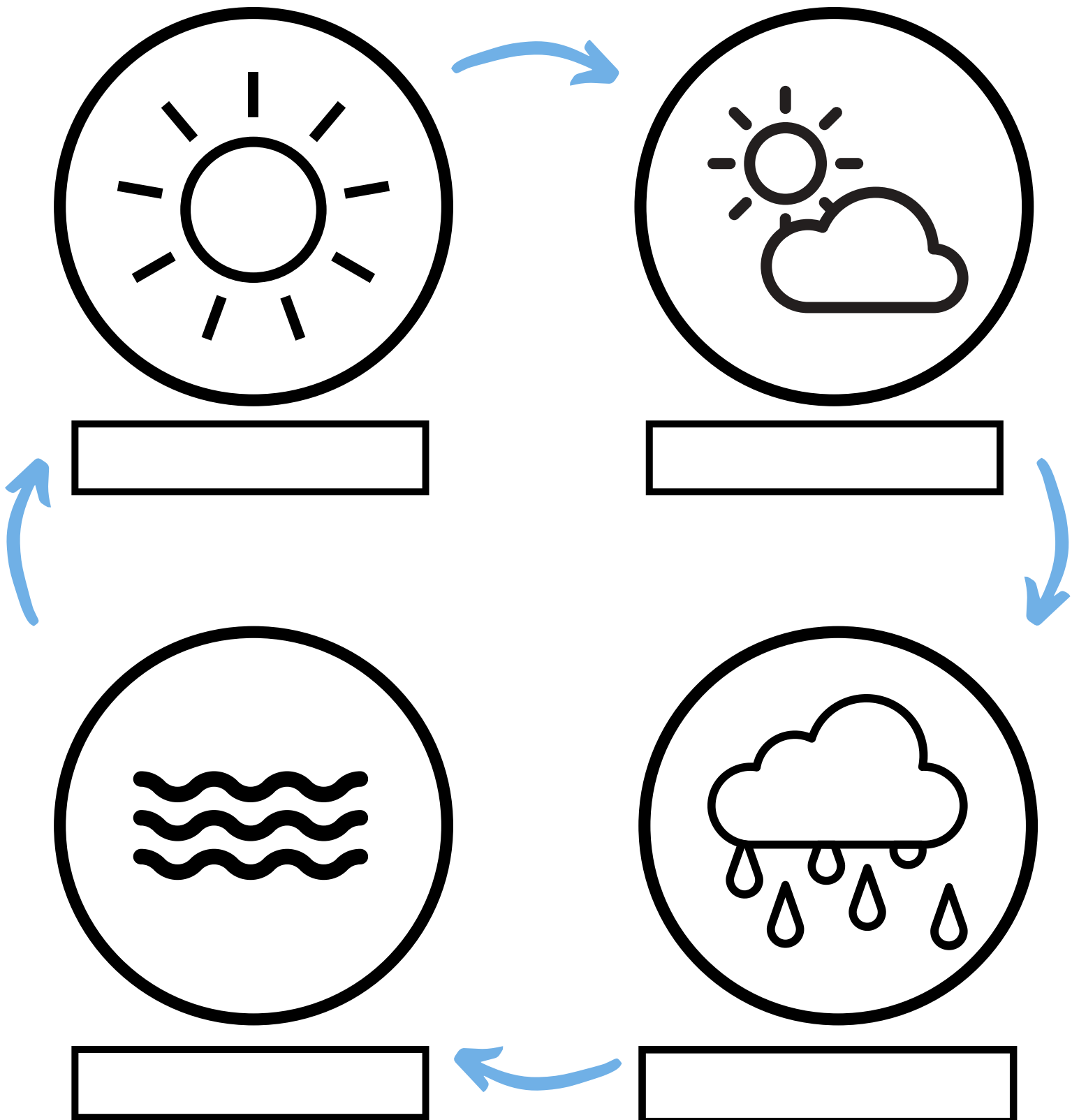
Activity three: Make the water cycle in a bag

Activity four: Make a rain gauge and track rainfall

Activity five: Make a rainbow rain

Colour in and complete the water cycle

Use the following words Evaporation, Precipitation, Condensation and Collection to fill in the water cycle

