

# COASTAL HABITATS



# Coastal Habitats: Content Page

## Introduction

- [The Scottish Wildlife Trust's Discovery Den](#)
- [The Activity Key](#)
- [Welcome to the Coastal Pack](#)
- [Scottish Coastline](#)
- [Planning a Session](#)

## Section 1: Connecting to the Coast

- [Activity 1: Shoreline Detectives](#)
- [Activity 2: Snorkel School](#)
- [Activity 3: Beach Birds](#)
- [Activity 4: High or Low \(tide\)](#)
- [Activity 5: Sound Scape](#)
- [Activity 6: Rock Pool Ramble](#)
- [Activity 7: Sink or Swim?](#)

## Section 2: Exploring Coastal Creatures

- [Activity 8: Bird Beak Lab](#)
- [Activity 9: Ocean Giants](#)
- [Activity 10: Bottle Basking Sharks](#)
- [Activity 11: Bird Nest Architects](#)
- [Activity 12: Coastal Creature Masks](#)
- [Activity 13: Egg Box Crabs](#)
- [Activity 14: Web of Life](#)

## Section 3: Key Threats and How We Can Help

- [Activity 15: Coastal Clean Up](#)
- [Activity 16: Save Our Seabirds Poster](#)
- [Activity 17: Fish Forage](#)
- [Activity 18: Turbine Tig](#)
- [Activity 19: Plastic in the Kitchen](#)
- [Activity 20: Citizen Scientists](#)

## Additional Notes for Educators

- [Follow up Opportunities](#)
- [Visiting the Coast Safely](#)
- [Rock Pooling: Safety and Top Tips](#)
- [Curriculum Links](#)



# The Scottish Wildlife Trust's Discovery Den



The Scottish Wildlife Trust manages a network of over 100 wildlife reserves across Scotland and is a member of the UK-wide Wildlife Trusts movement.


The Trust successfully champions the cause of wildlife through policy and campaigning work, demonstrates best practice through practical conservation and innovative partnerships, and inspires people to take positive action through its education and engagement activities, such as this pack.

For more information, visit the Scottish Wildlife Trust website [here](#).

## How to Navigate the Discovery Den

**1. Start here!** This curated pack of activities will help you discover the coastline and its wildlife, from learning to exploring to helping.

**2. Activity key.** To help you find the types of activities you like in this pack, check out the [Activity Key](#). Each activity page will display its relevant icons in the top right corner.

**3. Printable.** Activities throughout this pack have printable pages for tech-minimal delivery. Print out prior to your activity and hand out to your group (and re-use where you can!). These are denoted by the  icon at the bottom right-hand side of activity pages.

**4. Cross-curricular.** This pack has different links to outcomes in the Scottish Curriculum for Excellence. See the [Curriculum Links](#) page at the end of the pack for details.

**5. The web portal.** We have other packs just like this one! You can find other downloadable packs by heading over to the Discover, Learn, Play section on our website [here](#). You can also find individual activities (those included in this pack, plus more!) which you can filter through to find those that suit your needs.

We would love to see you taking part in the activities! You can share with us by using **#DiscoverLearnPlay**

Find us on social media



## The Activity Key

To help you find the types of activities you like, each activity page will display its relevant key icons on the top right corner.

Each activity can be used independently, or several used together to make a longer session, depending on your children, time, space and available resources.

### Length of time



Up to 15 mins



30 mins



45 mins



Hour or more

### Location



Outdoor only



Indoor or outdoor

### Activity Type



Mindfulness



Active



Getting science-y



Communicating



Creative



Ice Breaker



Helping nature

# Welcome to the Coastal Pack

It is important to understand how everything in nature is connected – including us! As a society, we are increasingly disconnected from nature; we are spending less time in nature and often forget how much we rely on it to survive. Spending time outside and learning about how living things depend on each other is important when re-establishing our connection to nature. Plus, spending time outdoors can improve health, reduce stress, increase confidence, and many other amazing things!

