EXPLORING OUR WILD ISLES: MARINE

ACTIVITY GUIDE FOR PRIMARY TEACHERS AND YOUTH GROUP LEADERS

SAVE OUR WILD ISLES

AGE 4 – 11 YEAR OLDS

WWF | RSPB | National Trust

© naturepl.com / SCOTLAND: The Big Picture / WWF

INTRODUCTION

Have you ever taken the time to think about all the amazing landscapes we have in the UK? Despite being small, the combination of weather, climate and ancient rock formations we have in the UK means that we are lucky enough to have some of the most diverse and beautiful landscapes on Earth.

From our high craggy mountains, boggy moorlands, rushing rivers, dense green forests, tranquil lakes, wildflower meadows, rocky coastlines and wild seas, each of these unique landscapes is packed full of different habitats with a huge variety of plants, animals and fungi.

Because of this, the UK is home to some amazing natural wonders: spectacular murmurations of starlings, dense woodlands sprinkled with bluebells, rutting deer on frosty mornings, glittering blue damselflies dancing over streams, damp forest floors exploding with mushrooms – it's all here, right on our doorstep!

But despite all of this, we have not been protecting our precious nature. We have farmed intensively across almost all of our land, we have expanded towns and cities putting pressure on surrounding countryside habitats, built miles of roads and trainlines carving up wild habitats and polluted our waters with plastics and pesticides.

The UK is now one of the most nature depleted countries in the world and many of our unique habitats are now under pressure. Over the last 50 years we've had huge losses in numbers of wildlife. More than one in seven native species are now facing extinction and more than 40% are in decline including some of our most iconic species like bumblebees and hedgehogs.

© Lewis Jefferies / WWF-UK

GETTING TO KNOW OCEANS

The ocean covers 70% of the Earth's surface and there is a whole world beneath the waves. 240,000 known species live in our oceans but millions may be undiscovered! UK seas are globally important for many species. Our seafloor provides a home for a fabulous variety of wonders, including brittle stars, sponges, corals, scallops and hermit crabs. Seagrass meadows and kelp forests provide both nurseries and a safe haven for many species. Above them you'll find the world's second-largest fish, the basking shark, along with 40% of the world's grey seal population.

Above the waves, our wild isles are home to around eight million seabirds. A staggering 80% of the world's Manx shearwaters can be found here, along with 55% of all northern gannets and around a tenth of Atlantic puffins. We have a huge responsibility to protect these species and the incredible habitats they rely on. But worryingly, although a third of our seas are officially protected, less than 1% are safe from damaging practices, such as unsustainable fishing.

We depend on our seas for so much, but how we use them is pushing this vital ecosystem to breaking point. Seagrass can capture carbon up to 35 times more quickly than a tropical rainforest, but in the UK, we have lost up to 90% of this precious habitat. Saltmarshes are also an invaluable carbon store, but in the UK we've already lost more than 75% of ours, and what does remain is at risk of rising sea levels. Warming seas, ocean acidification and rising sea levels are affecting the entire food chain, from the smallest plants and animals to iconic species such as puffins and basking sharks.

Our waters have been polluted and overfished for decades, and large areas of the seafloor have been destroyed by bottom trawling. And while we need the vital energy supplies our marine environments offer, new offshore developments are being planned with little consideration for nature.

As the demand on our seas continues to grow, every one of us can play a part in ensuring we use them sustainably and in harmony with nature. If we can do this, then not only will they teem with wildlife, but they will also provide us with sustainable seafood and renewable energy, help us tackle climate change, and be a source of health and wellbeing for generations to come.

We can turn the tide and give our seas a real chance to recover. In fact, they could become some of the most productive waters on our planet: good for nature and climate, and good for us. But only if we end damaging fishing practices, set sustainable fishing quotas, plan the use of our seas better, tackle climate change and protect important places for nature.

Marine facts

- The UK's seas and coastal habitats cover over 885,000 sq km.
- It's estimated that maritime activities in the UK generate £47 billion each year.
- Saltmarshes can help reduce the height of waves by up to 20%.
- Scotland's marine environment stores an estimated 9,636 million tonnes of carbon.

