

Subject links:

Geography, Science, IT, English

Ages 7-11

Curriculum links:

Oceans, Map skills, Climate, UK wildlife, Biodiversity, Habitats, Group work, Digital skills, Presentation

Ocean Literacy Principles:

3. The ocean is a major influence on weather and climate.
4. The ocean made the Earth habitable.
5. The ocean supports a great diversity of life and ecosystems.
6. The ocean and humans are inextricably interconnected.

Learning Objectives:

- To understand how we are all connected to the ocean
- To be able to define the word habitat
- To learn a variety of animals that live in the sea around the UK

Resources provided:

- [Amazing Ocean Fact File](#)
- [What did the ocean ever do for us? \(video\)](#)
- [Habitat images](#)
- [Species illustrations](#)

Extra resources required:

- Scissors and glue
- Books, computers

Ocean Overview

Sustainability Goals:



Step 1

Background

The ocean covers over 70% of the Earth's surface. It is a vital support system for our planet, as it plays a major role in the water cycle, provides oxygen, stores carbon, regulates the climate, reduces storm damage to coastal areas, provides food, and is important for our health and wellbeing. On top of all these services, the ocean is also home to 50-80% of all life on Earth.

More information on why the ocean is important can be found in the [Amazing Ocean Fact File](#).

Step 2

Set the Scene

15 minutes – What does the ocean mean to you?

Explain that today's topic is all about the ocean. To introduce the topic, write the following questions on the board and ask students to discuss them in pairs before having a group discussion:

What do you like about the ocean?
What don't you like about the ocean?
Have you ever been to the seaside?
What do you already know about the ocean?

To keep the conversation focused, give pairs three minutes for each question.

Step 3

Activities

Activity 1: 15 minutes – What did the ocean ever do for us?

Watch the video, [What did the ocean ever do for us?](#), as an introduction to why the ocean is so important. Discuss the video as a class, adding ideas on the board of all the ways the ocean connects to us and helps in our daily lives.

Activity 2: 5 minutes – Your school and the sea

To help increase the connection between your school and the ocean, locate your nearest stretch of coastline on Google Earth on your whiteboard. Start by finding your school, then locate your nearest river and follow it on its journey to the sea. *Top tip* – it might help to practise first! Once you've located your nearest river, click on 'more information' to find the river's mouth. This will more than likely lead to another river. Repeat this step until you find the estuary.

Activity 3: 20-30 minutes – Habitat Matching game

As a class, discuss what a habitat is and define the term 'adaptation.' Split the class into small groups and hand each group the [habitat images](#) and [species cards](#). Students should cut out each animal and try to match it to one of the habitat cards. When all species are matched correctly, students can stick the animals on. When working together, students should discuss their ideas about why a species might live in a certain habitat. Encourage them to think about adaptation features, like colour, size, feeding, shape, and structure.

Step 4

Extend

30 minutes-1 hour – Researching habitats

Allocate a habitat for each group to study further. Students should read through the information provided on the back of the [habitat images](#), then choose one of the species in their habitat to research using books and computers. Groups should work towards presenting their study to the rest of the class. They could perform a piece of theatre about life in their habitat, use technology, or design a poster.

Step 5

Reflect

5 minutes

Why is the ocean so important? How is your school connected to the ocean? What is a habitat? Why do animals need to be adapted to their habitat? Can you think of an example of how an animal has adapted to its habitat?

Step 6

Follow up

To learn how human activity threatens the ocean, complete the lesson, [How do we use the sea?](#) To learn about ocean conservation, look at [What's an MPA?](#) and to learn what students and your school can do to help our ocean, complete [How can you protect the ocean?](#)

Amazing Ocean Fact File

The ocean is a vital support system for our planet

- It plays a major role in the water cycle
- Marine plants and algae produce over 50% of the oxygen we breathe
- Marine habitats help to store carbon, which is incredibly important in the fight against climate change
- The ocean regulates our climate and weather systems
- Coastal habitats help to protect coastal communities and towns from storms and flooding by reducing wave energy
- Seafood provides a source of food and protein for millions of people
- Millions of people have jobs in marine industries
- The ocean is important for our health and wellbeing, with millions of people using the ocean and coastline recreationally and creatively



