

Let's Investigate Water

Steps for Learning 9

Geography KS2 Year 3



Let's Investigate Water: Steps for Learning 9

Geography

Key Stage 2 Year 3

Key Questions

- does anyone own our rivers?
- do rivers flow into or flow from the sea?
- what kinds of landscape does water create?

Learning Outcomes

- to understand that water flows from high to low and rivers end in the sea/ocean
- to measure the speed at which water flows and understand that this can vary
- to consider others' viewpoint

Curriculum Links

Purpose and Aims

- build geographical knowledge, understanding and skills in order to explain how the Earth's features at different scales are shaped, interconnected and change over time.

Human and Physical Geography

- describe and understand key aspects of mountains and the water cycle

Geographical Skills and Fieldwork

- use fieldwork to observe, measure, record and present the human and physical features in the local area

Big Ideas

- place
- space
- environment

Formative Assessment Opportunities

- flow speed calculation
- instructional video



Keywords

Source. Mouth. These are also on the previous Step for Learning.

Place. Slope.

These can also be found at the end of this PDF in printable format for your working wall.

Resources

- maps (to look at your local river or stream and find its source or find where it enters the sea)
- flow speed calculation (on slide 9 of the PowerPoint)

Activities

1. Revisit: 'Do rivers flow into or flow from the sea? How do we know?' From the enquiry wall.
2. Ask the pupils: 'Can we find out where the River _____ (use the closest stream or river to your school) goes? Locate it on a map and follow it until either it disappears (this will be the source and is most likely to be in an upland area which could be many miles from school) or it reaches the sea (river mouth) where it is swallowed up. The water will always flow towards the sea, as sea level is measured as 0m.
3. Think back to Steps for Learning 6 and ask: 'Did the water flow uphill or downhill?' Develop this to think about what force might be acting on the water (gravity) and whether it is more likely for rivers to start on high ground (in the mountains) or on low ground.
4. Carry out the 'Pooh-Sticks' experiment to reinforce the fact that water flows in a specific direction. Visit your nearest stream or river and play "pooh sticks" to work out which way the source (higher ground) and mouth (sea) are. If this is not immediately practical, look at the image on the PowerPoint and discuss what is happening (who knew there was a World Pooh Sticks championship?!).
Then discuss that the sticks don't always move at the same speed, but do always move in the same direction. Prompt discussion as to why the stick might slow down and speed up. This is related to the water depth, debris and blockages, as well as whether the water is going around the outside of a bend (faster) or the inside of the bend (slower).
If you're holding the discussion in the classroom, the children may need more guidance than if you're able to do this in the field! But as soon as you are able to, this is a fun practical activity for children to carry out when you are next out 'in the field'.



5. Now carry out the 'Dog Biscuit' experiment to find out how fast water flows. You will need:

- free-flowing water that is accessible and safe
- tape measure
- two sticks (to help you mark the start and end point)
- a dog biscuit (or something else that you can throw in the water, that you can lose, that is biodegradable and environmentally-friendly)
- a stopwatch

If you don't have a suitable piece of water locally, perhaps you could carry this out on a fieldwork day out. It's great fun! And also involves geography, maths and science.

The experiment is carried out using the following steps:

- Step 1: Choose your location.
- Step 2: Mark your starting point.
- Step 3: Measure 5 metres
- Step 4: Mark your end point.
- Step 5: Throw in your dog biscuit (or other object). Make sure you do this ahead of your starting point, to give time to prepare your timing.
- Step 6: When your dog biscuit (or other object) passes your start point, start your stopwatch.
- Step 7: When your dog biscuit (or other object) passes your end point, stop your stopwatch.
- Step 8: Ask the children how long the dog biscuit took to travel 5 metres. They can then work out how fast the water is flowing.

A discussion can follow around what might cause the water to flow faster. Perhaps there is more water pushing it along, due to heavy rainfall further up the stream - it might not even rain around school for this to happen! What might happen if there is more water flowing or perhaps there is a narrowing (faster point) of the river, a shallowing (faster point) of the river or a blockage (slowing, but at the flow point faster as in effect this is a narrowing/shallowing).

What about at a bend? As it is further around the outside of the bend, the water moves faster. Therefore, this often causes erosion, for example, cliffs. Whilst on the inside, the water has less distance to travel, slows down and therefore often drops or deposits part of its load, for example mini-beaches.



6. You could ask your pupils to produce a homemade video to help others measure and understand the flow of water in their local stream.
7. Ask: 'Does anyone own our rivers?' Read the article, ['Will lockdown easing see more of us using rivers?'](#) - and discuss. 'What problems might this cause?'

PowerPoint Presentation

The accompanying PowerPoint presentation has 13 slides to support the activities:

- Slides 1 and 2 introduce the lesson.

Activity 1

- Slide 3 revisits the question from the previous lesson, 'Do rivers flow into or flow from the sea?'

Activity 2

- Slide 4 features one of our national rivers, but you could replace it with an image of one of your local rivers.

Activity 3

- Slide 5 revisits the question from Step for Learning 6, 'did the water flow uphill or downhill?' It acts as a visual prompt to promote the discussion. The waterfall is first displayed upside down, and will right itself as you animate the presentation.

Activity 4

- Slide 6 supports the 'Pooh-Sticks' experiment, ahead of when you are able to do this for real with your pupils.

Activity 5

- Slides 7 to 11 support the 'Dog Biscuit' experiment. Again, this is a useful introduction ahead of doing this for real in the field.

Activity 7

- Slide 12 supports the discussion, 'Does anyone own our rivers?'
- Slide 13 is the closing slide.



Let's Investigate Water KS2: Keywords Flashcards



Source

Mouth

Place

Slope



Place



Slope