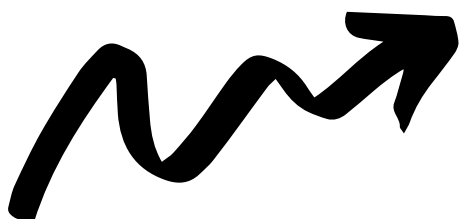


The Water Wordsearch

[Click here for the interactive wordsearch](#) or print the wordsearch out below

M	C	O	L	L	E	C	T	I	O	N	E
I	Z	N	M	B	X	P	Q	K	G	T	V
H	M	J	C	W	A	T	E	R	K	L	A
V	B	S	P	E	V	S	W	T	V	P	P
P	H	D	N	J	U	C	N	W	V	Q	O
W	O	U	W	M	N	U	S	A	W	O	R
P	T	O	N	I	A	R	H	W	X	C	A
P	Z	L	H	V	R	S	I	R	O	E	T
D	I	C	F	X	R	L	Y	M	K	A	I
T	H	U	N	D	E	R	P	M	C	N	O
C	O	N	D	E	N	S	A	T	I	O	N
U	M	B	R	E	L	L	A	U	W	R	L

**FIND ALL THE
WORDS**



WATER

CLOUDS

OCEAN

UMBRELLA

COLLECTION

RAIN

THUNDER

SUN

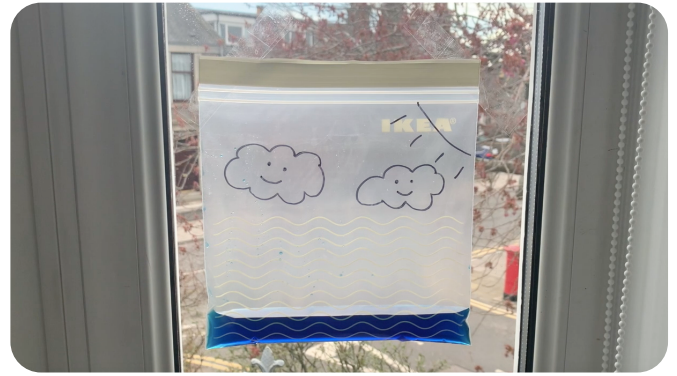
EVAPORATION

CONDENSATION

How to make the water cycle in a bag

What will you need:

- Plastic zip-lock style bag
- Permanent marker
- Water
- Blue food colouring
- Clear tape



[Click here to watch the video](#)

1

Design your bag by using the permanent markers to draw a sky. Remember to include clouds and the sun as these are important elements in the water cycle

2

Pour one or two drops of your blue food colouring into a cup and mix until the water turns blue. Carefully pour into the zip-locked bag and make sure it is closed so no water can escape!

3

Take your bag over to a bright sunny window for best results. Take two long pieces of tape to stick the corners of the bag up onto the window. Remember to press down tightly as we do not want the bag to fall!

4

You should see a change in your bag between two hours and 1 day this will depend on the amount of sun and the time of day you started. Eventually you will notice droplets of water sticking to the sides of the bag, some droplets will be higher up in the clouds others will begin to fall down like rain

So why does this happen?

The sun rays hit the window which heats up the water in the bag causing the water to transform into a gas through the process called Evaporation. Outside evaporated water vapor goes into the atmosphere, however in our bag it has no where to go and ends up sticking onto the sides. The water then turns back into a liquid as condensation, which then slides back into the pool of water below as "rain".

How to Make a Rain Gauge

What will you need:

- A glass jar
- Permanent marker
- Ruler
- Wire hanger (optional)
- Pliers (optional)



[Click here to watch the video](#)

1

Take your ruler and line the "0" up with the bottom of the jar. Make a mark on the jar for each centimetre (we went up to 8).

2A

OPTION 1: Congratulations, you have made a rain gauge! If you want to hang it up then jump to OPTION 2. All you need to do now is take your rain gauge outside and half bury it in the ground: it doesn't need to be too deep, just deep enough that it won't get knocked over.

2B

OPTION 2: This step is a bit tricky for small hands so please make sure you have an adult to help. You are going to turn the hanger into a cradle for the jar: simply bend the wire into the right shape for your jar to sit in and make sure there is also a bend that you can use to hang it up on a wall or fence. Depending on the thickness of your wire, you might need to use pliers for this step. For more detailed instructions visit <http://thepolkadottedturtle.com/make-your-own-rain-gauge/>.

