

# What are the factors of the coral reef ecosystem?



Age 14-16



60 minutes

## Curriculum links

- Ecosystems consist of interdependent components.
- Bio-diverse ecosystems are under threat from human activity.

## Resources



**Slideshow 3:**  
What are the factors of the coral reef ecosystem?



**Student Sheet 3a:**  
Abiotic and biotic factors

**Student Sheet 3b:**  
Abiotic and biotic table

**Student Sheet 3c:**  
Food chains



**Gallery:**  
Coral life (advanced)



**Activity:**  
Coral food chain mobile

## Home learning

GCSE style exam questions. Students to complete questions in their books and peer assess when finished.

## Lesson overview

This lesson will introduce students to abiotic and biotic factors of the coral reef ecosystem. In this lesson students will gain a detailed understanding of a variety of abiotic and biotic factors. By the end of the lesson students will be able to describe those factors and begin to identify ways actions of humans will affect the ecosystem.

## Lesson steps





- 1. Introduction (5 mins)**  
Students to review the learning objectives.
- 2. Key words (5 mins)**  
Students to match up the key words with the definitions.
- 3. Abiotic components (15 mins)**  
Students to read the information sheet about abiotic factors and complete the table.
- 4. Biotic Components (25mins)**  
Students to use the information in the Gallery – Coral Life (advanced) to complete the table.
- 5. Consolidating (10 mins)**  
The students to use the diagram on the slideshow and explain interrelationship between the different factors on the coral reef.

## Learning outcomes



- Understand the wider context and learning outcomes
- Define the key terms – abiotic and biotic
- Describe how the abiotic components, work within the ecosystem. E.g. nutrient cycle
- Describe how the biotic components, work within the ecosystems. E.g. Food web
- Explain the interrelationships of different factors within the ecosystem

### Step Guidance

### Resources

<b>1</b> 5 mins		<p>Step 1 introduces the students to the lesson.</p> <ul style="list-style-type: none"><li>· Select students to read out the lesson objectives.</li><li>· Ask students questions related to the lesson and learning in the previous lesson such as: What is a coral reef? Why are coral reefs important?</li></ul>	<p><b>Slideshow 3:</b> Slides 1-2</p>
<b>2</b> 5 mins		<p>Step 2 the class learns the key words for the lesson.</p> <ul style="list-style-type: none"><li>· Students to match the key words with the definitions and write them in their books.</li><li>· Go through the answers with the class.</li></ul>	<p><b>Slideshow 3:</b> Slides 3-4</p>
<b>3</b> 15 mins		<p>Step 3 focusses on the abiotic components of the coral reef.</p> <ul style="list-style-type: none"><li>· In pairs students are to discuss what abiotic and biotic factors they can see in the picture.</li><li>· Students to read the information sheet and complete the table.</li></ul>	<p><b>Slideshow 3:</b> Slides 5-6</p> <p><b>Student sheet 3a:</b> Abiotic and biotic factors</p> <p><b>Student sheet 3b:</b> Abiotic and biotic factors table</p>
<b>4</b> 25 mins		<p>Step 4 looks at the biotic components of coral reefs.</p> <ul style="list-style-type: none"><li>· Make it clear to students that they will be learning about the biotic factors of coral reefs, focusing on the food chains and food webs on coral reefs.</li><li>· Students to match up the key words and definitions.</li><li>· Go through the answers with the class.</li><li>· Play the Coral food chain mobile video. Students are to answer the questions shown on the slideshow as they watch the video.</li><li>· Ask random students to share their answers with the class.</li><li>· Using laptops, ipads or their mobile phones students to complete a scavenger hunt by looking at the images and information in the Coral ID (advanced) gallery to answer the questions on the slideshow.</li><li>· Hand out the Student Sheet 3c. Students to work through the tasks on the sheet.</li><li>· Students to complete the rest of the abiotic and biotic factors table.</li></ul>	<p><b>Slideshow 3:</b> Slide 7-15</p> <p><b>Student sheet 3b:</b> Abiotic and biotic factors table</p> <p><b>Student Sheet 3c:</b> Food chains</p> <p><b>Gallery:</b> Coral ID (Advanced)</p> <p><b>Activity:</b> Coral food chain mobile</p>

## TEACHER GUIDANCE 3 (page 2 of 2)

Step	Guidance	Resources
<b>5</b> 10 mins	 <p>Step 5 consolidate their learning.</p> <ul style="list-style-type: none"><li>· Students to identify and explain the interrelationships between different factors within the coral reef ecosystem.</li></ul>	<b>Slideshow 3:</b> Slide 16
<b>H/L</b> 10 mins	 <p>Step 6 students to revise by answering a few GCSE Style exam questions.</p>	<b>Slideshow 3:</b> Slide 17-18