

Let's Investigate Water

Steps for Learning 4

Geography KS2 Year 3



Let's Investigate Water: Steps for Learning 4

Geography

Key Stage 2
Year 3

Key Question

- what happens to our dirty water?

Learning Outcomes

- to understand that water is not always clean and 'potable' (drinkable)
- to understand how water might be purified

Curriculum Links

Purpose and Aims

- equip pupils with knowledge about resources

Human and Physical Geography

- describe and understand key aspects of the water cycle

Big Ideas

- interconnections
- environmental impact

Formative Assessment Opportunities

- view water clarity
- fact and fiction selection

Key Vocabulary

Water cycle / Hydrological cycle. Evaporation.

These are also on the previous Step for Learning.

Observation.

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



Resources

- videos
- plastic bottles
- gravel
- sand
- cotton wool
- cloth/filter paper
- charcoal

Useful Links

Watch these videos ahead of your lesson. These can then be shown to the children during the Activities.

Bristol water: How to make a water filter

<https://www.youtube.com/watch?v=-c1xM2hhfNI>

Wessex Water: How we treat your tap water

<https://www.youtube.com/watch?v=SdN3g85zfzM>

Then provide the BBC article 'Water pollution: How clean are the UK's rivers and lakes?'

<https://www.bbc.co.uk/news/science-environment-59898988>



Activities

1. Revisit enquiry wall question: 'How is our dirty water from washing machines, baths and toilets made clean before returning to rivers and seas?'

2. Present the pupils with beaker/s of dirty water. You could even suggest that there is something wrong with the school's water system and this is coming out of the tap(!). The school caretaker needs to clean the floor in the hall after lunch and will need some clean water.

How can the children help?

How could they clean the water?

Provide a range of equipment:

- plastic bottles
- gravel
- sand
- cotton wool
- cloth/filter paper
- charcoal

Now ask the pupils to problem-solve. Prompt them to remember the video they watched in Steps for Learning 2, 'Our water's journey'.

Once they have planned how to make their filter, ask the pupils to share their ideas. Then show them the first two and a quarter minutes of ['How to make a water filter'](#) before creating them.

3. Ask the pupils: Is there an element of self-purification within the water cycle? Could we prove it? Safety note: don't forget to remind the children that filtered water is OK to clean floors but would NOT be safe to drink, due to the microscopic viruses or microbes and dissolved chemicals in the water. Think about what happens when evaporation occurs; any dirt, salts and or chemicals in solution with the water will be left behind.

Take the pupils outside and ask whether they can find any evidence of where puddles have been in the past. Dirty circles are quite often left when puddles dry up.

As a class, pupils could replicate this by pouring beakers of muddy water and salty water on to the playground and observe over the course of a day how the water evaporates, but the mud and salt stay. If the weather is poor, this could be done by leaving the dirty water in shallow vessels (the bigger the surface area the quicker it will evaporate) on windowsills.



4. Plan a trip to a local water purification or sewage plant.
5. Ask the pupils:
Is water cleaned after we have used it?
Would you swim in a UK river?
You might discuss how cold it is, as well as what else might be in the water.
6. Fact or Fiction - Only 14% of England's rivers are clean. Ask the pupils why they think this is. Then provide the BBC article ['Water pollution: How clean are the UK's rivers and lakes?'](https://www.bbc.co.uk/news/science-environment-59898988)
<https://www.bbc.co.uk/news/science-environment-59898988>
Ask the pupils to prepare a 'Fact or Fiction' file, using facts from this article - and making up their fiction points.
7. Ask pupils: 'What if we didn't have enough clean water?' and record responses on the enquiry wall.

PowerPoint Presentation

Much of these Steps for Learning are practical, and getting the children out and about. So the PowerPoint presentation can be used as much as a visual introduction to your activities, as a learning tool. The slides are as follows:

- Slides 1 and 2 introduce the lesson.
- Slide 3 can be displayed during Activity 1, when you revisit the enquiry wall question, 'how is our dirty water made clean?' which ended the previous Step for Learning.
- Slide 4 can be displayed during Activity 2. The images of dirty water in the real world help illustrate why water could become dirty, and should stimulate the discussion. It provides the link to 'how to make a water filter'.
- Slide 5 supports Activity 3, by helping illustrate how evaporated water can be self-cleaning.
- Slide 6 supports Activity 4. It features an image of a sewage plant, to set up planning for the forthcoming visit. You could replace this with a photo of the place you will visit with your class.
- Slides 7 and 8 support Activity 5, the discussion about swimming in UK water.
- Slide 9 sets the scene for Activity 6, 'Fact or Fiction: why do pupils think only 14% of England's rivers are clean?'
- Slide 10 introduces the discussion in Activity 7, 'what if we didn't have enough clean water?'
- Slide 11 is the closing slide.



Let's Investigate Water KS2: Keywords Flashcards



**Water cycle /
Hydrological
cycle**

Evaporation

Observation



Observation

