

Approaches to reducing ocean plastic pollution



Age 11-14



60 minutes

Curriculum links

- Understand how human processes change landscapes and environments
- Debate solutions to human use of natural resources at a range of scales

Resources



Slideshow 6:

Approaches to reducing ocean plastic pollution



Student Sheet 6a:

How can we rethink plastic to solve the problem of ocean plastics?

Student Sheet 6b:

Plastic bag ban in Kenya

Student Sheet 6c:

The Ocean Cleanup

Student Sheet 6d:

Plastic straws

Student Sheet 6e:

Reusing packaging

Student Sheet 6f:

Beach clean-ups

Student Sheet 6g:

Recycling

Student Sheet 6h:

Reusable alternatives

Lesson overview

Experts agree on the need for urgent action to tackle the issue of marine plastic pollution but disagree on the what methods should be prioritised. Students will look at two main schools of thought: 'turn off the taps', stopping plastic from entering the ocean by reducing plastic pollution, limiting single-use plastic use, improving waste management, and introducing alternative products; and 'bail out the bath', removing plastic waste from the ocean and beaches. Students engage in a silent debate followed by a group discussion to focus on what they believe is the most effective solution.

Lesson steps

1. Rethinking the plastic pollution problem (15 mins)

Students learn how to categorise proposed solutions to the issue of marine plastics pollution using two frameworks: the 6Rs, and 'turn off the tap' vs 'bail out the bath'.

2. Plastic solutions silent debate (25 mins)

Using a silent debate format, students analyse different proposals to reduce marine plastic pollution, through analysing proposals in more depth and evaluating their strengths and weaknesses.

3. From silent to spoken debate (10 mins)

Students move from the silent debate format to a whole class discussion.

4. Plastic solution proposal (10 mins)

Students create a table of advantages and disadvantages for each proposed solution. They will need to research and write a short paragraph on their favoured solution. This can be completed for home learning.

Learning outcomes

- Understand the human use of natural resources has caused an environmental situation which needs a solution
- Evaluate different solutions to the problems, which work at different scales
- Apply skills of data gathering from a number of sources
- Debate the positive and negative features of each possible solution
- Communicate geographical information through extended writing

TEACHER GUIDANCE 6 (page 1 of 2)

APPROACHES TO REDUCING OCEAN PLASTIC POLLUTION

Step Guidance

Resources

1
15
mins



In this lesson students will evaluate different approaches to marine plastic pollution. This first lesson step introduces students to two frameworks to group solutions.

- Share the learning objectives and connect the learning to the previous lessons on recycling.
- Use slide 3 to share the 6Rs with students, ask them if they have heard of these, and whether they can think of any examples.
- Slide 4 emphasises the fact that the 6Rs are not in fact six equal options but are ranked in their effectiveness. By the time plastic is being recycled, it has already been created, and referring back to previous lessons, recycling may not be as effective as we might think.
- Go over the concepts of 'turn off the tap', 'bail out the bath' and 'mop up the mat' using slide 5.
- Hand out Student Sheet 6a and have students read through the information and answer the questions.

Slideshow 6:
Slides 1-6

Student Sheet 6a:
How can we rethink plastic to solve the problem of ocean plastics?

2
25
mins



Students engage in a silent debate to evaluate different proposed solutions to marine plastic pollution. Each of the Student Sheets 6b-6h has two sheets: the first with information about a proposed solution and the second with a statement. Place a copy of the info sheet (enlarged to A3 if possible) on separate desks. Stick a copy of the statement sheet in the centre of a large piece of sugar or craft paper.

- Students visit various stations in groups of four to five, reading the information, or studying the photos or other data. They do this in silence.
- At each station there is a statement with which they may agree or disagree.
- Provide students with pens (different colours will allow for tracking of contributions).
- Individually they must write a comment on that statement or respectfully add to a statement another student has made.
- They may agree or disagree with the main statement or another student's comment. Each statement or enlargement on a statement must be justified and move the discussion forward.
- They must not repeat a comment that has been made but they may extend it.
- Most stations contain quite a lot of information – teachers may wish to reduce this if younger students are involved or use the material to generate different questions according to ability.

Slideshow 6:
Slide 7

Student Sheets 6b-6h

TEACHER GUIDANCE 6 (page 2 of 2)

APPROACHES TO REDUCING OCEAN PLASTIC POLLUTION

Step	Guidance	Resources
3 10 mins	 <p>Develop the silent debate into a spoken debate.</p> <ul style="list-style-type: none">· Once students have completed the silent debate and returned to their seats, show slide 8.· Using the students' answer sheets as stimulus or a selected response from any of the students' thoughts.· A short debate could take place.· Intervene with comments noticed on the papers from usually quiet students. <div><p>Silent debates often give quieter/ less confident students a chance to express their own ideas on paper which can be relayed verbally later.</p></div>	Slideshow 6: Slide 8
4 10 mins	 <p>Step 4 asks students to consolidate the silent and spoken debate through extended writing and note-taking. This will also assist with the assessment in the next lesson. Students should complete this activity as part of home learning.</p> <ul style="list-style-type: none">· Students create a table of advantages and disadvantages for each of the different approaches. They will be allowed to bring this to the assessment during the next lesson.· They are asked to research and write a short paragraph (not an essay) on the approach they favour ready for an assessment exercise the next lesson.· They must be prepared to justify their answer and say why they have rejected the other options.· Students should have access via the school intranet to the material from the silent debate and hopefully the scanned thoughts from the silent debate.	Slideshow 6: Slide 9