

Let's Investigate Water

Introduction Notes for Teachers

Geography KS2 Year 3



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Rationale

Water is the ultimate natural resource. The giver of life. More than two thirds (71%) of the Earth's surface is covered by water and in its solid, liquid or gaseous form it drives the weather, climate and therefore biomes of the planet as well as shaping the landscape through processes such as erosion and deposition.

Water, or the lack of it, is also fundamental in the location and success of settlements, transport routes, trade, agriculture and tourism. It is at the heart of many cultural, social and environmental issues through the multiple connections it makes between the human and physical world.

Aim

This unit builds on Key Stage 1 learning about Earth's hot and cold locations as well as the study of weather. The unit is designed to lay the foundations for learning across Key Stage 2, providing the building blocks for thinking about settlement, mountain environments, rivers, natural disasters, distribution of natural resources, biomes and climate change.

Planning for impact

Every school community is unique, both in terms of its physical setting and educational needs. Although the following steps for learning are designed to engage pupils from any location, the following approach should be taken:

'adopt' 'adapt' 'embed'

Planning for progression

Every pupil will have a wealth of academic and personal experiences and interactions with the world and its water. It is imperative to measure and build on these collectively and individually. It is also important to have a clear vision of how the learning that takes place in each lesson will form the building blocks for future learning.

Geographical thinking and speaking

Have a roleplay area within the classroom (e.g. a travel agents) with maps and aerial photographs of iconic waterfalls, lakes, glaciers, oceans, etc. A tablet with Google Earth, materials for map creation, compasses. Display key geographical language (human, physical, environmental and directional).

Enquiry

The formulation and investigation of questions is key to finding out about the world and its people. Closed questions allow the retrieval of facts and information whilst more open-ended questions allow pupils to actively gather and explore information and perspectives, as well as informing their own thoughts and opinions. Set up an enquiry or working wall.

Mapwork

Maps form an integral part of primary geography and pupils should be provided with opportunities to use, interrogate and create maps. This can include table maps such as Ordnance Survey maps, 3D maps (globes) or online versions which can be organised, viewed and created from different perspectives.

Sequencing

It is important to build the learning towards an end point that challenges the learners. This is the summative assessment (SfL 10) with SfL one to nine providing opportunities to develop the necessary skilled knowledge and understanding to apply to a related problem.

Fieldwork

Many of the steps include opportunities to work practically within the school grounds as well as visiting a local water plant. These are designed to develop observation and first-hand experiences of place, space and environment. This makes the learning relevant, concrete and memorable.

Language and communication

Encouraging the development of language through the use of story and picture books as well as providing opportunities to discuss observations, emotional responses, opinions and perspectives of localities at different scales.

National Curriculum Coverage

Purpose and Aims

- inspire in pupils a curiosity and fascination about the world and its people
- equip pupils with knowledge about diverse places, resources, natural and human environments, together with a deep understanding of one of the Earth's key physical processes
- deepen pupil's understanding of the interaction between physical processes and of the formation and use of landscapes and environments
- 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
- increase pupil's competence in the geographical skills needed to:
 - collect, analyse and communicate with a range of data gathered through experiences of fieldwork that deepen their understanding of geographical processes
 - interpret a range of sources of geographical information, including maps, diagrams, globes and aerial photographs
 - communicate geographical information in a variety of ways

Key stage 2 - Subject content

- **Locational knowledge**
 - name and locate counties and cities of the United Kingdom, geographical regions and their identifying human and physical characteristics, key topographical features (including hills, mountains, coasts and rivers), and land-use patterns; and understand how some of these aspects have changed over time
- **Place knowledge**
 - understand geographical similarities and differences through studying the human and physical geography of a region of the United Kingdom

- **Human and physical geography**
 - describe and understand key aspects of:
 - physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains and the water cycle
 - human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including water
- **Geographical skills and fieldwork**
 - use maps, atlases, globes and digital/computer mapping to locate and describe features studied
 - use the eight points of a compass, four and six-figure grid references, symbols and a key (including the use of Ordnance Survey maps) to build their knowledge of the United Kingdom
 - use fieldwork to observe, measure, record and present the human and physical features in the local area using a range of methods, including sketch maps, plans and graphs, and digital technologies

Geographical Concepts:

The Unit of Work will be underpinned by eight geographical '**Big Ideas**' as outlined by the Geographical Association in: '*Leading Primary Geography: The essential handbook for all teachers.*'