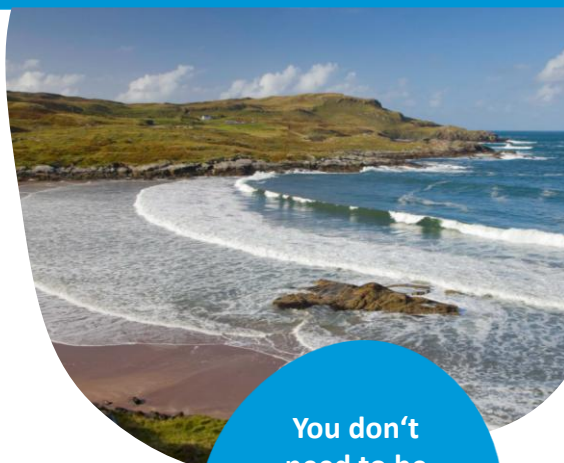
This pack and its resources are designed to help children:

- Explore the coast and start to foster a deeper connection with it
  - Investigate the life that lives by the shore
  - Understand the threats coastal habitats are facing
- Discover different actions that can be taken to help protect our coasts

There are **three sections within this pack** and each section has corresponding resources that can be used to support nature discovery, learning and play. The suggested age range for these activities is **8 – 12 years**, although most of the activities can be adapted for older and younger learners.

**Each activity can be used independently**, or **several used together** to make a longer session, depending on your children, time, space, and available resources.

At the end of the pack, you can find *Additional Notes for Educators* which includes some top tips, and the *Curriculum Links*, which breaks down the **curriculum outcomes for each activity**.



**You don't need to be by the sea to use this pack!**

**Section 1**  
Connecting to the Coast  
**Section 2**

Exploring Coastal Creatures  
**Section 3**  
Key Threats and How To Help



# Scottish Coastline

As you can imagine, coasts are a big part of the Scottish landscape. Our coasts and waters support a rich and diverse array of spectacular wildlife and natural habitats that provide a wealth of benefits to society, from food and jobs to education and inspiration.

Our coastline here in Scotland includes around 800 islands and stretches to about 11,800km. If all its curves and creases were straightened out, **our coastline would stretch from Scotland all the way to Australia!**

## Coastal benefits

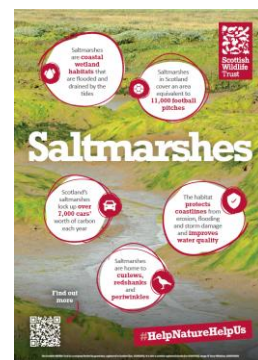
Scotland's coastline is made up of different habitats from **cliffs to beaches to mudflats to machair**. Our coastal habitats can be incredibly important when it comes to helping with **flood control, capturing carbon, protecting us from storms** and much more.

For example, in Scotland, the amount of carbon stored in the marine and coastal environment (which we call **blue carbon**) is greater than all land-based ecosystems (such as forests), which means they help to **reduce climate change**.

Learn more about important **seagrass meadow, maerl bed, and saltmarsh habitats** through our #HelpNatureHelpUs posters.

You can download the posters (with lots of fun facts) from our website [here](#).

#HelpNatureHelpUs



## What the Trust is doing to help protect our coasts

Our **Living Seas Project** focuses on both marine planning and community engagement at both local and national levels. We are working to help more people realise the importance of Scotland's seas!

Our Living Seas team has led on innovative work including the Oceans of Value project, which captured the range of values placed on the marine environment here in Scotland.

We are now excited to be delivering **Sea the Connection**, an innovative engagement and advocacy project based on **Ocean Literacy** that will benefit coastal communities and the marine environment.



**What is Ocean Literacy?**  
“An understanding of your influence on the ocean, and it's influence on you”.

## Scottish Coastline

### Some things to spot in Scotland!

When we think of white sandy beaches, blue waters, and spotting an array of wildlife from dolphins to sharks to turtles, we often think of a holiday abroad! But the Scottish coast has all of this to offer and more.

Scottish coasts are home to some incredible (and rare!) habitats and wildlife. Here are just a few things you can spot...



