LESSON PLAN 2

Date		Time:	No. of pupils:
Subject		Group:	Usual teacher:
Lesson Focus: Lesson 2 – At The Waterworks Museum. Water – development and global issues			
Personal targets for this lesson (usually refer to standards) Explain how you intend to achieve the target.			
Teacher Standards Focus 1. Promote a love of learning and intellectual curiosity (TS 4b). 2. Establish a safe and stimulating environment, rooted in mutual respect (TS 1b). 3. Make a positive contribution to the wider life and ethos of the school (TS 8).			
Intended learning			
Planned Learning Objectives 1. **What methods have been used historically to clean water?** **2. Why do we need clean water?** **2. How does safe water arrive at our homes?**	**Intended learning outcomes** 1. State what methods have been used historically to clean water. 2. Explain why clean water is important. 3. Explain how clean water arrives at our homes.	**Assessment of learning objectives** 1. Scavenger hunt. 2. Word scramble. 3. Discussion.	

Literacy focus including key words Sanitation, infrastructure, physical water scarcity, economic water scarcity, development, sustainability.	**Numeracy focus** Worldometer displayed at regular stages throughout, to show how the number of people with access to clean water is decreasing. Measurements of volume and time, to calculate rate. Wealth of countries and/or families within a country.
ICT opportunities **None**	**SMSC Opportunities** • Working together in groups. • Thinking about people in other countries and how they live. • Inequality and development.
Homework	
Additional Planning	
Resources required: (resources, equipment, preparation) • Pens, pencils. • Worksheets. • Scavenger hunt cards. • Plenary questions from lesson one.	
Meeting Individuals' needs (issues of differentiation and diversity) • Variety of learning methods. • Working in groups of three for data collection, and also as a class for discussion.	
Planning for classroom support (technicians TAs etc.)	
Health and Safety / Risk assessment (key points) **PH Dairy Allergy**	

LESSON PLAN

Lesson Plan				
Time	**Teacher activity (20%** **Including key teaching points.** • Key Questions • Key words • Reminders	**LOs**	**Learner's activity (80%)** **Including key learning points**	**Purpose** **(refer to assessment and differentiation)**
5 mins	**Connection:** Assembly in the classroom study area.		In the classroom area, the students are put into groups of three. They are all given their questions **from the exit ticket from the last lesson**, and asked to put it onto their worksheet. All students given a worksheet.	
	Activation: Scavenger hunt		Students work through their scavenger hunt questions worksheet, gathering information from ten clues. They receive one clue at a time , then students explore the museum to find the answer to the question. They return to the teacher to collect each clue, so they only work on one at a time. All students check in with the teacher after each clue. They record the letter in bold at the bottom of the clue card on their worksheet, to collect the letters to complete the anagram at the end.	
	Demonstration If the weather is dry…		Students explore three different methods of water pumping to compare. 1. Hand pull well (outside). They need to work out how long it takes them to pump 10 litres out of the well outside. They have then got to work out how	

			many litres they could get out of the well in one hour. 2. Triple expansion steam engine (inside). 3. Well-spindle pumping set (inside). Using the data on the information boards, how many litres could both the machines pump in an hour? Compare. Calculate further how long it takes to pump your daily usage (150 litres). Students complete the worksheet How much water do we use in the UK every day?	
	Consolidation Word scramble. Discussion.		Having found the answer to their questions students complete the anagram (sanitation). Teacher and students discuss what this means as a group. How does sanitation affect quality of life?	

How much water do you use every day?

150 litres

How long does it take you to pump 10 litres?
(Fastest wins!!)

Look for the number of litres that get pumped over a certain time period and then calculate what the hourly rate would be.
N.B. WATCH THE UNITS

Calculate how long it takes to pump your daily usage.

Pump	Number of litres per hour	Power source	How long would it take to pump your daily usage?
Hand pump well	100 (Students calculate after physically trying themselves)	Manual	
Triple expansion steam engine	375,000 (Students calculate using data on info boards in museum)	Steam	
Well spindle pumping set	375,000 (Students calculate using data on info boards in museum)	Electricity	

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Scavenger hunt questions

1. Find Thomas Crapper's invention and answer this question. Why was this a helpful invention, and what positive effects did it provide? **O**	6. How might the "Water Softener" have helped households? **N**
2. What are the six stages of getting safe drinking water to our homes? **I**	7. How many rivers feed into the Lower Wye river? What are their names? **A**
3. In the Southall and much of the main museum, what do most of the machines run on? How might this be a problem for certain countries? **A**	8. Apart from steam and electricity, what is another fuel that can be used to power water pumps? **T**
4. Why was the Electric Revolution so important? Find three reasons. **T**	9. What function does the "Bell-jar Chlorinator" perform? Why might this have helped populations who had previously had dirty water? **I**
5. How did the "Candle Water Filter" help? **S**	10. What are three ways that water was pumped and transported to put out fires? Find them around the museum and write them down. **N**

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Scavenger Hunt Pupil Worksheet

Name …….

Scenario no	Scenario	Solution/answers	Letter/s