EXPLORING OUR WILD ISLES: MARINE

ACTIVITY GUIDE FOR SECONDARY TEACHERS AND YOUTH GROUP LEADERS

SAVE OUR WILD ISLES

WWF | RSPB | National Trust

AGE 11 – 16 YEAR OLDS

© naturepl.com / Alex Mustard / 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.

© Alexander Mustard / WWF-UK

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.

© Alexander Mustard / WWF-UK

WHAT'S IN THIS GUIDE

Activity 1:
Gentle giants

Activity 2:
Back in time

Activity 3:
Layers upon layers

Activity 4:
Decision time

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.

© Adobe Stock

ACTIVITY 1
GENTLE GIANTS

Time: 30 minutes

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

Basking sharks are the second largest shark in the world and the largest living creature in UK seas. Their population has declined by 80% in the last century. They reproduce at a very slow rate and so getting their numbers back up is a huge challenge. They are also endangered and not much is known about them. This activity offers students the chance to learn more about a rare and relatively unknown British marine species.

You will need

- A3 paper.
- Pens.
- Basking shark fact bank.
- Basking shark image.

Instructions

1. Show students the image of a basking shark (provided) - ask them if they know what it is? Ask them how many of them knew that UK waters are home to the second largest shark in the world? Sharks capture our imagination and species like the great white are made famous through film and news stories. It's harder to care for creatures we have little knowledge or understanding of.
2. Students are asked to make a poster to raise awareness of these gentle giants. The first step to caring for our planet is learning its value and connecting with what's out there. Students can use the fact bank (provided) to show how awesome these rare creatures really are.

Questions

- What other challenges of the climate and nature crisis do you know about - what knowledge can you share and who can you share it with?
- Think of a time when you learnt something new about an issue and it inspired you to care.
- What opportunities do you have to speak up for the natural world?

