

# Applicable standards

## GCSE Geography exam specification

KS4 Geography		Lessons							
Elements of the specification		1	2	3	4	5	6	7	8
<b>Locational knowledge</b>									
<b>OCR GCSE Geography A – 2.1.4.</b>									
The location of warm water coral reefs including the Great Barrier Reef, Red Sea Coral Reef, New Caledonia Barrier Reef, the Mesoamerican Barrier Reef, Florida Reef and Andros Coral Reef.		✓							
<b>Eduqas GCSE Geography A – 5.3.1.</b>									
An overview of the location and global distribution of large-scale ecosystems (biomes). The characteristics of large-scale ecosystems to include the relationship between global climate patterns and their distribution.		✓							
<b>Eduqas GCSE Geography B – 3.1.1.</b>									
An overview of the characteristics and interdependence of climate, soils, vegetation, animals and humans in two contrasting biomes.		✓							
<b>Place: processes and relationships</b>									
<b>OCR GCSE Geography A – 2.1.2.</b>									
Overview of the global distribution of polar regions, coral reefs, grasslands, temperate forests, tropical rainforests, and hot deserts. Overview of the climate, plants and animals within these ecosystems.		✓							
<b>Eduqas GCSE Geography A – 5.3.2.</b>									
The location and distinctive features of the coral reef ecosystem and its climate. The processes and relationships that link living parts and non-living parts in these two ecosystems at different scales: Local scale processes to include nutrient cycles and food webs. Regional/global scales to include water cycles and carbon cycles.		✓	✓						
<b>OCR GCSE Geography A – 2.1.1.</b>									
Ecosystems include abiotic and biotic components which are interdependent.				✓					
<b>AQA GCSE Geography – 3.1.2.1.</b>									
An overview of the distribution and characteristics of large scale natural global ecosystems.				✓					
<b>Eduqas GCSE Geography B – 3.1.2.</b>									
The physical processes that link living/biotic components (plants, animals, decomposers) and non-living/abiotic components (temperature, light, moisture) in hot semi-arid grasslands and one other biome.				✓					

# Applicable standards

## GCSE Geography exam specification

KS4 Geography (continued)		Lessons							
Elements of the specification		1	2	3	4	5	6	7	8
<b>People and environment: processes and interactions</b>									
<b>OCR GCSE Geography A – 2.1.5.</b>									
A case study which covers: the process of nutrient cycling that operates within coral reefs, the interdependence of climate, soil, water, plants, animals and humans their value to humans and to the planet and threats to biodiversity and attempts to mitigate these through sustainable use and management.									
				✓	✓	✓	✓	✓	
<b>OCR GCSE Geography B – 8.1.</b>									
Outline the factors leading to demand outstripping supply of food, energy and water.									
					✓	✓	✓		
<b>Eduqas GCSE Geography B – 3.2.1.</b>									
An overview of how humans use, modify and change ecosystems and environments in order to obtain food, energy and water resources.									
				✓	✓				
<b>Eduqas GCSE Geography B – 3.2.2.</b>									
How hot semi-arid grasslands and one other ecosystem have been damaged by human activity. The effects of the damage at the local scale, to include the effect on biodiversity, and at the global scale.									
						✓	✓		
<b>Eduqas GCSE Geography A – 5.4.3.</b>									
Sustainable environmental strategies to manage habitat and biodiversity in tropical rainforests and one contrasting ecosystem.									
							✓		
<b>Eduqas GCSE Geography B – 3.2.3.</b>									
The reasons for conservation and management. The ways in which hot semi-arid grasslands and one other ecosystem have been managed. Strategies for sustainable management.									
							✓		

## Lesson 1: Where is Timor-Leste and why does it have coral reefs?

### Overview

This lesson introduces Timor-Leste, the case study for this scheme of work and coral reefs. Students will locate Timor-Leste alongside other important coral reefs on a map. They will also learn what conditions are needed for a coral reef to grow and the global distribution of coral reefs.

### Learning outcomes

- Locate Timor-Leste on a map
- Give reasons why coral reefs are important
- Describe the global location and distribution of coral reefs
- Describe and explain the global distribution of coral reefs
- Identify different warm coral reefs

### Resources



#### Slideshow 1:

Where is Timor-Leste and why does it have coral reefs?



#### Student Sheet 1a:

Timor-Leste and the Coral Triangle info sheet

#### Student Sheet 1b:

Where is Timor-Leste and the Coral Triangle?

#### Student Sheet 1c:

Where are coral reefs located?

#### Student Sheet 1d:

Blank world map



#### Video:

Coral expedition: Wonders of coral

#### Video:

Seaview science: Biodiversity

#### Video:

Welcome to Timor-Leste

## Lesson 2: What is the structure of a coral reef?

### Overview

In this lesson, students will begin to develop further understanding of the coral polyp and how they grow from a single coral polyp to a huge coral reef. Student will then look at the coral reef zones and develop understanding of those different zones and their characteristics.

### Learning outcomes

- Understand the wider context and learning outcomes
- List the different scales of a coral reef
- Describe what a coral polyp is and why it is important
- Describe and explain the formation of different coral reefs
- Describe the different habitat zones within a coral reef

### Resources



#### Slideshow 2:

What is the structure of a coral reef?