Coastal seagrass habitat
© Benjamin L. Jones via
Unsplash



Surfer © Sebastian Staines
via Unsplash

Helpful terms

Ecosystem services – the benefits people derive from ecosystems

Habitat – a habitat is the natural home or environment in which an animal, plant or organism lives. A habitat contains all an organism needs to survive such as food and shelter. A microhabitat is a small area within a larger habitat which is home to a species

Amazing Ocean Fact File

Ocean diversity



70% of the Earth's surface is covered by the ocean

The ocean is incredibly diverse and is home to 50-80% of all life on Earth. The majority of this diversity is found in productive shallow seas



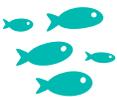
In the UK we have around 7,723 miles of coastline, with sandy bays, rugged shores, caves and cliffs. Beneath the waves are varied landscapes too, with undersea cliffs, caves, plains and dunes



Our coastal seas host a range of habitats like colourful reefs, kelp beds, rockpools and seagrass meadows, which provide sanctuary to thousands of plants and animals



The biodiversity of species in our ocean is extraordinary, from microscopic bacteria and algae to enormous whales



Biodiversity is important for ecosystem health. An ecosystem with greater diversity is much more likely to recover from damage from external factors compared to an ecosystem with little diversity

Helpful terms

Species - a group of living organisms consisting of similar individuals that share common characteristics and are capable of interbreeding

Adaptation - the process of evolutionary change in which an organism becomes suited to its environment

Biodiversity - a broad term meaning the variety of plant and animal life. Biodiversity refers to diversity within species, between species and within an ecosystem

Habitat Cards

Print the following 10 pages double sided to form habitat cards with an image on one side and information on the back. These will be used in Activities 3 and 4.

- You can find saltmarsh habitats across the UK coastline in sheltered areas protected from strong waves.
- Saltmarshes can be divided into zones;
 - ◇ The zone at the bottom of the shore is always covered by the sea
 - ◇ The middle zone is flooded by the sea on high tide, but has no water on low tide
 - ◇ The zone at the top of the shore only gets flooded by the sea when its stormy
- Many plants live in saltmarshes;
 - ◇ Grass like plants live in the areas covered by the tide
 - ◇ In the middle zone there are larger flowering plants
 - ◇ In the top zone there are shrubs
- Saltmarshes are very muddy, making them a great home for worms, and a great place for birds to feed on worms.

Salt marsh



- Rockpools are found all over the UK on rocky shores.
- The whole habitat is covered with water during high tide. But during low tide only the pools store water, like puddles.
- Animals that live in rockpools have to be well adapted to this environment, as it's a hard place to live for many reasons;
 - ◇ Changing tides (sometimes there's lots of water, sometimes there's no water)
 - ◇ Waves crashing on the shore
 - ◇ Sunlight can heat the water in the pools and lead to evaporation, which can make the water more salty
 - ◇ Rain water can make the water in the pools less salty
 - ◇ People walk along the coast possibly standing on creatures
 - ◇ Competition for space in small rockpools

Rockpool



- Underwater sandy habitats are the most common marine habitat.
- They might look boring but many animals live there.
- There aren't many plants or boulders to hide from predators. So animals living in the sand have to adapt. Some animals are camouflaged and some animals burrow in the sand to hide.
- Many fish use sandy habitats to hide their eggs in burrows in the seafloor.

Sandy seafloor



- Our part of the ocean is called the North East Atlantic ocean. This can be split into smaller coastal seas;
 - ◇ To the south of the UK is the English Channel. It separates the UK from the rest of Europe
 - ◇ On the east side of the UK is the North Sea
 - ◇ In between Great Britain and Ireland is the Irish Sea
- There's a huge variety of animals that live in the ocean from tiny microscopic plankton to huge whales.
- Some animals spend their whole life in the open ocean waters like mackerel. Whereas seals, live on beaches and use the open ocean to feed on fish.

Open ocean



- Seagrass is the only flowering plant in the ocean.
- It is found in calm, shallow, sunlit, coastal waters around the world.
- When seagrass grows in large areas, the habitat it creates is called a 'seagrass meadow' or 'seagrass bed'.
- Across the world seagrass beds are important as fish nurseries, as young fish can hide between the plants.

Seagrass beds