WHAT'S IN THIS GUIDE

Activity 1:
Fish and chips
(age 4-11)

Activity 2:
Wonders of the sea
(age 7-11)

Activity 3:
Once upon a time in numbers
(age 7-11)

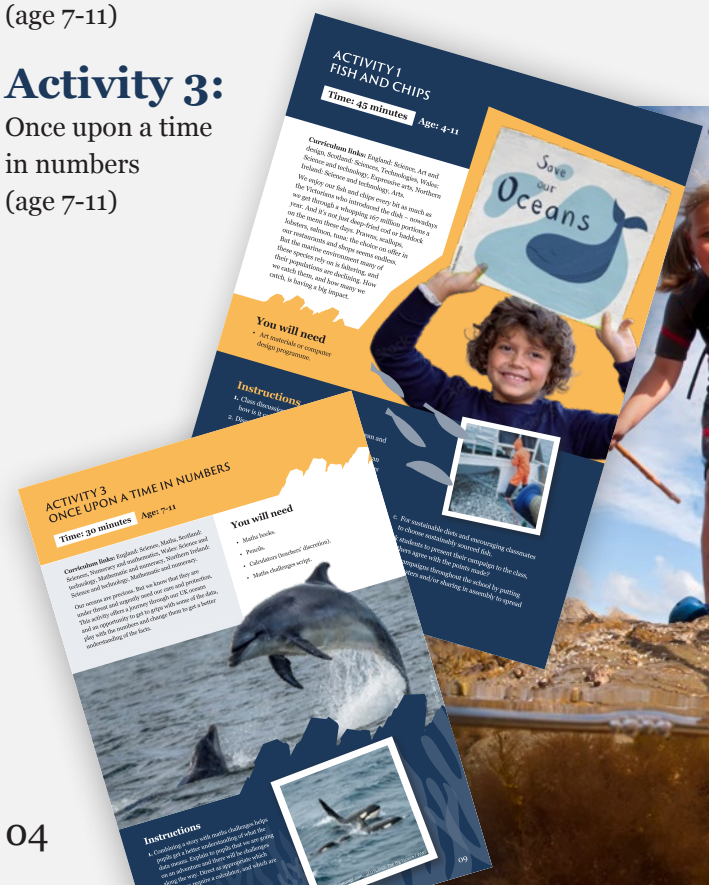
Activity 4:
Postcard to the future
(age 7-11)

Activity 5:
Nature-friendly careers

Sustainable Development Goals

The activities in this guide link to the following Sustainable Development Goal:

Conserve and sustainably use the oceans, seas and marine resources for sustainable development.



ACTIVITY 1
FISH AND CHIPS

Time: 45 minutes **Age: 4-11**

© Adobe Stock

Curriculum links: England: Science, Art and design, Scotland: Sciences, Technologies, Wales: Science and technology, Expressive arts, Northern Ireland: Science and technology, Arts.

We enjoy our fish and chips every bit as much as the Victorians who introduced the dish – nowadays we get through a whopping 167 million portions a year. And it's not just deep-fried cod or haddock on the menu these days, there's prawns, scallops, lobsters, salmon and tuna – the choice on offer in our restaurants and shops seems endless. But the marine environment many of these species rely on is faltering, and their populations are declining. How we catch them, and how many we catch, is having a big impact.

You will need

- Art materials or computer design programme.

Instructions

1. Class discussion: what do you eat from the ocean and how is it caught?
2. Discuss how fishing practices may damage the ocean and/or how overfishing may damage fish populations – what are the long term affects? (This could be a research project for older pupils).
3. In groups or as individuals, ask pupils to come up with an ocean campaign poster or artwork:
   a. About the things they love about the ocean and why they feel it should be protected (suggested for younger pupils).
   b. About how some unsustainable fishing practices are damaging the ocean and what the solutions could be.
   c. For sustainable diets and encouraging classmates to choose sustainably sourced fish.
4. Ask pupils to present their campaign to the class, do others agree with the points made?
5. Share campaigns throughout the school by putting up the posters and/or sharing in assembly to spread the word!

ACTIVITY 2
WONDERS OF THE SEA

Time: 20 minutes **Age: 7-11**

Curriculum links: England: Science, Geography, Scotland: Sciences, Social studies, Technologies, Wales: Science and technology, Humanities, Northern Ireland: Geography, Science and technology.