Place - what is it like here, what happens here, our emotional response



Space - location, layout and landuse patterns



Environment - physical and human features and processes, change



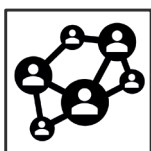
Scale - school grounds, local neighbourhood, wider settlement



Environmental impact - cause/effect, sustainability, emotional response



Cultural awareness - diversity, identity, values



Interconnections - features, places, events and people

Source: adapted from Leading Primary Geography: the essential handbook for teachers p17-27 Geographical association

Broader concepts including: Form, Pattern, Contrast, Perspective, Movement, Conflict, Equity, Change and Sustainability might also provide lenses through which geographical learning can be explored through this unit of work.

Assessment

Formative assessment

Thinking, talking and recording like a geographer can be defined as observing, recognising, describing and explaining geographical information. Throughout this unit there will be opportunities to assess the following:

- **Observe:** Can pupils make first hand observations through a range of practical experiences to enhance their conceptual and abstract understanding?
- **Describe and explain:** Can pupils demonstrate understanding of the water cycle and its influence and effect on human society and physical landscape?
- **Use and construct:** Can pupils use a range of maps at different scales and construct basic maps with symbols and a key?
- **Compare:** Can pupils recognise the diverse uses of water and the interconnections between human and physical processes in its distribution?
- **Personal Development:** Can pupils develop empathy and understanding around issues such as water scarcity and inequitable supply of clean water?

Summative assessment: The culmination of this unit will be for pupils to apply their knowledge and understanding to debate a provocation that requires them to draw on the cumulative knowledge built across the first nine Steps for Learning.

- **Identify:** Can pupils identify the key interconnections between the human and physical processes related to the provocation used?
- **Justify:** Can pupils identify simple impacts, both positive and negative, around the provocation and provide reasoning why these might elicit a range of emotional responses, and what these might be?
- **Explain:** Can pupils use basic geographical vocabulary to explain their thinking? (e.g.- 'Everyone has the right to access clean water and if it is 'metred' then it might become a rich person's resource, especially when thinking internationally.')
- **Personal Development:** Can pupils develop, share and justify their opinions and values around geographical issues?

Key Questions	Core Subject knowledge	Geographical thinking
Where does water come from?	Why is water scarcity an issue?	Where do people get their water?
What happens to our dirty water?	Are people treated fairly?	What if there is no (clean) water?
Where is water found?	Where does all the rain go?	What kinds of landscape features does water create?
Why is water so important?	What would it be like to have no water at school?	Should water be shared equally?
How do we use water?	Why doesn't the planet run out of water?	Do rivers flow into or flow from the sea?
What is the water cycle?	Does anyone own our rivers?	How can we conserve water?

Key Vocabulary

Map	Slope	Precipitation	Fieldwork
Scale	Vegetation		Place
Symbol	Flooding		Observation
Key	Weather		Environment
Physical Geography	Drought		Sustainable
Human Geography	Irrigation		Transport
Evaporation	Water cycle /		Erode Deposit
Condensation	hydrological cycle		Source Mouth
Surface run off	North		
Infiltration	South		
Transpiration	East		
Soil	West		
River	Landmarks		

These are provided as flashcards at the end of this PDF, and as posters on the accompanying word document. Each individual Step for Learning also provides its respective keywords as flashcards and posters for the learning wall.

Subject Knowledge for teachers

Sense of place: A good geography curriculum should be both broader and deeper than the National Curriculum. So, although the National Curriculum subject content for geography makes little reference to the importance of pupils developing a sense of place, it is a central tenet of quality teaching and learning. Ofsted recognise the importance of sense of place within geography's disciplinary knowledge and describe building a sense of place as:

'...the geography content that children learn can allow greater awareness of people, the environment, the relationships between them and the child's place in this relationship. This sense of belonging is recognised as being significant in children's social and emotional development and in preparing them for more formal learning.'

Research review series: geography, Ofsted, 17 June 2021

Maps and mapping: the unit of work focuses on the school grounds and local area. Detailed maps of the UK are available from [Ordnance Survey](#) in both paper and electronic format. Online mapping programmes such as [Google Earth](#) and [Google Maps](#) as well as those that use Ordnance survey ([Digimaps](#) - you can route plan and annotate, add text, images and symbols and print off OS maps) as a base map are great tools for classroom use. [App Spot](#) allows you to simultaneously view the Ordnance Survey and satellite map of an area side by side.