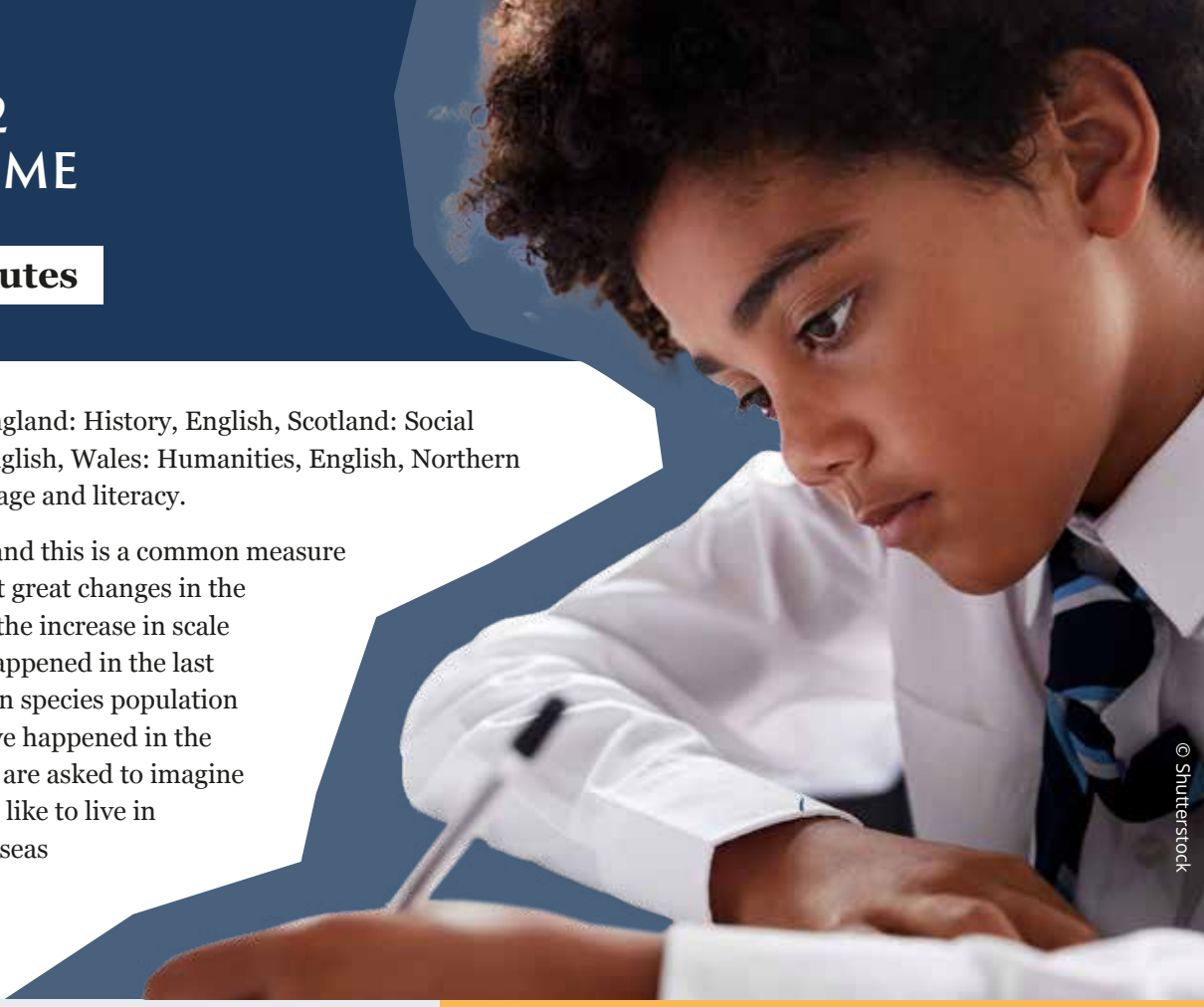
SAVE OUR WILD ISLES

Basking sharks – fact bank

- There are around 19,000 basking sharks around Scotland and Ireland.
- Basking sharks live all around the UK's coast but they are most frequently seen around the south-west, Wales, Isle of Man and west coast of Scotland.
- Basking sharks are mainly found across the Atlantic and Pacific Oceans.
- Basking sharks may have declined by up to 80% in the past century.
- Due to the slow reproduction rate of basking sharks, it will take a long time for their numbers to recover.
- Fully grown basking sharks can be up to 6.7-8.8 metres in length, on average.
- Basking sharks weigh, on average, 4.5 tonnes.
- Even though basking sharks mainly eat plankton, they have up to 1500 tiny teeth.
- Males reach maturity at 12-16 years old and females when they are around 4.6-6.1 metres long, which is around 20 years old.
- Basking sharks are around 1.5-2 metres long at birth.
- It's estimated that basking sharks live to 50 years old.
- Basking sharks can strain up to 2 million litres of water per hour.
- Basking sharks can travel huge distances. One animal travelled 1,167 miles from the English Channel to the Western Isles of Scotland in 77 days. Basking sharks normally swim at 2.5-4 mph, although they can swim faster.

ACTIVITY 2
BACK IN TIME

Time: 30 minutes


© Shutterstock

Curriculum links: England: History, English, Scotland: Social studies, Literacy and English, Wales: Humanities, English, Northern Ireland: History, Language and literacy.

A century is 100 years, and this is a common measure used when talking about great changes in the natural world. Much of the increase in scale of human activity has happened in the last 100 years. Big changes in species population numbers and health have happened in the last 100 years. Students are asked to imagine what it might have been like to live in a United Kingdom with seas teeming with life.

Instructions

1. Discuss with students the time frame of a century – what was the date 100 years ago?
2. What do we already know about life in the UK then – what was life like?
3. Students are asked to imagine and then write a short creative piece about life in the ocean 100 years ago. Using the internet for research, students can describe a world where our local seas are teeming with life, our skies are full of the sounds of sea birds and our rock pools are full of creatures to discover.
4. Things to consider:
   i. Who is the main character in their story and why are they at the coast – is it a visit, do they live there, do they work there?
   ii. Describe the sounds, smells, shapes and colours of a thriving UK coastline.
   iii. How would someone 100 years ago interact with the sea - are they in a boat, are they snorkelling, are they on land looking out?
   iv. Add specific species - what are the names of seabirds we find on our coastlines? What might be found in a rock pool?