Scotland has more than **50,000 hectares of sand dunes** – which is 71% of Great Britain's coastal sand resource (so a lot!). We can find Dunes all over Scotland, and they are home to a variety of species from bumblebees to great crested newts to ringed plovers (to name a few!). They also provide shelter, playing a **key role in coastal protection**.



**Scotland has many internationally important colonies of sea and shorebirds.** On estuary mudflats you may find curlews or oystercatchers searching for food in the mud. In the summertime, our cliffs **are home to hundreds of thousands of seabirds**, from guillemots to gannets to puffins. Pictured is a puffin successfully catching its favourite meal, sandeels!



The waters around Scotland are among the best in Europe **for seeing dolphins, whales and porpoises**, collectively known as cetaceans. More than 20 cetacean species can be seen in Scottish waters including bottlenose dolphin, minke whale, and orca. Pictured are short-beaked dolphins spotted near South Uist.



**Machair (pronounced mach-err) is a wildflower rich coastal grassland.** It is one of the **rarest habitats in Europe**, unique to north and west Scotland, and western Ireland – with 70% of it found in the Outer Hebrides. The diversity of flowers that bloom in machair make it **a colour spectacle**. It supports a rich life of insects, including the rare Great Yellow Bumblebee. It houses nests of lapwings and many other birds – and is the favourite habitat of the secretive corncrake!

## Scottish Coastline

Make a day of it!

### Visit our Montrose Basin Reserve and Visitor Centre

Montrose Basin is an enclosed estuary of the river South Esk covering 750 hectares of tidal mudflats offering feeding and roosting ground to a variety of bird species. In the autumn and winter, **the Basin is home to over 100,000 migratory birds**, including pink-footed geese, or what our visitor centre staff nickname 'pinkies'!

A busy basin full of pinkies!

Our Montrose Basin Visitor Centre offers panoramic views across the reserve. Telescopes and binoculars are available for you to see the wildlife up close, and we have a small wildlife-themed gift shop. It is a great day out for all ages!

A range of children's activities are always available in the centre, and **we also offer educational/group visits**. You can find out more by visiting our website [here](#).

If you are interested in organising an educational/group visit to Montrose Basin, please contact the visitor centre on **01674 676 336** or [montrosebasin@scottishwildlifetrust.org.uk](mailto:montrosebasin@scottishwildlifetrust.org.uk) for more information.

### Discover Our Snorkel Trails

Experience the wonder beneath the waves on one of our **award-winning snorkel trails**. We have selected sites on coasts around the country that showcase the amazing diversity of Scotland's seas.

Bursting with marine life, you could see everything from small sea squirts, sponges and anemones right up to dolphins, whales and harmless basking sharks.

Head over to our website [here](#) to download our **trail leaflets** and read up on some snorkel safety. Happy diving!



## Planning a Session

This pack contains a variety of different **coastal themed activities**, from warm-up games to creative crafts to outdoor exploration. **Each activity can be used independently, or several used together to make a longer session**, depending on your children, time, space, and available resources.



Most of the activities link nicely together to create a longer session, but we have picked out a few below that you could start with. The examples below may follow the activity flow of:

**Warm up game**  
Introduce topic



**Main activity**  
Fostering  
curiosity



**Reflection activity**  
Discuss and solidify  
learning

As leaders, it is great to structure outdoor education sessions, but it is important to also stay flexible. **Child-led exploration and play is important**, so if your group become inquisitive around something, take longer on a certain activity they are enjoying, or ask off-topic questions, it is great to go along with it organically. Your sessions may end up looking differently than planned, but that is ok!

### Session Idea 1:

Activity 4: High  
or Low (Tide!)



Activity 6: Rock  
Pool Ramble



Activity 13: Egg  
Box Crabs

### Session Idea 2:

Activity 17:  
Fish Forage



Activity 15:  
Coastal Clean  
Up



Activity 16:  
Save Our  
Seabirds Poster

### Session Idea 3:

Activity 2:  
Snorkel  
School



Activity 1:  
Shoreline  
Detectives



Activity 5:  
Sound Scape

## Section 1: Connecting to the Coast

This section is all about helping children foster a better connection with coastal habitats.