#### Student Sheet 2a:

The formation of coral reefs

#### Student Sheet 2b:

Reef habitat zones



#### Activity:

Incredible edible polyp

#### Activity:

Coral reef zones



#### Gallery:

Reef scales

#### Gallery:

Zones on the reef



#### Video:

Seaview Survey: Coral reefs



#### Subject Update:

The formation of coral reefs

## SCHEME OF WORK

### Lesson 3: What are the factors of the coral reef ecosystem?

#### 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.

#### Learning outcomes

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

#### 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

### Lesson 4: How do humans use coral reefs?

#### Overview

This lesson will look at how the goods and services of a coral reef are used globally and within Timor-Leste. With a study of the economic value of the coral reef and developing an understanding of that economic value is calculated. This lesson will also develop an understanding of what is meant by different services provided by the coral reef.

#### Learning outcomes

- Understand the wider context and learning outcomes
- Describe the economic value of the coral reefs
- Draw a graph that compares the economic value of coral reefs to other ecosystems
- Explain the economic value of the coral reefs
- List the ways humans use the coral reefs globally and in Timor-Leste

#### Resources

**Slideshow 4:**

How do humans use coral reefs?

**Student Sheet 4a:**

Coral reefs goods and services information

**Student Sheet 4b:**

Goods and services table

**Video:**

Welcome to Timor-Leste

**Subject Update:**

Learn more: Human activity on the reef?

**Subject Update:**

Learn more: How ecosystems (E7) and G7 economies compare

## Lesson 5: What are the threats to coral reefs?

### Overview

This lesson will look at the threats to the coral reefs, using a variety of resources including videos, a gallery and information sheets. This lesson will get students to start thinking about the scale of the threats to coral reefs and how we can all play a part regardless of how far we live from the coral reef.

### Learning outcomes

- Understand the wider context and learning outcomes
- List the threats both natural and human to the coral reef
- Describe the different threats to coral reefs. Look at different scales; local in Timor-Leste (dangerous fishing) and systemic (climate change)
- Evaluate the threats to the coral reefs

### Resources



**Slideshow 5:**  
What are the threats to coral reefs?



**Student Sheet 5a:**  
Threats information sheet

**Student Sheet 5b:**  
Coral reef threats table



**Video:**  
Seaview science:  
Changing reefs

**Video:**  
Pigs on the beach



**Gallery:**  
Coral threats



**Activity:**  
Dissolving 'coral' and 'shells'  
in vinegar



**Subject Update:**  
Learn more: Corals in a high  
CO<sub>2</sub> world

## Lesson 6: What are the impacts of coral reef destruction?

### Overview

This lesson will look at the impacts of coral reef destruction, categorising those impacts. We discover the impacts to different stake holders in Timor-Leste through watching videos. Students will then write a letter to their local MP informing them of the threats the coral reefs are facing and why they need protection.

### Learning outcomes

- Understand the wider context and learning outcomes
- Remember some of the threats to coral reefs
- Describe the impacts of coral reef destruction
- Explain the short term and long-term consequences of the loss of the coral reef
- Predict a strategy to mitigate the threats to coral reefs
- Reflect on learning

### Resources



**Slideshow 6:**  
What are the impacts of coral reef destruction?



**Student Sheet 6a:**  
Facts and consequences



**Video:**  
Stakeholders on the reef -  
Community

**Video:**  
Stakeholder on the reef -  
Fisherman

**Video:**  
Stakeholder on the reef -  
Government

**Video:**  
Stakeholder on the reef -  
Local tourism

**Video:**  
Stakeholder on the reef -  
Tourism operator

## SCHEME OF WORK

### Lesson 7: How do we mitigate coral reef destruction?

#### Overview

In this lesson you will look at the different strategies implemented in places across the globe and the main strategy used in Timor-Leste. Students will be assessing the need for the mitigating strategies such as the MPA in Timor-Leste but also evaluating the strategies.

#### Learning outcomes

- Understand the wider context and learning outcomes
- Identify the links between the threats and the need for the mitigating strategies
- Map and describe different strategies to mitigate the threats to coral reefs
- Evaluate the effectiveness of the MPA strategy used in Timor-Leste, including the positives and negatives of the strategy
- Reflect on learning

#### Resources

**Slideshow 7:**

How do we mitigate coral reef destruction?

**Student Sheet 7a:**

Blank world map

**Student Sheet 7b:**

Mitigation strategies information sheet

**Student Sheet 7c:**

MPA knowledge organiser

**Student Sheet 7d:**

MPA information organiser

**Video:**

Stakeholder on the reef - Community

**Video:**

Stakeholder on the reef - Government

**Video:**

Stakeholder on the reef - Local tourism

### Lesson 8: Assessment

#### Overview

This lesson will be spent with the students completing the assessment, which will include a variety of tasks such as exam questions and some skills-based questions such as finishing graphs.

#### Learning outcomes

- Apply knowledge and understanding to answer GCSE style exam questions

#### Resources

**Student Sheet 8a:**

Assessment paper

**Answer Sheet 8a:**

Mark scheme