The UK seas are full of life. Sometimes we think our oceans are dull, grey and quiet. But that's not true – in the UK we have 330 different types of fish, 29 species of cetacean and around 100 types of seabird, wader and wildfowl. We have over 370 marine protected areas – we are understanding more and more that our marine habitats need protection – they provide us with food, tourism, livelihoods and are vital at carbon capture and our fight against climate change. This activity looks at what lives beneath the waves?

You will need

- Species and species description cards.
- Screen and projector – Google Earth.

Instructions

1. The UK has 30,000km of coastline. Using Google Earth https://earth.google.com/web/ find your school and zoom out to explore your nearest coastal area. Identify a beach, saltmarsh, settlements, cliffs, estuaries etc.
2. Zoom out further to the sea – it looks like nothing is out there. We're going to dive beneath the waves and see what species live there.
3. In pairs, pupils match the species card with the species description card.

Questions – can be a research task

- What do these animals eat? Can you identify which are carnivores, which are omnivores, and which are herbivores?
- Where does seagrass get its food from?

ACTIVITY 2
WONDERS OF THE SEA
SPECIES CARDS

SAVE OUR WILD ISLES

Spider Crab

Sea Slug

Seahorse

Mackerel

Bluefin Tuna

Grey Seal

Seagrass

Moon Jellyfish

ACTIVITY 2
WONDERS OF THE SEA SPECIES DESCRIPTION CARDS

SAVE OUR WILD ISLES

Description: Has long spindly legs and a crusty back.	**Description:** Long, straight green leaves which create meadows full of sea life.
Description: This animal is shaped like an umbrella and floats in the sea just below the surface of the water.	**Description:** A grey animal that swims in the sea but can also be found on land.
Description: A small grey/brown animal that looks a bit like a garden slug but with spiky skin.	**Description:** A big fish with fins on its side, top and bottom to help it speed through the water.
Description: This animal's head is shaped like a horse's head and it has a long curly tail that it uses to anchor itself.	**Description:** A long thin fish that stick together in groups. They have a pattern similar to a tiger on their backs.

ACTIVITY 3
ONCE UPON A TIME IN NUMBERS

Time: 30 minutes **Age: 7-11**

Curriculum links: England: Science, Maths, Scotland: Sciences, Numeracy and mathematics, Wales: Science and technology, Mathematic and numeracy, Northern Ireland: Science and technology, Mathematic and numeracy.

Our oceans are precious. But we know that they are under threat and urgently need our care and protection. This activity offers a journey through our UK oceans and an opportunity to get to grips with some of the data, play with the numbers and change them to get a better understanding of the facts.

You will need

- Maths books.
- Pencils.
- Calculators (teachers' discretion).
- Maths challenges script.

Instructions

1. Combining a story with maths challenges helps pupils get a better understanding of what the data means. Explain to pupils that we are going on an adventure and there will be challenges along the way. Direct as appropriate which challenges require a calculator, and which are mental maths.

We're going on a journey through the UK seas to learn more about what's out there and what are some of the challenges facing our marine habitats. **Ready – let's go!**

SAVE OUR WILD ISLES

The UK has 30,000km of coastline. Jump up off your chair and take a big step – that's about ONE metre. So that's 30 million steps! Can you imagine 30 million steps!?

Challenge: Scotland's sea area is six times more than its land area. If its land area is 77,910 km² then what is its sea area? Don't forget to include the unit of measurement.

As we whizz along in our boat, can you see the trawler ship in front of us? Behind the ship is an enormous net that goes right to the ocean floor catching everything in its path. Fishing like this damages marine habitats because nothing is left.

Challenge: In the UK we have special areas that are protected but trawler boats still fish there. Half of the UK's offshore protected areas that exist specifically to protect the seabed have experienced at least 1,000 hours of bottom trawling. Can you convert 1,000 hours into days? Can you convert those days into a fraction to show how many days each year these areas have suffered trawler fishing?

As we get closer, can you see that something is caught in the net? Let's get closer and have a look. It's a dolphin. That's not good. Luckily the dolphin wriggles itself free and swims away. A lucky escape.

Challenge: In 2019, 280 dolphins were accidentally caught in fishing gear. That's a lot. What does 280 look like? How many pupils are in your class? How many times do you need to multiply your class to reach 280?