Even if you aren't by the sea there are plenty of activities you can do!



In this section you will find **7** activities:

1. [Shoreline Detectives](#)
2. [Snorkel School](#)
3. [Beach Birds](#)
4. [High or Low \(tide\)](#)
5. [Sound Scape](#)
6. [Rock Pool Ramble](#)
7. [Sink or Swim?](#)

Each activity can be used independently, or combined to create a longer session, depending on your children, time, space, and available resources.

To find out the curriculum links for each activity, check out the [Curriculum Links](#) page at the end of the pack.

## Activity 1: Shoreline Detectives

### Educator Notes

Head for a walk along the coast and see what treasure you can find

#### Background:

The coast is full of treasure, with lots of different natural objects scattered around. Encourage your group to look more closely at things and think about what the object/species is and what its role is in the ecosystem.



Keep your eyes peeled for an **egg case** or '**mermaid's purse**', which is a pouch protecting a developing skate, shark or ray embryo! Pictured here is a dogfish egg case.

You may spot a pile of worm-like mounds on the beach - those are signs of **lugworms**. These wriggly piles of sand (called casts) are formed by lugworms swallowing sand and then pooing it out!



You may find some shells, but what kind are they? There are lots of different types, from whelk to mussel to oyster shells. Photographed are **dog whelk shells** which are conical with a rounded spire – the empty ones are often used as homes by hermit crabs!



#### What you will need:

- Printed activity sheet
- Pen/pencil
- Clipboard (optional)
- Magnifying glasses (optional)
- Printed wordsearch (optional)

#### Instructions:

1. Before heading to the coast, read our [Visiting the Coast Safely](#) section. On the beach, have your group become shoreline detectives, searching high and low to find as many natural objects on the spotter sheet as they can. You can work in pairs or small groups here.
2. Children can tick items off their sheet as they go along. Try and encourage them to stop and engage their senses. Have they found some items with a rough texture, or perhaps soft or squidgy? Do any of them have a certain smell, shape, or colour? Has anyone found anything interesting that isn't on their sheet?
3. It is important to leave natural objects and coastal creatures at the coast - everything in nature has its place! Remember to take your rubbish home and wash hands afterwards!
4. You can print off the WHALE of a wordsearch activity sheet for your group to complete if you have extra time during your session.

Length: 

Location: 

Activity Type:  

INFORMATION KEY

Learn more about **mermaid's purses** on our YouTube channel by clicking the icon below





# Shoreline detective



Beach plant



Mermaid's purse



Cockle shell



Coloured pebbles



Oyster shell



Seaweed



Driftwood



Whelk eggs



Whelk shell



Gull feather



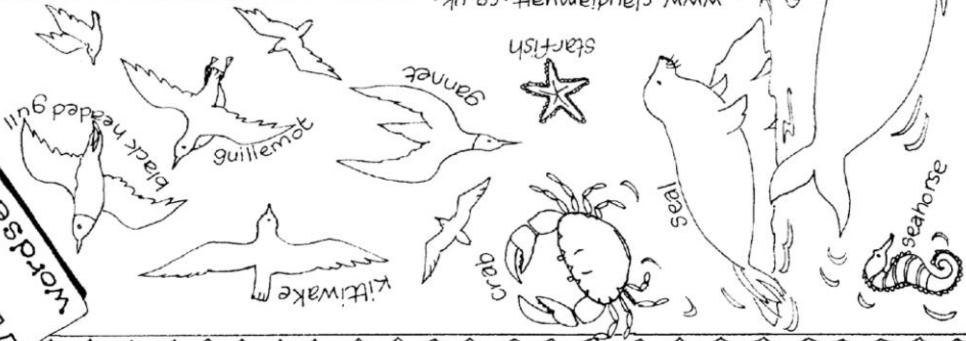
# Wildlife watch

See if you can find all these creatures in the wordsearch - up, down, backwards, forwards or diagonally, they're all in there. Also see how many times you can find the word WATER. Two other words are hiding in there too, something that does a lot of damage to the coast and the sea. Here's a clue: P \_ \_ \_ R \_ \_ \_

