

Let's Investigate Water

Steps for Learning 7

Geography KS2 Year 3



Let's Investigate Water: Steps for Learning 7

Geography

Key Stage 2

Year 3

Key Questions

- what happens to the ground when it rains?
- what if the rain falls straight on to concrete or tarmac - how is this different?
- why does the rain outside school flood the road (refer to another road if you're one of the lucky few without such a road).

Learning Outcomes

- to better understand what happens when rain (precipitation) falls on the ground
- to know that the surface on which the rain (precipitation) lands can have an effect on what happens to the water.

Curriculum Links

Purpose and Aims

- deepen pupil's understanding of the interaction between physical processes and of the formation and use of landscapes and environments

Locational Knowledge

- name and locate
- key topographical features of the UK

Place Knowledge

- understand geographical similarities and differences

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

Big Ideas

- environment
- place
- scale



Formative Assessment Opportunities

- video explanations of erosion and deposition
- interconnection between surface and likelihood of flooding

Key Vocabulary

Human Geography. Weather. These are also on the previous Step for Learning.

Scale. Flooding.

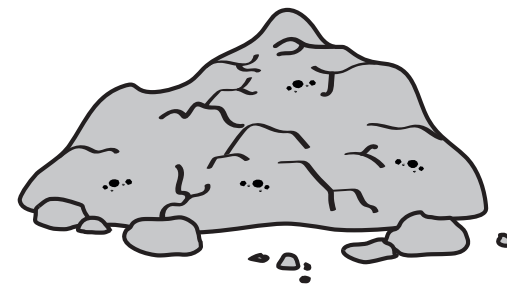
These can be found at the end of this PDF in printable format for your working wall.

Resources

- plyboard or plastic sheet
- soil, gravel, rocks
- water carriers
- atlas
- plastic tubes (could be 1L plastic bottles with top and bottom cut off)

Activities

1. Create a 'model mountain' in the grounds using soil, gravel and rocks.
This works best on a large sheet of plyboard or a piece of plastic sheeting.
Pupils can take it in turns to pour cups of water down the 'mountain' and make observations about the course of the water.
Discuss with the class that the water will always travel downhill and as it moves it will take some of the soil/material with it.
This is called 'erosion' and when the water is unable to 'transport' the 'sediment' any further it will drop or 'deposit' it.



2. Instruct pourers to mimic light 'spring' rain and observe what happens. Contrast this with a heavy storm rain. The pupils could record short videos to explain what happens. They could repeat the process on individual trays and explain how destructive heavy rain can be. Ask the children what would happen if we increased the scale and this was happening across a large landscape such as your whole neighbourhood?

What if the rain falls straight on to the board (now representing concrete and tarmac)?

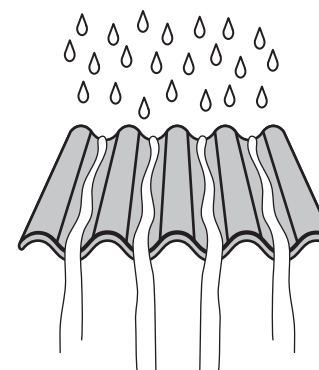
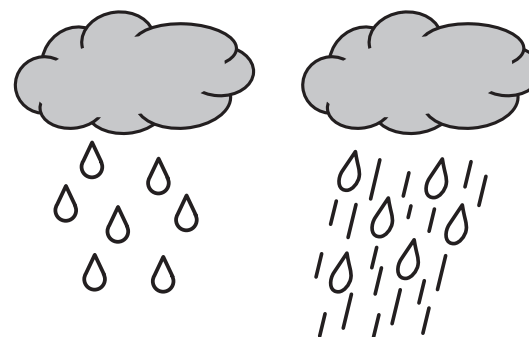
Does it drain away faster or more slowly?

What would happen if a hundred or a thousand boards all drained into the same place...?

What if we increased the scale by thousands of times, so the mountain was as high as the highest peaks in the UK? (Ben Nevis, Snowdon, Scafell Pike, Slieve Donard). Ask the children to locate these on a map or within an atlas.

Then ask the pupils to search for other mountainous areas in the UK, Europe and across Earth. Can they find the highest point Europe (Mt Blanc) or in the world (Mt Everest)?

How much material would be eroded, transported and deposited?



3. Ask pupils to consider: 'Why does the road outside school flood every time it rains' (Choose a well-known big puddle close to school to use as an example - everywhere has one!)

To develop thinking around this, pupils could experiment with how well water soaks into different surfaces by pouring an equal amount of water into a tube placed over a range of different surfaces. They then time how long it takes to soak in.

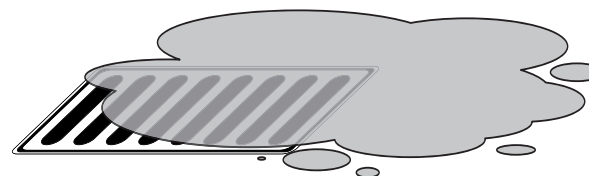
Surfaces might include:

- soil
- grass
- sand tray
- gravel tray
- as well as the playground and AstroTurf or fake grass

The last two will almost definitely leak out of the bottom and spread out rather than soak in. This is an important learning distinction as the surfaces are impermeable and the water will either pool up, which is in essence flooding (and then evaporate), or if there is a slope it will run-off, perhaps pooling (flooding) somewhere else.

Ask the pupils to present how this is part of the reason why puddles appear.

4. Ask pupils: 'Do human settlements need flowing water? If so, why and what might happen if they don't have any?' Add their responses to the enquiry wall.



PowerPoint Presentation

This lesson is practical and discussion-driven. The PowerPoint can be used as visual displays to enhance the investigations. The photographic images can also help bring a 'window on the world'. The slides are as follows:

- Slides 1 and 2 introduce the Step for Learning.
- Slide 3 can help illustrate Activity 1. You can display before beginning the investigation, and use the animated questions and answers beforehand. Or you could remove the animations and leave the slide up during or afterwards, to reinforce the key learning points.

Slides 4 to 7 can help support Activity 2 in the following ways:

- Slide 4 displays two 'real life' mountains, one under a misty, light drizzle, the other under heavy rainfall. This can help make the connection between the children's investigation and rainfall on a real landscape.
- Slide 5 displays a flooded, tarmac road, and can be shown after the discussion about rainfall onto the board, to reinforce the learning.
- Slide 6 displays the highest peak in each nation of the United Kingdom.
- Slide 7 displays the highest peak in Europe (Mount Blanc) and the highest peak in the world.
- Slide 8 introduces Activity 3: 'why does the road outside our school flood every time it rains?' You could substitute this photo with a photograph of your school's 'well-known' puddle.
- Slide 9 supports Activity 4. It features four key cities across the world, all of which grew up on a river, and can help reinforce the discussion.



Let's Investigate Water KS2: Keywords Flashcards



**Human
Geography**

Weather

Scale

Flooding



Scale



Flooding