Settlements: teachers will find it beneficial to include elements of the information below within discussions across the unit of work, in preparation for possible units of work where settlement features more centrally:

- settlements are places where groups of people live and work
- settlements often 'grow' up or develop beside water in the form of streams, rivers, lakes or seas and oceans

- settlement infrastructure includes access to water for drinking, cleaning and personal hygiene, food preparation etc. This is not the same across all settlements nor across all nations, and some communities face a growing pressure to source clean, fresh water
- settlements are usually shaped by the physical landscape, such as river valleys and flood plains and their change over space and time is influenced by human and physical factors including the need for water

Rivers: all rivers start at their source, which might be a melting glacier, upland bog or lake, and flow downhill, gradually increasing in size as tributaries join together before ending at the mouth where they discharge into a lake, sea or ocean.

Rivers in upland areas have high amounts of energy generated by the water running down steep slopes. That energised water wears away or erodes the landscape through which it passes to create features such as V-shaped valleys, waterfalls and rapids. As the gradient of the slopes lessen, the river's energy lessens. However, during times of heavy rainfall in the upland areas this can cause flooding of the flat lowland areas within the river system. This can be exacerbated by human development which often creates an impermeable layer across the landscape, meaning that water both reaches and floods out of the river channels faster.

Water or hydrological cycle: the Earth is a closed system where water is constantly being recycled through the ground, the oceans and the atmosphere. The routes, and therefore the speed of the transfers, can vary greatly, with some water being stored for thousands of years before moving through the system again. The changes of state between liquid, gas and at times solid are key elements within the water cycle. The diagram within the PowerPoint classroom presentation in Step for Learning 3 demonstrates the movement and processes that drive the cycle.

Steps for Learning:

The unit of work has been carefully sequenced to support pupils build their understanding of place, focusing on the concrete understanding that they can develop through first hand experiences in their school, its grounds and the local neighbourhood. Each 'Step' builds on the previous one/s as well as providing opportunities for pupils to integrate this with their prior learning.

How to use the planning

Due to the practical nature of many of the lessons, there is enough content within the unit for an in-depth study of water, two hours per week, across a whole term. However, there is scope to narrow some of the lessons as required. The plan is organised into a sequence of 'Steps for Learning' (SfL), where in reality each SfL resembles a short flight of steps, building the learning towards a predetermined, but open ended, exit point. Within most SfL there is more than a single lesson's work, allowing teachers an element of choice over which elements are covered now and which might be left out to, maybe, form part of future related units.

Key Questions

These guide the content of the steps and should be modelled by the teacher throughout.

Age range Step number

This Unit of Work is aimed at Year 3. However, you could teach it in Year 4, to better fit in with other units currently being taught in your school.

Learning Outcomes

These form the main learning threads through each 'step'. They state the main learning points for pupils to take away.

Resources

A list of what needs to be organised ahead of each SfL.

Suggested Activities

A range of practical, discursive, experiential and written tasks. These do not all have to be completed and are deliberately not allocated a time to allow for adaption as well as adoption from the start.

Curriculum links

The six core elements of the English National Curriculum are:

- **Purpose and aims**
- **Locational knowledge**
- **Place knowledge**
- **Human and physical geography**
- **Geographical skills and fieldwork**
- **Big ideas**

Each Step for Learning provides an overview of the core elements and the 'Big Ideas' of Geography within each one. These will be central to the Step for Learning but others might also be re-enforced or introduced through the completion of the activities or subsequent discussions.

Formative Assessment

Suggestions for how teachers might continuously monitor learning to help inform them of any areas which require consolidation.

Summative Assessment

This Step for Learning provides an opportunity for pupils to connect their thinking and demonstrate their learning.

Let's Investigate Water KS2: Keywords Flashcards



Map

Scale

Symbol

Key

**Physical
Geography**

**Human
Geography**

Evaporation

Condensation

**Surface
run off**



Let's Investigate Water KS2: Keywords Flashcards



Infiltration

Transpiration

Soil

River

Slope

Precipitation

Vegetation

Flooding

Weather



Let's Investigate Water KS2: Keywords Flashcards



Drought

Irrigation

**Water cycle/
Hydrological
cycle**

North

South

East

West

Landmarks

Fieldwork



Let's Investigate Water KS2: Keywords Flashcards



Place

Observation

Environment

Sustainable

Transport

Erode

Deposit

Source

Mouth