Z	R	T	E	G	U	I	L	E	M	O	T	S	E	E
P	R	E	T	A	W	D	H	A	D	E	D	E	R	P
O	U	R	T	B	A	S	K	I	N	G	H	A	R	K
N	D	N	A	A	S	A	F	E	P	U	C	L	U	W
I	O	R	W	O	W	E	S	U	L	S	O	C	B	A
F	L	O	C	I	T	S	A	L	P	T	I	M	B	T
F	P	A	T	Z	L	E	T	L	I	C	A	B	I	E
U	H	T	Y	O	G	A	N	L	E	T	U	H	S	R
P	I	L	O	T	W	H	A	L	E	S	O	T	H	U
K	N	P	O	B	W	O	H	S	I	F	A	T	S	S
G	O	W	A	T	E	R	E	T	A	W	G	U	L	L
P	O	R	P	O	I	S	E	B	L	A	K	E	Q	E
K	C	O	R	A	R	E	T	A	W	R	H	S	Y	

www.claudiamyatt.co.uk

## A MILE of a wordsearch



## Activity 2: Snorkel School

### Educator Notes

Try this game to learn some marine life hand signals used when snorkelling in Scotland!

Length: 

Location: 

Activity Type:  

INFORMATION KEY

### Background:

When we think of snorkelling, we often think of going abroad to somewhere warmer and more exotic... but **Scotland is bursting with marine life** (granted the water can be a little chilly!). When snorkelling in Scotland you could see everything from small sea squirts and anemones to fish and crustaceans to dolphins, whales and harmless basking sharks.



When snorkelling, **divers need to use hand signals to communicate** with each other. This can be from giving navigation directions to pointing out wildlife species.

Some species can be harder to spot because of their camouflage or tiny size, so it can be helpful for snorkellers and divers to be able to point out species they have seen to the others.

When describing a marine creature, hand signals typically mimic their appearance or movement. Many of these hand signals are also shared with sign languages, such as American sign language (ASL).

### What you will need:

- An open space (e.g. by the coast, a grassy area, or an indoor space)
- Instruction sheet (can be printed or digital copy)

### Instructions:

See next page.

Fancy getting in the water and looking for marine life? We have award-winning snorkel trails across Scotland's coasts! Find out more on our website [here](#)



# Snorkel School Instruction Sheet

## Game Instructions:

There are a few ways to play this game, depending on your space and group size, but we have outlined an example below.

1. Mark the boundaries of a rough area so everyone knows to stay in the zone during the game.
2. Go through each hand signal (there are eight below, but you don't have to use them all) with your group so everyone becomes familiar with them – going over each one at least twice is ideal.
3. Start by getting your group to warm up by moving around as if they are snorkelling under water. Whilst everyone is snorkelling around, shout out a marine species (e.g. shark) – everyone stops and makes the sign for shark, then starts snorkelling around again. You can play it like this, shouting out different species, for as long as you like.
4. You could also act out the marine animal and the group need to guess what it is by replying with the hand signal. Or, if you want to add a competition element, you could have individuals go head-to-head and first one to sign correctly gets a point.



**Shark:** Hold the side of your hand against your forehead



**Shrimp:** Point your index fingers upwards on either side of your forehead



**Turtle:** Place one hand on top of the other and rotate your thumbs



**Seal:** Make a clapping motion with both of your arms extended



**Dolphin:** Ripple and move your index finger to mimic the way a dolphin swims



**Jellyfish:** Move your hand while opening and closing your fingers like tentacles



**Crab:** Tap the fingers and thumb of both hands together, angled sideways



**Lobster:** Do a scissor-like motion with your index and middle finger, on both hands

## Activity 3: Beach Birds

### Educator Notes

Head out birdwatching by the water to start learning about the fascinating lives of birds!