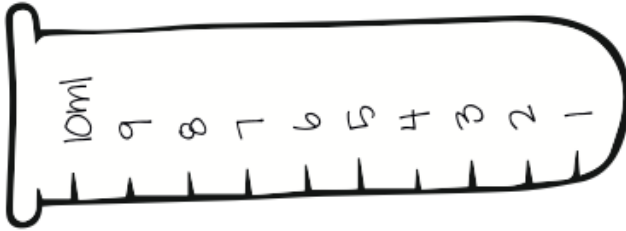
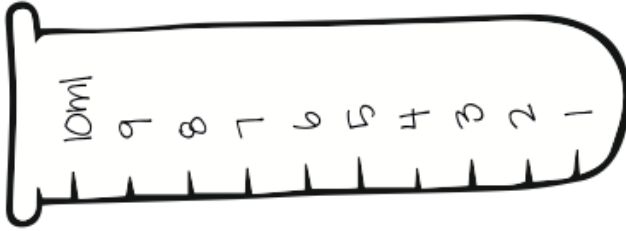
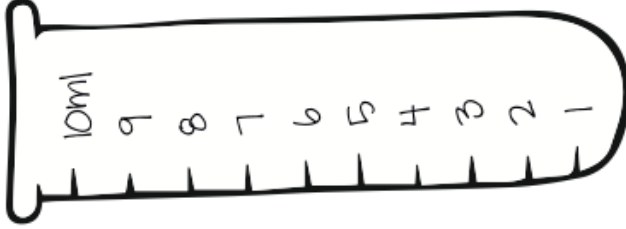
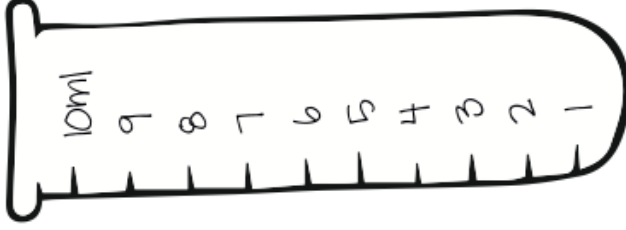
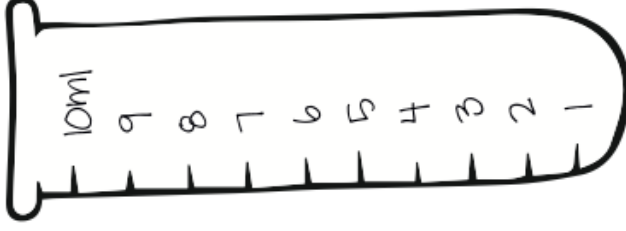
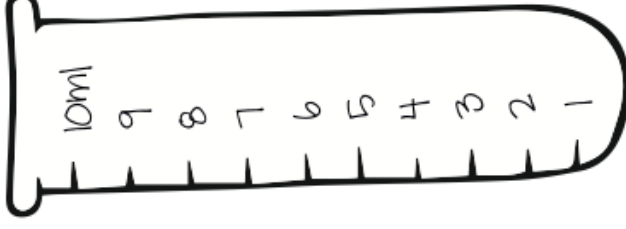
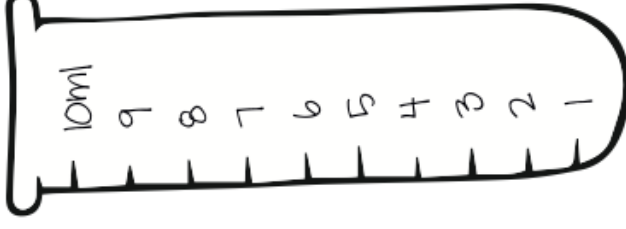
3

Now that your rain gauge is in place, either in the ground or hung up somewhere secure, you can start to track the rainfall in your garden. At the same time each day take a look at how far up the jar the water has reached- you can track this using the sheet on the next page!

Why is this useful?

Now that your rain gauge is in place, either in the ground or hung up somewhere secure, you can start to track the rainfall in your garden. At the same time each day take a look at how far up the jar the water has reached- you can track this using the sheet on the next page!

Weekly Rainfall Tracker

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
						

Calculate the total rainfall for the week:

Making Rainbow Rain

What will you need:

- A glass jar or vase
- Bowls or glasses
- Pipette
- Food colouring
- Shaving foam
- Water



[Click here to watch the video](#)

1

Fill each bowl or glass with some water and a different food colouring- you can use as many colours as you like, and can even mix them together to make even more!

2

Half or three quarter fill a glass jar or vase with cold water then top with a shaving foam "cloud".

3

Use the pipette to drop the rainbow water onto the shaving foam "cloud".

4

Once the cloud is full, rainbow rain will start to fall into the jar. This could happen really quickly or take a little bit longer depending on how thick your shaving foam cloud is and how far into the cloud you stick the pipette (the farther in you go, the sooner the rain will fall).

What does this teach us about weather?

Cloud formation happens when water vapor rises into the air. When this vapor hits cold air, it turns into tiny droplets of water. These droplets start to stick together and form clouds. When the clouds get full of water that they can't hold anymore, the water falls down as rain.

In this experiment, the clouds are the shaving cream and the food colored water is the rain. As you drop the colored water into the cloud the weight of the water forces itself through the cloud to "rain" down into the jar.

Credit: <https://www.thebestideasforkids.com/rain-cloud-in-a-jar/>