Let's go diving, and see what's on the ocean sea floor. There's still plenty of light – look at all the seagrass. Seagrass meadows can be home to 160,000 fish (1 hectare of seagrass meadow = 80,000 fish and 100 million invertebrates).

Challenge: The UK has lost 92% of its seagrass in the last century. What percentage is that every year?

2. Pupils can continue the story on and incorporate facts and challenges of their own. They can then swap their stories/facts/challenges with a partner.

Facts to help further the story:

- The UK has lost around 10% of its coastal habitats since 1950 and is losing a further 3% each year.
- The UK has lost over 85% of its saltmarshes.
- Mean sea level around the UK has risen by around 12-16cm since 1900 and is expected to rise a further 25-78cm by 2050.

ACTIVITY 4
POSTCARD TO THE FUTURE

Time: 30 minutes **Age: 7-11**


© Shutterstock

Curriculum links: England: Science, English, Scotland: Sciences, Literacy and English, Wales: Science and technology, English, Northern Ireland: Science and technology, Language and literacy.

Trawling is a method of fishing that is highly destructive to our marine habitats. It sweeps up all living things in its path and discards what is not 'valuable'. We are also beginning to realise that it not only threatens wildlife populations, but also releases carbon stored on the seabed which has implications for climate change. We need better methods of fishing that are sustainable, planet positive and put our ocean habitats above our desire for profit.

Instructions

1. Begin with an image of a trawler boat (provided). Explain to pupils that trawling is a method of fishing that puts a net all the way to the ocean floor and collects everything. The fish and other living things that we can't eat get discarded. This is a destructive way to produce food from our oceans.
2. Explain that we need better ideas. Ask the pupils to design a method of fishing that solves this problem. The key problems to address are:
   i. Trawling in the same place repeatedly doesn't allow fish stocks to recover.
   ii. Trawling collects up everything, whether we can eat it or not.
   iii. Fish and other animals caught in nets often die.
3. Each pupil is given a postcard and asked to write to a fisherman in the future (ten years' time) to tell him/her about their ideas for the future of fishing. Include:
   - An explanation of what is happening now and why it's a problem.
   - An explanation of the design/invention/strategy for the future of fishing.
   - An annotated diagram (on the front of the postcard) to show how the design solves the three main problems above.

You will need

- Blank postcard template.
- Pens.
- Trawler ship image.


© Adobe Stock

Questions

- What other activities cause damage to our oceans?
- Can you think of solutions to these problems?

ACTIVITY 5
NATURE-FRIENDLY CAREERS


© Yoon S. Byun / WWF-US

We can all try to help nature in our daily life.

However, some people can help solve some of the big issues facing nature because they have a job that can make a big difference.

1. Whole class discussion
(10 mins)

- What problems have we learned about that affect the marine environment? (Gather suggestions).
- Pick out a few of the suggestions and ask for ideas of what jobs might be able to help solve the problem by taking action or doing something differently. E.g. Over-fishing: Fishing vessels not taking too much, politicians making laws to protect areas.

2. Think, Pair and Share activity
(5 mins)

- Choose one of the jobs from the list and discuss how you would try to do good for nature if that was your job.

3. Whole class discussion
(10 mins)

- Go round and hear from each pair, building up a list of the jobs that could influence the health of the marine environment.
- How might people in these jobs make choices that could help nature?
- Choose one or more jobs that don't have an obvious link to the marine environment (e.g. artist, builder, teacher, politician, shop manager, banker) and see if the class can think of ways they could help. E.g nature-friendly products and materials, building awareness of the importance of nature etc.

USEFUL LINKS AND RESOURCES

Learn to Love Nature: Focus on Oceans
Learn to Love Nature - Focus on Oceans | WWF

Our Seas
primary_ourseas.pdf (panda.org)

Oceans and Plastic Pollution
Oceans and Plastics Pollution classroom resource | WWF

Biosecurity for Life resources
Education (biosecurityforlife.org.uk)

Vote for Nature – classroom lesson
https://www.tes.com/teaching-resource/vote-for-nature-12569702

Follow us on Twitter

@WWFUK_Education

@RSPB_Learning

Working together to protect and restore UK nature.

WWF RSPB National Trust