### Background:

Scotland's rich seas and long coastline mean seabirds and shorebirds are a speciality. They can be seen throughout the year, but the **best time of year for spotting them is in the spring and summer**, as many of them migrate to Scotland to breed.

On estuary mudflats you may find oystercatchers or curlews searching for food in the mud. In the summertime, our cliffs are home to hundreds of thousands of seabirds, from guillemots to gannets to puffins.



As you watch them, can you observe different behaviours, such as searching for prey, watching out for predators, or socialising?

### What you will need:

- Printed activity sheet(s)
- Pen/pencil
- Clipboard (optional)
- Binoculars (optional – you could make your own binoculars using our guide found on the following printable pages)

### Make your own binoculars



Printable activity guide!

### Instructions:

1. Head to the coast with your spotter sheet and see what birds you can find! If you can't get outside, you could play some video footage instead. Before going to the coast, read our [Visiting the Coast Safely](#) section.
2. The key to this is to be as stealthy and quiet as you can - you don't want to scare the birds away! If using binoculars, remind children to stop walking before using them to avoid falls.
3. What types of birds can you see? If you spot one from the sheet, tick it off! If you don't know what it is, note down some features, or take a photo, so that you can try to identify it later.
4. You could add another learning element by creating a survey. Using spare paper, create a table containing the bird names on your spotter sheet and tally any you find.
5. After your walk, have a discussion with your group – what was the most common bird spotted? Are there some you didn't see? Why do you think that is - perhaps not the right time of year, bad weather, or not the right location?



Length:

Location:

Activity Type:

INFORMATION KEY

Click on the species below to find out more about them...

[Fulmar](#)

[Puffin](#)

[Guillemot](#)

[Oystercatcher](#)

[Ringed plover](#)



# Seabird spotter



Shag



Puffin



Fulmar



Gannet



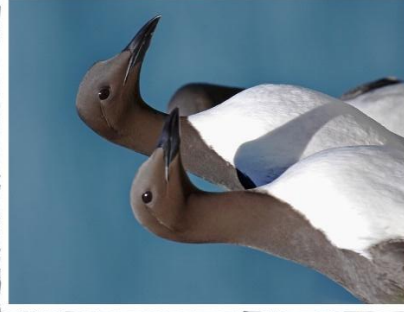
Cormorant



Manx shearwater



Black guillemot



Common guillemot



Razorbill



Storm petrel





# Gull spotter



Black-headed gull  
(winter plumage)



Black-headed gull  
(summer plumage)



Mediterranean gull  
(winter plumage)



Mediterranean gull  
(summer plumage)



Common gull



Herring gull



Lesser black-  
backed gull



Great black-  
backed gull



Kittiwake



Little gull (rare)

Credits: Tom Marshall; Amy Lewis; Pete Richman; Adam Jones; Gillian Day; Nick Upton/2020VISION; Vaughn Matthews; Janet Pockham



# Summer wader detective



Golden plover



Avocet



Curlew



Black-tailed godwit



Lapwing



Common sandpiper



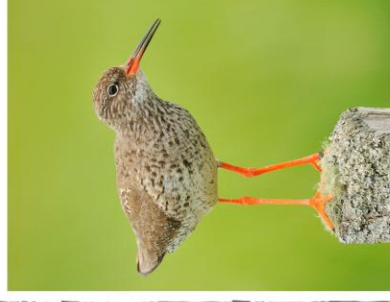
Dunlin



Little ringed plover



Ringed plover



Redshank

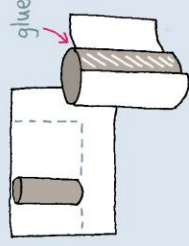
# Make your own binoculars



## You will need

- Two cardboard tubes (you can use toilet roll tubes)
- String
- Paper
- Scissors
- Glue
- Rubber band
- Hole puncher or pen
- Felt tip pens (optional)

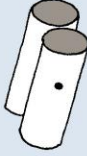
- 1 Cut your paper to size, then cover your tubes with glue and wrap the paper around them.



