

Design task



Age 11-14



60 minutes

Curriculum links

- Formulate solutions to design problems
- Create an ocean friendly product design and justify with the 6 Rs

Resources



Slideshow 6:
Design task



Student Sheet 6a:
Design template

Student Sheet 6b:
Product pitch

Lesson overview

In this the final design and technology Key Stage 3 (KS3) lesson, students will apply their understanding of the 6 Rs. The focus of this lesson is to design an ocean friendly product. Students will work in groups to research, design, and pitch. Included are teacher resources which structure students independent and group activities.

Lesson steps

Learning outcomes

1. Introduction (5 mins)

Students define what they consider to be sustainable design.

- Define sustainable design

2. Sustainable design (30 mins)

Students choose a product which they will design to make ocean friendly. They research the current product, identify why it is not ocean friendly, design their product, then explain how it solves the problem.

- Design an ocean friendly product

3. Pitch carousel (20 mins)

Student move around the room and listen to other groups pitch their new product.

- Draw your product design

4. Reflection (5 mins)

Students must practise metacognition by imagining the feedback they would receive from a seahorse, a retailer, and their competitor.

- Reflect and evaluate your product design

TEACHER GUIDANCE 6 (page 1 of 2)

DESIGN TASK

Step Guidance

Resources

1
5
mins



For the final lesson in this unit students will begin to consider what sustainable design means.

- Using slide 1, direct students to an image of a banana wrapped in packaging. Ask students, “Is this sustainable product design?” Through further questioning, encourage students to define what sustainable design is.
- Using slides 2-4, introduce the lesson and learning outcomes.

Slideshow 6:
Slides 1-4

2
30
mins



In step 2, students choose a product to redesign to be ocean friendly.

- Direct students to slide 5, pose the question, “What products can we redesign to be more sustainable?” If students find this question challenging, first encourage them to consider what products are damaging the oceans. From there ask how they can be redesigned to be more ocean friendly.
- Using slide 6, inform student that they will be designing an ocean friendly product. They can design either ocean friendly sportswear, an ocean friendly drinks bottle, ocean friendly take away packaging, or an ocean friendly product of their choice.
- Hand out Student Sheet 6a and put students into groups (groups of three is preferable).

Slideshow 6:
Slides 5-6

Student Sheet 6a:
Design template



Students will have acquired enough knowledge from lessons earlier in the topic, to complete this task independently. For students who require extra support below are a few examples of how these products have been made ocean friendly.

Sportswear:

Adidas has teamed up with Parley to create a range called Adidas x Parley. These trainers are from plastic that has been collected from beaches in remote locations.

Packaging:

Lolliware has created a range of edible cups and straws. EcoSoulife is another company which specialises in sustainable containers. Their single use products are made of biodegradable materials.

Drinks bottle:

Reusable bottles can be made from plastic, metal or wood. Students may choose to make their product from recycled materials but there may be issues with contamination that they should research further. Ask students to research how many times their bottle must be used to be more sustainable than a single-use plastic bottle.



For the first part of Student Sheet 6a, students will be asked to research their product. To facilitate this, you will need to either book a computer room or order laptops to the classroom.

TEACHER GUIDANCE 6 (page 2 of 2)

DESIGN TASK

Step Guidance

Resources

3
20
mins



Students have applied prior learning to create an ocean friendly product. Now students justify their designs in a pitch carousel.

- Get the class to put chairs in a circle. Initially students sit in their groups.
- Hand out student sheet 6b.
- Using slide 7, inform students that they will be doing a 'pitch carousel'.
- One of their team members will stay in a fixed position and explain their product to other groups. They must keep the group's completed Student Sheet 6a.
- The others will move clockwise to the other group's representative. While they are with the other group's representative, they must complete Student Sheet 6b.
- After a fixed time, the teacher will tell students to move to the next group, continuing to move in a clockwise direction.



The pitch carousel can be very fun. However, moving tables and chairs can be challenging. On the class board draw a box and a circle, respectively representing the classroom and where you would like the circle of chairs. Then, ask for a volunteer to be project manager in reorganising the room. They will be responsible for giving others instructions. You can turn the lesson transition into a game further by putting a timer on the board and setting a time limit.

Slideshow 6:
Slide 7

Student Sheet 6b:
Product pitch

4
5
mins



Students have designed an ocean friendly product and shared their ideas with their peers. Now they must consider how other people may perceive their design ideas.

- Using slide 8, ask students "What would you think of your new product if you were: seahorse, a retailer / store owner, a competitor?"
- Students formulate a response in silence.
- After students have had at least 30 seconds to think of a response, the teacher encourages students to share their ideas.

Slideshow 6:
Slides 8-9

+
20
mins



To extend students interest, ask them to find a news article on ocean plastics. Tell them they must evaluate how good it is as a source.



The subject update is available online at the following link.

How to: Improve students' online research skills

<https://encounteredu.com/cpd/subject-updates/how-to-improve-students-online-research-skills>

Subject Update:
How to: Improve students' online research skills