

Plastic pollution in the oceans

Lesson Plan Lesson1: Mapping the plastic pollution problem (the human and physical processes)

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| Learning outcomes | <p>Students:</p> <ul style="list-style-type: none"> • learn that the plastic pollution problem is a function of human factors such as rising mass consumption, and physical factors including ocean currents and water temperatures alone • identify global-scale areas that have been badly affected by the plastic pollution problem • understand why remote and wilderness areas are affected by plastic pollution that originates in areas many 1000s of kilometres distant |
| <p>NB Guidance notes for each section of the lesson can be found in the fact sheet & teachers notes</p> | |
| Starter | <p>Sixty seconds opener</p> <p>If PCs are available for students to use (or overhead projector) they can explore the challenge for 60 seconds and gain an overview of the key issues they will be examining. Alternatively, project the photo-stream to show some startling images of plastic pollution. Either of these activities will help you set the scene.</p> |
| Main activity | <p><i>(1) Plastic consumption trends</i></p> <p>The main activity (with online support) focuses on the reasons why human societies are producing a growing output volume of non-recycled plastics that enter landfill or enter the oceans. This activity provides students with key facts about why there is a massive oceanic pollution problem.</p> <p><i>(2) Ocean circulation</i></p> <p>Attention now turns to the movement of plastic pollution in the world's oceans. The main drivers of water movement are planetary-scale warm and cold currents. This vital physical geography helps students understand why point-source emissions of plastic waste (such as bottle and bags) from major cities and hub regions turns into a fully global problem.</p> <p><i>(3) What is the global plastic pollution pattern?</i></p> <p>Diffuse pollution brings physical and chemical pollution derived from plastic waste to all of the world's water. However, physical factors have led to concentration in some areas including gyre patches and some remote islands in these pollution hotspots. This final activity involves taking a look at some of the worst-affected areas.</p> |
| Plenary | <p><i>Duck story</i></p> <p>The story of a flotilla of rubber ducks – released by a spilled cargo container into the Pacific Ocean in 1992 – provides a fascinating case study of plastic pollution to end the lesson with.</p> |
| Resources | <p><i>This lesson is fully supported with the following resources:</i></p> <ol style="list-style-type: none"> 1. Online: 21CC ‘What is the Great Pacific Garbage Patch?’ Activity 2. Thought-provoking starter photo-stream |

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| | <ol style="list-style-type: none">3. Short lecture by Dr Simon Boxall, Department of Oceanography at the University of Southampton4. Short film by Charles Moore (Algalita Marine Research Foundation)5. Simon Reeve encounters Hawaiian pollution (BBC)6. Plastic Pollution PowerPoint7. Word document: homework essay assignment with examiner tips (topic: the global threat to bio-diversity) |
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