

RSNO

SCOTLAND'S NATIONAL
ORCHESTRA

*S*ounds
of the
Deep

Learning Resource:

Introducing the Ocean

MARINE
CONSERVATION
SOCIETY



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CONSERVATION
SOCIETY

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Subject links:
Geography

Ages 7-11

Curriculum links:
Oceans, Map skills, Water cycle, Environment

Ocean Literacy Principles:

1. The Earth has one big ocean with many features
2. The ocean is a major influence on weather and climate
3. The ocean made the Earth habitable

Learning Objectives:

- To discover how we are all connected to the ocean
- To use map work to name the different areas of the ocean
- To understand what causes tides and how tides affect the ocean

Resources provided:

[Amazing Ocean Fact File](#)
[What did the ocean ever do for us? \(video\)](#)
[Ocean Map](#)
[Water Cycle Illustration](#)

Extra Resources Required

Maps, rope

Introducing the Ocean

Sustainability Goals:



Step 1

Background

The ocean covers 70% of the Earth's surface, and is a vital support system for our planet. 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 health and wellbeing. The ocean is also home to 50-80% of all life on Earth.

More information on why the ocean is important can be found on the [Amazing Ocean fact file](#).

Step 2

Set the Scene

20 minutes – What does the ocean mean to me?

Explain that today's topic is all about the ocean. Write the following questions on the board:

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?

Ask students to discuss the questions in pairs before having a group discussion. To keep the conversation focused, give pairs 3 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: 10 minutes – Your school and the ocean

Find out how your local area is connected to the ocean. As a class, use Google Earth to find your school. From there, locate the 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, which will more than likely lead to another river. You will need to repeat this step for the second or even third river until you find the mouth of the estuary.

Activity 3: 10 minutes – Naming ocean areas

To understand how the ocean closest to you is connected to the rest of the world, hand out world maps to pairs. If you don't have appropriate maps, print out our [ocean map](#). Explain that we only have one ocean (one planet, one ocean), but we name different sections of it depending on factors like temperature and location. Ask students to study their maps in pairs and find out how many areas of the ocean there are and what they're called. Think about the conditions of each ocean area (e.g. temperature, depth, marine life).

Locate the UK and the name of the ocean in this area. After a few minutes, discuss the map as a class. Explain that the sea is the term for the ocean closest to and surrounding land. What is the nearest sea to you?

Activity 4: Why is the ocean salty?

Pose the question, what's the difference between river water and water in the ocean? Students should discuss in pairs before having a group discussion. Show the [water cycle](#) image. Explain that rainwater and river water help to wash minerals off rocks and these are carried to the ocean. There are also hydrothermal vents and volcanoes on the seafloor that release minerals into the ocean. When these minerals are released into the water, a chemical reaction turns the water salty.

Activity 5 – 20 minutes – How do tides work?

Ask students if they know what the tide is and how it is caused. Head to an open space, like an assembly hall or outside. Children should stand in a circle holding hands or holding a long rope. Explain that the circle represents the water surrounding the Earth. Decide which part of the circle is North, South, East and West. Explain how the Earth spins around on an axis. Children should slowly walk around in circle to represent this. Pause the circle to explain that you represent the moon. The student closest to the moon should take a step backwards, and the student opposite should copy. Explain how the moon's

gravity is pulling the water towards it, which causes the water to bulge at either side of the Earth. This represents high tide. There is now less water in the middle, which represents low tide. Now continue to move around slowly in a circle, with students stepping backwards when in line with the moon, and forward once they have passed. Pause several times to show high and low tides in different places around the world by referring back to which part of the circles represent North, South, East and West. Explain that we have two high tides and two low tides a day, and ask children to describe why.

Step 5

Reflect

5 minutes

Why is the ocean so important? How is your school connected to the ocean? What are the 5 areas of the ocean called? Why is the ocean salty? What affects the tide? How many high tides are there a day? What causes high tide?