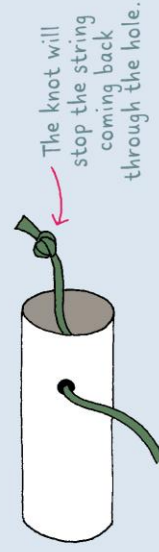
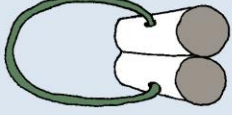
- 2 Using a pen or hole puncher, insert a hole at the side of each tube, about a third of the way down.



- 3 Glue the two tubes together so that the holes are facing the outside.



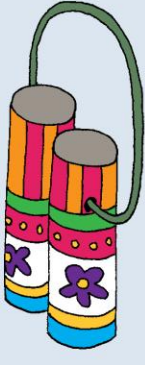
- 4 Insert string into one of the holes from the outside of the tube. Bring it through the tube and tie a chunky knot. Gently pull the string back from the outside. Repeat on the other side.



- 5 Place a rubber band around the tubes to help the glue set. Leave to dry over night.



- 6 Remove the elastic band and then decorate them with pens!



- 7 Go wildlife detecting!

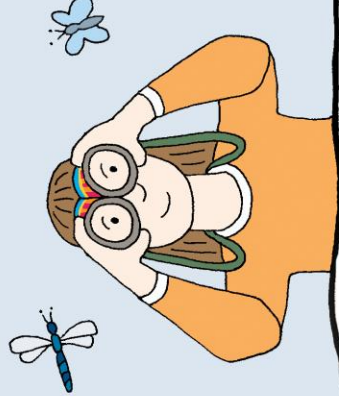


Illustration: Corinne Welch © Copyright Royal Society of Wildlife Trusts 2016



## Activity 4: High or Low (Tide!)

### Educator Notes

This game introduces the topic of tides - the alternating advance and retreat of seawater along a coastline

### Background:

Most shorelines experience two high and two low tides within a twenty-four-hour period, though some areas have just one of each.

Tides affect marine ecosystems by influencing the kinds of plants and animals that thrive in what is known as the **intertidal zone—the area between high and low tide**.

Anything living here must be able to survive changes in moisture, temperature, and salinity and withstand crashing waves – super hardy! For example, barnacles, mussels, and kelps can survive in this environment by anchoring themselves to the rocks.

### JARGON BUSTER! 💡

The **INTERTIDAL ZONE** is an extreme ecosystem where the ocean meets the land between high and low tides. This ecosystem can include different types of habitats (e.g. rocky shores and mudflats) and a multitude of hardy species.

### What you will need:

- An open space (this could be by the coast, a grassy area in your local park, or an indoor space)

### Instructions:

1. Mark the boundaries of an area so everyone knows to stay in the zone during the game.
2. Point to one side of your 'zone' and make this low tide. Point to the other side and make this high tide.
3. Have everyone warm up by moving their body like a wave – can everyone make a wave sound?
4. You can read out from the list below, asking your group if they think they will see these things in high or low tide. If they think it's high tide, run to the high tide side, and vice versa for low tide! You can also come up with your own prompts... or encourage your group to think of some!



- Scuttling shore crab (low tide)
- Floating rubbish (high tide)
- Basking seal (low tide)
- Swimming seal (high tide)
- Footprints (low tide)
- Sailing boat (high tide)
- Birds catching food in the mud (low tide)
- Swimming fish (high tide)



Length:

Location:

Activity Type:

## Activity 5: Sound Scape

### Educator Notes

Let's make a sound map - head outside, sit down and listen to what you can hear!

Length: 

Location: 

Activity Type:  

INFORMATION KEY

### Background:

**Sound maps are a great way of encouraging people to stop and tune in with the place they are in.** They confront a bad habit that most of us have developed - we are so intent on getting somewhere that we miss much of what we are travelling through. Or a place is so familiar we fail to notice the detail that makes it special.