You will need

- Paper and pen.
- Access to the internet for research.


© James Sellen / WWF-UK

Questions

- What do you think our marine habitats will be like in 100 years from now - are you optimistic about the future?
- What actions can we take today to ensure a better future for our marine habitats?

ACTIVITY 3
LAYERS UPON LAYERS

Time: 30 minutes

Curriculum links: England: Science, Scotland: Sciences, Wales: Science and technology, Northern Ireland: Science and technology.

This activity takes a holistic view of a marine habitat and allows students to learn about specific species living in UK waters. Students are then asked to make a judgment on how threatened this species is and assign a traffic light colour to each species.

Instructions

1. Students identify and group where each species is found at different layers of a marine habitat - the sea floor, sea level and sea surface.
2. Students then complete research to decide how endangered they each are.

You will need

- Species cards.
- Access to the internet for research.

Questions

- How do you think experts make judgments on how threatened a species is? Is it the speed of its decline? Is it the total numbers? Is it to do with how vulnerable the species is in terms of reproduction, food sources etc? What factors need to be considered?
- Pick a species that is in decline – what can be done to help the species recover?

ACTIVITY 3
LAYERS UPON LAYERS
SPECIES CARDS

SAVE OUR WILD ISLES

Common lobster

Northern gannet

Wolf eel

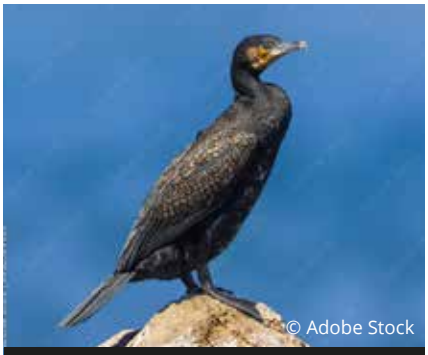
Bluefin tuna

Common cuttlefish

Puffin

Mackerel

Seagrass



Great cormorant

Celtic sea slug

Basking shark

ACTIVITY 4
DECISION TIME

Time: 45 minutes

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

One of the challenges with our oceans is that people have different ideas about how it should be managed. Is the ocean first and foremost for our benefit? Should we prioritise wildlife now that the data shows that many marine species are seriously threatened? Some people believe that leaving the ocean completely alone is what is needed to allow nature to rebalance. In this activity, students are given the opportunity to explore some different points of view.

You will need

- Opinion cards.
- Classroom set up in a circle for open discussion.

Instructions

1. Explain to students that we know that our seas and oceans are in a bad way. But what is the best way to manage it for its own future and for our own?
2. Select four students to represent the UK Ocean Board - an invented board of decision makers for the future of the UK's oceans:

- Chair x1 – the job of the chair is to manage the meeting and direct who speaks and when. Make sure that every group is heard, and every group is questioned equally to test their opinion thoroughly.
- Minute-taker x1 – the minute taker records the meeting. Decide which points are important and write them as a summary. Write in note form, rather than full sentences.
- Questioner x 2 – work together to listen carefully to each opinion offered and make a note of relevant questions. What are flaws in this argument for the natural world or for the human population?

3. Divide the rest of the class into four groups and assign an opinion card to each (ideal group size no more than six).

Format of activity

- The chair introduces the meeting - who is present and what is the aim of the meeting.
- Each opinion group share their statements whilst the questioners write down questions they want to ask.
- After all 4 groups have spoken, the questioners ask questions to each group making sure the questions are fairly balanced.
- The chair asks each group if they have any questions for each other.
- The minute-taker summarises the meeting.
- The four students representing the UK Ocean Board make a decision on whose opinion was best. This could be more than one group or parts of more than one opinion.
- Close the meeting.

Question

- Who do you think has the strongest influence on how we interact with our oceans - voters, big business, local populations? Explain what you think and why.