Step 6

Follow up

To begin to study animals in the ocean and how they are connected to each other, complete the lesson, [Create a food web](#). To learn about how creatures are adapted to their habitat, complete the lesson, [How do creatures adapt?](#)

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



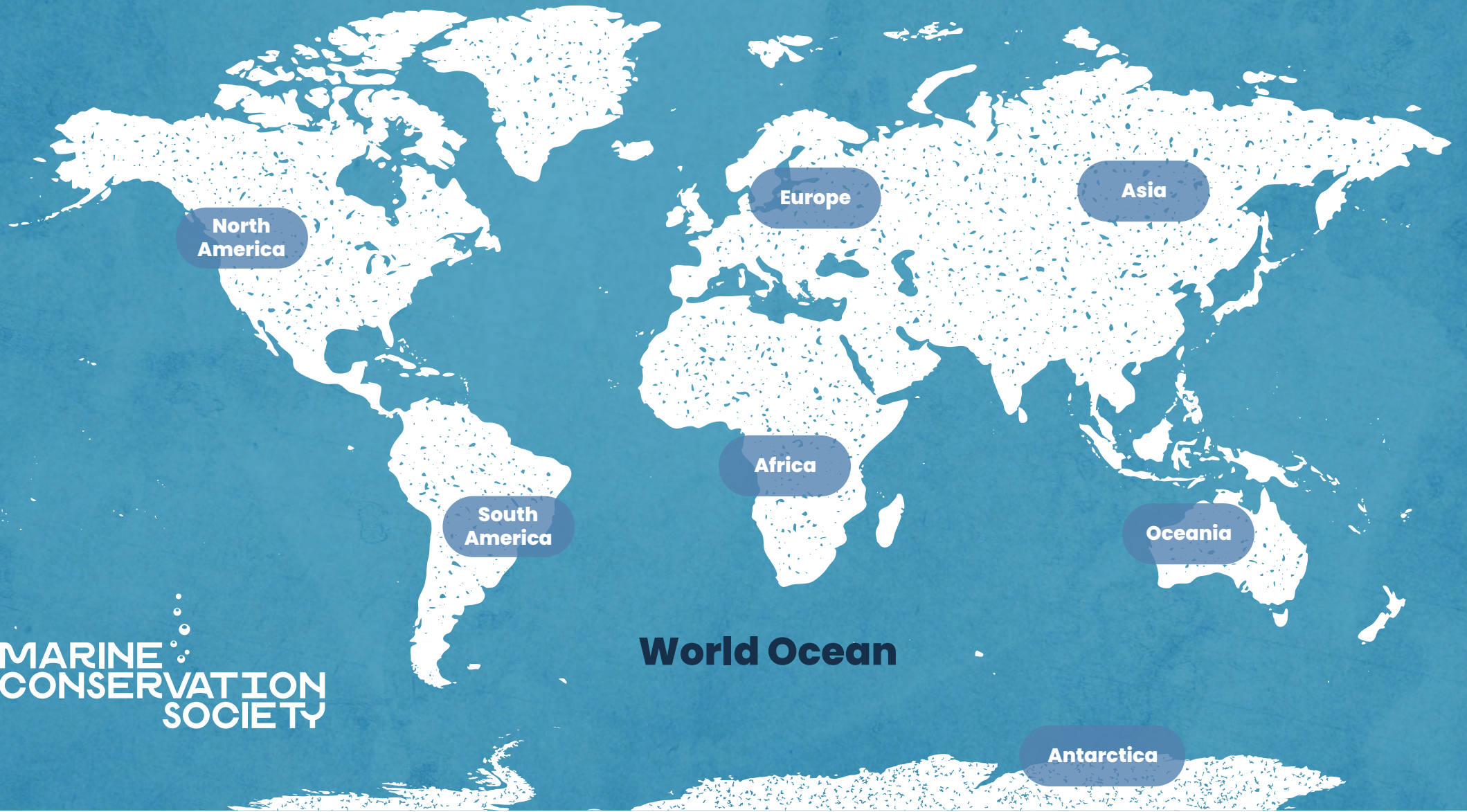
Biodiversity is important for ecosystem health. An ecosystem with greater diversity is much more likely to recover from damage from external factors compared to an ecosystem with little diversity

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



World Ocean

Antarctica

The Water Cycle



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Introducing the Ocean:
**Experiences and
Outcomes**

Experiences and Outcomes:

- I can describe the major characteristic features of Scotland's landscape and explain how these were formed. **SOC 2-07a**
- I can discuss the environmental impact of human activity and suggest ways in which we can live in a more environmentally responsible way **SOC 2-08a**
- By comparing my local area with a contrasting area outwith Britain, I can investigate the main features of weather and climate, discussing the impact on living things. **SOC 2-12a**
- To extend my mental map and sense of place, I can interpret information from different types of maps and am beginning to locate key features within Scotland, UK, Europe or the wider world. **SOC 2-14a**
- I can use evidence selectively to research current social, political or economic issues. **SOC 2-15a**

With thanks to our partners



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