

Year 9, Geography – 60 minutes

Lesson plan

Curriculum Link: *Use fieldwork in contrasting locations to collect, analyse and draw conclusions from geographical data, using multiple sources of increasingly complex information.*

Learning Objective: To evaluate the threats to water quality and assess the role of ecologists and other professions in monitoring and protecting water quality.

Learning Outcomes:

- To understand sources of pollution for rivers and other water stores in the UK
- To evaluate the role of individuals and organisations in assessing and protecting water quality
- To justify the choice of field work techniques and make recommendations about future management

Success Criteria:

1. **Describe** – what does an ecologist do?
2. **Understand** – what are the threats to water quality – how can they be managed?
3. **Apply** – what does the data tell us about water quality?
4. **Analyse** – what are the main threats to water quality? What is the role of other key stakeholders in preserving water quality?
5. **Reflect** – what are the challenges for people working in the water quality industry?

Timings	Activity	Details	Resources
5 mins	Starter: Why water?	Think - Pair task – Students should think in pairs about how we use water and the threats to water quality. After 1-2 minutes bring ideas together in class discussion.	Slide 3
10 mins	Introduction: What is the problem? Success criteria: Analyse – what are the main threats to water quality? What is the role of other	Slide 4: students can discuss in pairs before opening into a class discussion. Slide 5 details some of the key players responsible for water quality therefore the answers to question 3 can tie in with moving onto slide 5 and noticing any additions to the list already created by the class discussion.	Slide 4, 5



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	key stakeholders in preserving water quality?		
5 mins	<p>Introduce & explore the role of a water quality inspector</p> <p><i>Success criteria:</i> <i>Describe – what does an ecologist do?</i></p>	<p>Show the video embedded in slide 6.</p> <p>Students come up with one sentence to describe the job.</p> <p>Explain that ecologists also assess water quality as well as investigating other aspects of the environment. Link back to the role of the Environment Agency on slide 5.</p> <p>Introduce the CHALLENGE on slide 7. Discuss what sort of thing Aaron would want to find out about the water in the River Ouse.</p>	Slide 6, 7
15 mins	<p>Challenge task 1: select appropriate field work techniques</p> <p><i>Success Criteria:</i> Apply – what does the data tell us about water quality?</p>	<p>There are 6 different water quality tests available. The task is to evaluate each one and select three that would be most useful for Aaron in preparing his report.</p> <p>There are no right and wrong answers here – the key skill is in justifying the decisions made.</p> <p>Metacognition: the worksheet helps to structure the thinking that is needed to make this evaluation.</p>	Slide 8 and Worksheet 1
15 mins	<p>Challenge task 2: suggest potential actions to help improve water quality</p> <p><i>Success Criteria:</i> Understand – what are the threats to water quality – how can they be managed?</p>	<p>Slide 9 is animated and reveals 5 different ideas to help protect water quality. Before these are revealed have a class discussion to collect ideas and then compare this list with the ones on the slide.</p> <p>Introduce slide 10 – students may be surprised that agricultural pollution is the most widespread, but most rivers spend much longer travelling through countryside than they do towns and cities.</p> <p>Slide 11 and worksheet 2 – students make suggestions of how to tackle the three major threats to water quality.</p> <p>To extend this activity small groups can agree on their best solution and share with the class. Then</p>	Slides 9-11 and Worksheet 2



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		either vote on the best overall solution for each problem or ask others to come up with challenges that that particular solution may face.	
10 minutes	<p>Analyse: Who would Aaron work with to produce his report?</p> <p><u>Success Criteria:</u> Reflect – what are the challenges for people working in the water quality industry?</p>	<p>Introduce the other roles that Aaron might work with to produce and publish his report. Students can read out the descriptions and key skills.</p> <p>Activities here could be either or both of these: a) for each role explain how they would work with Aaron to produce the environmental report b) if Aaron could pick just three additional people to help, which three should he pick</p> <p>Worksheet 3 will allow students to structure a response to both of these activities.</p>	Slides 12-17 Worksheet 3
	Optional Extension/ Independent work	These extension/homework tasks require students to (1) create their own field work technique for measuring water quality and (2) extend their knowledge and utilise their summarising skills by completing the comprehension questions in response to the article.	Slide 18