ACTIVITY 4
DECISION TIME
OPINION CARDS

SAVE OUR WILD ISLES

Opinion card one – local fishing business – Padstow, Cornwall

We're a family run business and we have been fishing the local waters around Padstow for generations. We are deeply connected to the sea, and it provides our livelihoods.

The local area relies heavily on tourism and during summer months we supply local hotels, restaurants, and cafes. The future of the ocean depends on its value to us – it's estimated that maritime activities in the UK generate £47 billion each year. This brings people to our local area; people enjoy the benefits of the ocean and the food it provides. We have protected areas and campaigns to protect our oceans already, so why does anything need to change?

Opinion card two – local conservation charity – Colwyn Bay, North Wales

We believe that it's time to give every penny and every hour to the preservation of our oceans. For too long people have been the priority and because of this over a third of UK seabirds have declined by 20% or more since the 1990s. In 2019, UK seas failed to meet 11 of the 15 indicators for good environmental health. If current rates of damage continue, the UK could lose over half of its marine habitat by 2050. These statistics show that it's time to put all our energy and focus into boosting our marine habitats – stop unsustainable fishing, work harder to stop climate change, no matter the cost.

Opinion card three – resident – Brighton, Sussex

I see the effects of human activity and how it can be a problem, but I also enjoy having access to my local beach. In the summer thousands of people enjoy our beautiful beaches but I see the negative effects including rubbish, pollution and damage to habitats. I sometimes think we should leave marine areas alone. Too often, we work tirelessly to protect one species only to find that the knock-on effect to another species causes a problem somewhere else in the ecosystem. We are still learning. We need to sit back and watch.

Opinion card four – commercial fisherman – Grimsby docks, Lincolnshire

My life as a commercial fisherman is both incredibly challenging and immensely rewarding. I love the sea and work hard to keep this ancient and vital industry thriving. Since 1961, demand for fish has risen at twice the rate of the world's population and in the UK alone we consume £5.7 billion worth of fish and seafood products every year. My job is very important for my own livelihood, however, 34% of fish stocks are already overfished and 60% are at the maximum sustainable level and this worries me. Fishing has been in my family for generations, I don't know what other job to do.

ACTIVITY 5
NATURE-FRIENDLY CAREERS

We can all do what we can to give nature a helping hand in our own homes, gardens and communities. However, we may be able to have a bigger impact on nature through the job we have after we finish education. We can aim to have a 'sustainable career', which means making choices about what we do that are good for the planet as well as good for us.

Industries and big organisations can have a much bigger impact – for good or bad – on a landscape than a single person, and we can make career choices that allow us to be a force for nature in our working lives.

Think, pair and share activity (5 mins)

1. Consider the issues that are affecting the marine environment and list the human activities that are causing problems for wildlife or helping it to thrive.
2. What jobs can you think of that are linked to the problems or solutions? Some ideas that can be introduced and discussed are listed below.

Examples: Fisheries manager, fishmonger, lifeguard, scuba diving instructor, seaweed farmer, hotel manager, coastguard, chef, conservationist, photographer, teacher.

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.
- Pick on one or two and discuss the ways they have impact, and what choices they can make about how they go about their job.

Think, pair and share activity (5 mins)

Ask each pair to select one or two of the jobs on the list (you may wish to allocate them to ensure the pairs do not all discuss the same).

- What choices do we think someone following this career could make that could ensure they are doing good for nature?

Whole class discussion
(10 mins)

Feedback from pairs.

See if the choices highlighted can be grouped at all.

Key points to emphasise:

1. Choosing to work for a company that is acting responsibly (making sure they understand their impact on nature and then seeking to minimise it).
2. Changing a company while working for it by ensuring it prioritises nature and reduces impact.
3. Innovating (finding new ways to do things or exploring new technologies to do a job without impact on nature).
4. Doing good (e.g. conservation).

For more information and free resources on sustainable careers visit **www.wwf.org.uk/get-involved/schools/sustainable-futures**

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)

World of Sharks talk
www.youtube.com/watch?v=XDeGTVBDzx0

Oceans – WWF talk
www.youtube.com/watch?v=wWVKJdvobac

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

Vote for Nature – classroom lesson
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.