

## Secondary School Lesson Plan — Key Stage 3 — (11-14 Years)

### Lesson 4: Climate changes and water

#### Background:

WaterAid is an international not-for-profit organisation, determined to make clean water, decent toilets and good hygiene normal for everyone, everywhere within a generation. As our climate changes we feel the effects more and more through extreme weather, rising temperatures and ice melting leading to issues around too much or too little water. This makes the climate crisis a water crisis, as hundreds of millions of people across the world struggle to get clean water, pushing them further into disease and poverty.



#### Context:

This is the fourth lesson in a series of four that explain the causes, impacts and ways of managing climate change. This lesson introduces how to manage the impacts of climate change on water and offers a decision-making challenge to students on how they can manage the impacts of climate change to water.

#### Notes for teachers / educators

The activity timings should act as a guide only. Teachers should adjust timings and adapt activities according to the lesson time available and the ability of the learners.

#### Learning Question:

- What is the link between climate change and water?

#### Learning Objectives:

- I can investigate the best methods for solving water access issues.
- I can select and defend the best solution to solve a water access problem

#### Key words:

- Climate change
- Groundwater
- Boreholes
- Spring source
- Gravity-fed system

**Curriculum link:** The curriculum links are not exhaustive but offer a guide

- **Science:** Genetics and evolution; earth and the atmosphere
- **Citizenship:** the roles played by public institutions & voluntary groups in society, & the ways in which citizens work together to improve their communities, including opportunities to participate in school-based activities.
- **Geography:** human and physical geography

#### Resources:

- YouTube Video: Climate change and water: <https://youtu.be/rpqtEe8BGQg>
- Resource 1 – Lesson slides
- Resource 2 - Technologies information pack
- Resource 3 - Location cards
- Resource 4 - Solving the problem of clean water worksheet
- Resource 5 - Writing a proposal help sheet

Key Question	Activity	Resource	Timing
Recap	<ul style="list-style-type: none"> <li>● Display slide 1 and explain to students that you will be following on from the previous three lessons on climate change. This lesson is going to explain how we can manage the impact of climate change on water.</li> <li>● Ask students to recall ways that climate change can impact the world? What types of changes can they remember will help reduce or avoid these impacts? Can they name ways that climate change will impact on water?</li> <li>● Gather some responses to gauge prior understanding and to encourage a small discussion between yourself and the class. This should introduce any misconceptions that may need to be tackled throughout the lesson.</li> <li>● Display slide 2 - Ask the students to write down all of the ways that they have used water both directly and indirectly since waking up. If they are uncertain of the definitions of 'directly' and 'indirectly' refer them to the definitions displayed on the slide.</li> <li>● Emphasise to students that water is essential to our lives in ways we don't realise. Not just for drinking or washing but for growing food and making the products we use.</li> </ul>	Resource 1 - Lesson slides	5 mins
How does climate change affect our water supplies?	<ul style="list-style-type: none"> <li>● Display slide 3 - Introduce the film "Climate change and water" embedded on slide 3 (or follow the link in the notes section or button in the right-hand corner of the screen). This film outlines the ways in which water is impacted by climate change and provides a case study from Burkina Faso. Students should note the methods used to manage water stated in the film.</li> <li>● Before displaying slide 4 ask students to explain what impacts of climate change will affect water supplies and how these might affect our water? Ask students for some methods for managing climate changes impacts on water.</li> <li>● Display slide 4 — Following the discussion of the points read through the information on the slide to reiterate what impact climate change will have upon water. Read through slides 4 and 5 to explain to students why managing water is a good idea.</li> <li>● Display slide 5 - Explain to students that flooding and droughts due to climate change will lead to more people's water supplies being at risk and will reverse progress that has been made to provide everyone with clean water.</li> </ul>	Film - <a href="https://youtu.be/rpqtEe8BGQg">https://youtu.be/rpqtEe8BGQg</a>	10 mins

Key Question	Activity	Resource	Timing
How can we protect our water supplies?	<ul style="list-style-type: none"> <li>• Display slide 6 — This activity can be completed in groups of 2-4, or as individuals to stretch and challenge further.</li> <li>• Give each group one of the three location cards, a copy of the solving the problem worksheet and a copy of the technologies information pack. Explain that they will be doing a problem-solving activity to find the most suitable solution to a water problem.</li> <li>• Students should read their location cards. (Location cards can be seen in the lesson slides as slides 7-9). Once they understand the situation for their location, they should groups outline this and the problem by filling out the first side of their worksheet titled “assessing the situation”.</li> <li>• Next, they should examine the different types of water technologies in the information packs.</li> <li>• After they have read through the options, students select their top two solutions that they believe are most appropriate for their location. They should then complete the next section of the worksheet titled “finding a solution” on the second page of the worksheet.</li> <li>• To further challenge students provide them with more than one location, providing a new worksheet for each location.</li> </ul>	<p>Resource 2 - Technologies information pack</p> <p>Resource 3 - Location cards</p> <p>Resource 4 - Solving the problem worksheet</p>	20 mins
What are the problems with water?	<ul style="list-style-type: none"> <li>• Display slide 10 – Explain to the students that they will be using their research into technologies to write a proposal for WaterAid to give their recommendations and reasons for their chosen solution to the water problem in their location. Provide each student with a proposal writing help sheet.</li> <li>• Explain to students that they will be writing a proposal for WaterAid explaining why they have chosen their solution. Students should follow the help sheet to ensure that their proposal is well written. They will need to include a summary, recommendations and justifications for their chosen solutions.</li> <li>• To challenge students ask them if they can think of any other climate management techniques learnt last lesson that would be good in their location.</li> </ul>	Resource 5 - Writing a proposal help sheet	10 mins

Key Question	Activity	Resource	Timing
What did WaterAid do?	<ul style="list-style-type: none"> <li>• Display slide 11 – Explain that these are real case studies from WaterAid which show how they solved water issues in communities around the world.</li> <li>• Display slide 12 - Read through slides 12-14 to explain the real solutions used by WaterAid in the case studies. This will allow students to compare their answers with what WaterAid chose.</li> <li>• Ask the students to imagine that they live in a place that had problems with accessing clean water, but now this has been solved. How have their lives changed and how would they convince someone to support WaterAid’s work? They should share their answers and ideas with a partner.</li> </ul>		10 mins

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Inspire, engage and educate your learners about WaterAid’s work with a trained speaker. WaterAid Speakers visit schools and groups across the UK to deliver educational talks and workshops on topics such as climate change, the water cycle, periods and more. We also offer online talks and workshops, including for international audiences.