

## KS3 Geography: Physical geography with Liz Bonnin

### What is the water cycle?

LIZ BONNIN: Hi, Liz Bonnin here. I'm a science, wildlife and natural history presenter and I'm passionate about conservation and the natural world, and today, we're here on the south coast by the stunning Seven Sisters cliffs, to talk to you about physical geography.

Now physical might make you think that the subject only covers solid things, like rocks and landscapes, but actually it also requires an understanding of the things that have an impact on our surroundings, and that is why we're now going to look at water.

Water is everywhere around us, as vapour, rain or clouds in the air, or in rivers and seas, and it's essential for all life, both plants and animals, to survive.

And it's constantly moving around in a process called *the water cycle*.

Now that's got nothing to do with floating bicycles, which is a shame, but in this clip Professor Ian Stewart does get to go on very impressive ride in a para-glider.

IAIN STEWART: The fresh water that we depend on begins its life in the oceans. As the sun's rays beat down on the surface of the sea they heat the water molecules until some evaporate. It's the start of an extraordinary journey.

You know, when water evaporates it feels like it vanishes into thin air, but although we barely notice it, water molecules are suspended around us all the time. Just that we're only aware of it when they clump together as cloud.

At any one time, less than a thousandth of the world's fresh water is up here in the atmosphere. It may not seem much, but this is what spreads water from the seas to the land.

A water molecule doesn't hang around up here for very long. In fact it spends less time up here in the atmosphere than in any other time in its journey. A mere nine days until a typical water molecule crashes to earth as rain.

For most of us, rain is perhaps the most familiar stage of the water cycle. But, notoriously, the least reliable.

When the water falls as rain, it joins a bigger system cascading and carving its way across the land surface as streams and rivers.

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IAIN STEWART: Look at that! Water absolutely everywhere!

Rivers and rain are the part of the water cycle that we depend on. Whoa! And yet they're only a tiny proportion of the world's fresh water. A measly 2% of all fresh water on the planet.

The rest of the Earth's fresh water is locked away down there, on the ground. *[As the para-glider lands]* Wahey! Oh, what a landing. The vast majority of it is stored as ice.

Most of the rest seeps deep into the earth, where it's known as ground water. Hidden away down here is the planet's second largest store of fresh water. But in the end, all water arrives back in the oceans, and the cycle begins again.

LIZ BONNIN: So there you go. Most of the Earth's fresh water supplies, over 65%, are frozen in the ice caps and glaciers. There's a huge amount, over 30%, trickling around in the ground and rocks beneath us, and rivers and streams only account for tiny amount. A drop in the ocean!