

Human Interaction with Water

This learning pack has a focus on human interaction with water. The investigation question is 'how do humans interact with water?'

During the preliminary lesson, the main intention is to show pupils how human interaction with water has changed over time. This focuses on this history with pupils forming their own opinions to argue which was the most important evolution.

Whilst at the field centre, pupils will examine how technology has changed how we use and access water over time. This will include 4 examples with differentiated worksheets for LPA pupils.

In the follow up lesson, the resources intend a recap from the museum, alongside a comparison of our water usage and technology to another area - a rural village within Bangladesh.

The aim is to show how human interaction with water changes over time and space.

LESSON PLAN 1

Date		Time:	No. of pupils:
Subject	Geography	Group:	Usual teacher:
Lesson Focus: Human's interaction with water over time.			
Intended learning			
Planned Learning Objectives By the end of the lesson pupils will:- 1. Identify how humans have used and accessed water over time.	Intended learning outcomes Grade 1 – Identify humans uses of water. Grade 2- Explain how human use and access to water has changed over time. Grade 3 – Justify which development in water usage was the most important.	Assessment of learning objectives Teacher led class discussion after starter. Teacher observation of timelines. Peer review or marking of writing task. Plenary responses.	
Literacy focus including key words Extended piece of writing Reading information on a card sort		Numeracy focus Dates	
ICT opportunities N/A.		SMSC Opportunities Past cultures/social implications of the development of this technology.	
Homework N/A.			

Additional Planning

Resources required: (resources, equipment , preparation)

Timeline card sort this can be found at the end of the pre lesson powerpoint

Meeting Individuals' needs (issues of differentiation and diversity)

Variety of tasks

Peer support

Extension/challenge tasks

Planning for classroom support (technicians TAs etc.)

Health and Safety / Risk assessment (key points)

PH Dairy Allergy otherwise

LESSON PLAN

Lesson Plan				
Time	Teacher activity (20%) Including key teaching points <ul style="list-style-type: none"> • Key Questions • Key words • Reminders 	LOs	Learner's activity (80%) Including key learning points	Purpose
	<p>Connection: Group mind maps</p>		<p>Pupils work as a group to create a mind map of different uses of water by humans. Extension question available.</p>	<p>Assess prior knowledge.</p>
	<p>Activation: Timeline card sort and timeline creation</p>		<p>Pupils will sort through cards to arrange them into chronological order.</p> <p>Teacher reveal correct sequence.</p> <p>Pupils will create a timeline, creating a symbol for each point.</p>	<p>Understand changes over time.</p>

	<p>Demonstration:</p> <p>Higher order thinking pair work</p>		<p>Pupils will be paired off. There will be a question on the board. One pupil, has 30 seconds to state and justify their answer to the question. The other pupil then has 30 seconds to contradict the original response. Each pupil then has a further 30 seconds to defend their point.</p> <p>Extended writing task which could be peer reviewed afterwards.</p>	<p>Differentiation by peer support.</p>
	<p>Consolidation:</p> <p>Create three questions of increasing difficulty about learning from today's lesson.</p>		<p>Pupils will create three questions of increasing difficulty about learning from today's lesson. If time allows, pupils could ask other pupils their questions.</p>	<p>To assess learning.</p>

Teaching and Learning project PGCE
The Waterworks Museum in Hereford

How is water used by humans ?
Pre -visit Lesson



Human interaction with water



With the people on your table, create a mind map about all the uses of water by humans.



Extension - which use is the most important and why.

How is water used by humans?

Learning objectives

- Identify what we use water for
- Explain how human use and access to water has changed over time.
- Justify which development in water usage was the most important.



How is water used by humans?

1. With the person next to you, sort the cards into a timeline of the development of water usage and access over time in the UK.

2. In your book, create a timeline of the development of water usage and access over time in the UK. Create a symbol to represent each event.



How is water used by humans?

1. Pair up with a person on a different table - give them a high five
2. Number yourselves, 1 or 2
3. Number 1's, you will have 30 seconds to justify your answer to the question below.
4. Number 2's, you will then have 30 seconds to offer a counter opinion.
5. Number 1's, will have 30 seconds to respond.
6. Number 2's will have 30 seconds to respond.

What was the most
important development of
water use or access for
humans?



How is water used by humans?

