WEEK 16 - THE WATER CYCLE

Science in the News

One of Northern India's ice stupas, that serves as a water tower, storing winter meltwater for spring. Credit: Ciril Jazbec - The National Geographic

Parents:
For primary learners, work through our full 'the water cycle' lesson with your child. It is based around the national curriculum learning objectives found in the year 4 'States of matter' topic. Download here - Science Creates Outreach

For secondary learners, the contents can be discussed in more depth using the original online article.

GIANT ICE CONES HELPING THE WATER CYCLE

Ladakh, at the northern tip of India, beyond the Himalayas, is one of many places in the world that is suffering a problem with the water cycle. In the past they have lasted the Spring and Summer using melting winter snows and glaciers. However in recent years, by the time it gets to Spring, there is very little water, causing issues for farmers rearing goats and growing wheat and barley.

So what is causing this problem? Climate change. A rise of around one degree Celsius in winter temperatures during the past forty years has damaged Ladakh's water cycle forcing local people to think of innovative solutions, such as these ice stupas. Designed to be cone shaped to reduce the area exposed to the sun, the stupas stay frozen in the shade mountain peaks, and then melt slowly through the Spring and Summer, providing vital water to the surrounding areas.

Try it at home - Evaporate that puddle!

What do you need?

- Water
- A plastic cup or container
- A piece of chalk
- A timer or clock
- A sunny day (definitely not a rainy day!)

What am I learning?

Evaporation is a process where liquids change to a gas or vapor. Although we can't see that happening, we can see what is left behind and how long it takes. If you want to learn more about the science behind this, check out our lesson on our website - Science Creates Outreach

Instructions:

1.First, get a plastic cup and fill it with water.

2. Next, go outside into the sun and find a clear bit of tarmac, paving or pavement (always go with an adult if you are going out to the pavement).

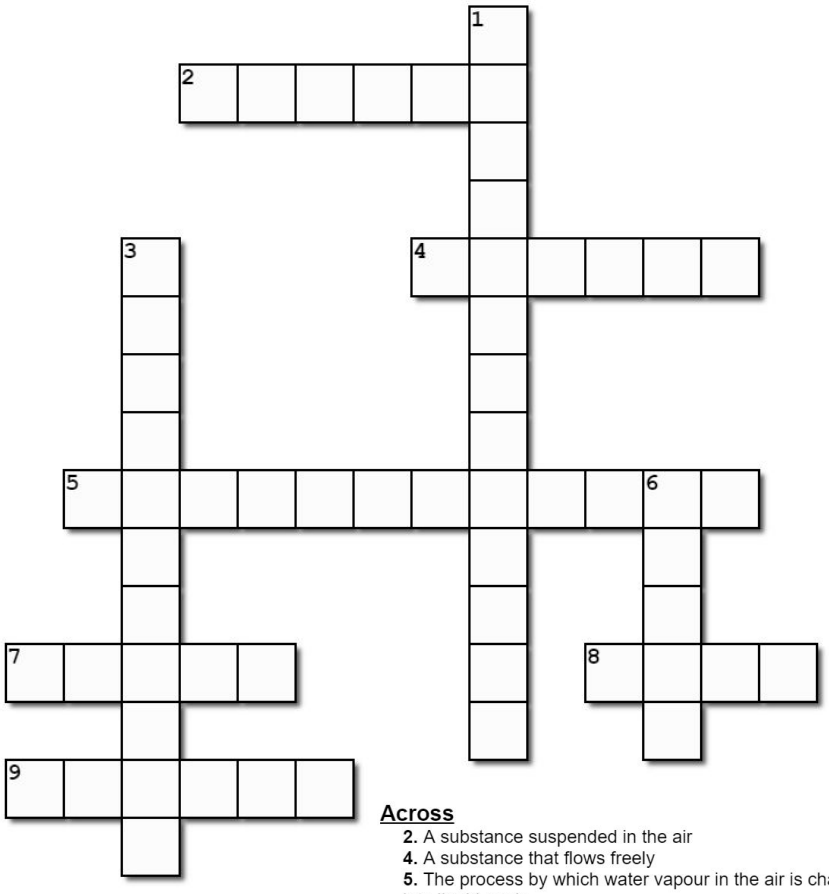
3. Then, crouching low, pour the water onto the ground to form a puddle.

4. After that, draw around the puddle with your chalk.

5. Turn your timer on now and set an alarm to observe your puddle at regular intervals e.g. every 20 minutes. Each time you visit the puddle, draw a new outline of the puddle.

6. Finally, turn your timer off when your puddle has evaporated. How long did it take? Can you explain where the water went to friend or family member?
Top tip - repeat this experiment with the same amount of water but spread out over a larger area (you could use your feet or a broom to spread the water out). Will this evaporate quicker or slower? Why?

WEEK 16: THE WATER CYCLE



Down

1. Water that falls from clouds in the form of rain, freezing rain, sleet, snow, or hail
3. The process of turning from liquid into vapour
6. A huge body of water on Earth

Across

2. A substance suspended in the air
4. A substance that flows freely
5. The process by which water vapour in the air is changed into liquid again
7. The liquid that forms our seas, rivers, lakes and ponds
8. The most common type of precipitation
9. Formed when air rises and the water vapour within it cools

Answers:1.Precipitation 2.Vapour 3. Evaporation 4.Liquid 5.Condensation 6.Ocean 7.Water 8.Rain 9.Clouds

Read, Watch, Ask

Have a read of our lesson to learn more about the water cycle.

What is the water cycle? Watch here to find out.

Got any questions about today's topic? Email us at info@sciencecreates-outreach.co.uk and we'll answer them!

Did you know?

The water you drink could have: flowed down a river, filtered through a giant oak tree, fallen to Earth as a hailstone, been splashed around in a muddy puddle and been drunk once before by an animal. But don't worry, this is what the water cycle is all about!

Be Inspired...

In this section we interview inspirational members of the Science Creates science community so that you can learn more about different jobs, what they involve and how you can do the same! This week we interviewed James from a company called NuNano.

What does NuNano do?
NuNano helps scientists and engineers see things that are so small they need to use a special kind of microscope. Sometimes the things they are looking at have never been seen before.

What is your job title and what do you do?
My job title is Managing Director. This means I have overall responsibility for everything NuNano does, from making sure our products work and our customers are happy, to looking after our staff and ensuring the company achieves its goals.

Do you like your job? Why?
Running a business that I have started from scratch is a fantastic job. Every day has challenges to overcome, but seeing the company grow is really rewarding. The best part has been building a great team of people to work with me.

How did you get your job?
At school I did mainly science and technology subjects. Working hard at school meant I could then go to university to study physics, where I found nanotechnology really interesting. After university I did a PhD to learn more about the microscopes used in nano technology. I had to be creative and solve problems and by doing this I realised I could help other people too, so I started NuNano.

Have you always wanted to be a scientist?
Growing up I always enjoyed making things. Now I get to make things that are really useful and help other people make new scientific discoveries.