In your book, justify which development of water usage or access you think was the most important.



Extension - which development can we live without and why?

Become the quiz master



Write three questions of increasing difficulty related to what you have learnt today.

LESSON PLAN 2

Date		Time:	No. of pupils:
Subject	Geography	Group:	Usual teacher:
Lesson Focus: Human's interaction with water over time.			
Intended learning			
Planned Learning Objectives By the end of the lesson pupils will:- 1. Identify key pieces of technology which have changed the way the UK uses water.	Intended learning outcomes Grade 1 – State the technology that changes water use. Grade 2- Describe the technology that changes water use. Grade 3 – Explain technologies, discussing advantages and disadvantages. Grade 4 – Evaluate the technology, deciding which is the most important.	Assessment of learning objectives Completion of the extended piece of writing. Assessment against what they already know from the beginning of the lesson.	
Literacy focus including key words Extended piece of writing Reading information around the museum		Numeracy focus Use of time.	
ICT opportunities N/A.		SMSC Opportunities Past cultures/social implications of the development of this technology.	

Homework

N/A.

Additional Planning

Resources required: (resources, equipment , preparation)

A3 Work Sheets – Higher and Lower Ability.

Meeting Individuals' needs (issues of differentiation and diversity)

Scaffold for higher and lower ability students, different levels of blooms being met (describe/evaluate), some extension opportunities.

Visual aids to be created by students.

Planning for classroom support (technicians TAs etc.)

Health and Safety / Risk assessment (key points)

PH Dairy Allergy otherwise

LESSON PLAN

Lesson Plan				
Time	Teacher activity (20%) Including key teaching points <ul style="list-style-type: none"> • Key Questions • Key words • Reminders 	LOs	Learner's activity (80%) Including key learning points	Purpose
	Connection:		Ask students to jot down any ideas they can think of that might have impacted the way humans use water – try and focus the ideas on technology, and why might we have to develop technology to cope with demand.	Revisit previous lesson, check prior knowledge of the technology influence on the use of water and development of water facilities.
	Activation: <i>Distribution of higher ability and lower ability worksheets.</i>		Students should use the worksheets whilst engaging in the tour around the museum. They need to identify four types of technology they think have helped the UK use water the way it does today. The expectations are that the student should identify the type, the advantages and	

			<p>disadvantages of each, and provide a field sketch of their choices.</p> <p>It is up to students what four pieces they want to identify; however, for LA there are hints and tips for types of technology they should look for.</p>	
	<p>Demonstration:</p>		<p>For higher ability, demonstration task on the sheet is to answer the question: <i>“Evaluate which technological development you think has had the biggest influence on helping Hereford meet demand for water.”</i> They need to use information gathered to create an extended answer weighing up, comparing and contrasting. Opportunity for extension: students to create their own technology to enhance water development.</p> <p>For lower ability, demonstration task on sheet is to answer the question: <i>“Describe which technological development you think has had the biggest influence on</i></p>	

			<p><i>helping Hereford meet demand for water.”</i> They need to use the information to describe the technique of technology they think had the biggest influence.</p>	
	Consolidation:		<p>Add to the list they created at the beginning of the lesson any different technologies they have learned about, but do it in a different colour to show progress through the lesson.</p>	

Teaching and Learning project PGCE

The Waterworks Museum in Hereford

How is water used by humans ?

Post visit Lesson



Recap: what is the importance of the Hereford Waterworks?

The chocolate bar

Fold the A4 paper into eight cubes. You need to go around the class and fill in each of the eight boxes with a fact about the fieldtrip to The Hereford Waterworks Museum

Extension: When you have filled out the eight boxes, you need to pick the one fact that you think is the most important.

Write three bullet points explaining why you think that this is the most important.





How is this water use different?



How does the water use in a small Bangladeshi village compare to how we use water in Hereford?

Use this information to **create** a poster to show why places in rural Bangladesh may not have the same access to clean water; answer these 3 points:

1. What will people in this village need to use water for?
2. What geographical reasons are there for Bangladesh not having clean water?
3. How would the technology in the UK benefit people in Bangladesh?

You need to show where Bangladesh is in the world and add a map.

What is the population?

Some hints to help you...

- GDP
 - What is the GDP of Bangladesh compared to the UK?
 - Why might this be important?
- How many people have access to clean water in Bangladesh?