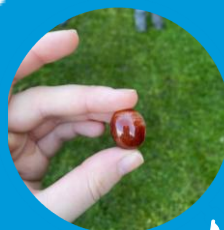


Yet by our coastline (as well as other outdoor spaces) it is the moments of pause that can offer up the richest opportunities to absorb the places we are in.

Sound maps are super easy to make, just like this one! **This is a great activity to get your group slowing down and tuning to their senses.**

### What you will need:

- Plain piece of cardboard (or paper)
- Pen/pencil(s)
- Scissors



**Does your group struggle to sit and listen?** That's ok! You could try this little trick. Use any object you have available that they can hold - we often use gemstones like this one here. This is a 'listening stone'. When you hold it tight it helps you listen closely...

### Instructions:

1. Cut out a piece of plain cardboard – this will be your map. This could be the inside of a cereal box, or just a piece of white card. It can be any shape you want!
2. Find a quiet place to sit – either by the coast or an alternative outdoor space, in a room with the windows open, or if you can't go outside – why not play a video of wildlife noises online.
3. Choose a set amount of time – 2, 5 or 10 minutes is plenty.
4. Now the hard part – to sit and listen! Each person should draw themselves in the middle of their cardboard sound map. As they listen, encourage them to draw, write, or colour the sounds they hear and where they are coming from. Are there birds singing beside you? Are there waves crashing in front of you?
5. Once the time has finished, you can give the group a little extra time to add more detail and drawings to their map. Encourage some discussion – did everyone hear similar things? Anything unexpected? How much was artificial noise vs natural noise?



## Activity 6: Rock Pool Ramble

### Educator Notes

Head to the coast to explore some rockpools and meet some wonderful underwater creatures

#### Background:

Plants and animals that live in rock pools are both fascinating and hardy, surviving a constantly changing environment. You can find a variety of creatures when you look closely. If you catch a shore crab, try looking at its underside and if you see a great orange mass you've caught a female with eggs!



You may also spot **dog whelks** - inter-tidal snails with a shell which is conical with a rounded spire. Their shells vary but they are usually white, grey or cream-coloured. You will likely just spot their shell, as the animal itself is rarely seen.

You may also spot some red squidgy blobs on the rocks, which are known as **beadlet anemones**. These creatures use their tentacles to sting passing fish and shrimp for their next meal!



INFORMATION KEY

Length: 

Location: 

Activity Type:   

#### What you will need:

- Printed activity sheet
- Pen/pencil and spare paper
- Buckets or other containers
- Clear jar - to take a closer look at your finds
- Sturdy footwear

#### Instructions:

1. Wherever you decide to go rock pooling, there are some rules to follow to avoid causing harm to wildlife and to keep yourself safe at the same time. Read our [Rock Pooling: Safety and Top Tips](#) page before you go.
2. Half fill your buckets with seawater. Have more than one to keep bad tempered animals apart and never put fish in a bucket with anemones or jellyfish as they will sting the fish!
3. Carefully lift sea creatures into your containers – watch out for spines and pincers! Use your worksheet to try and ID some of the creatures you find, ticking off the ones you spot.
4. You can use spare blank paper to sketch your finds or take some notes- you could even keep a tally of what you find. If you find any creatures and you aren't sure what they are, you can take a picture and try to identify it online afterwards.
5. Make sure to return the animals to where you found them when you've finished and wash your hands afterwards!





# Rockpool detective



Starfish



Edible crab



Beadlet anemone



Clingfish



Shore crab



Prawn



Butterfish



Hermit crab



Snakehead anemone



Blenny



## Activity 7: Sink or Swim

### Educator Notes

Try this fun experiment to observe some differences between saltwater and freshwater

#### Background:

The water in seas (saltwater) is different to our lochs, rivers and ponds (freshwater) – and the answer is because of salt!

Essentially, water gradually makes its way to the sea from rivers, but along the way salts dissolve in this water from the earth. So, it is salty when it reaches the ocean. Water also then **evaporates** out of the ocean, **leaving the salts behind**. This freshwater then falls over the land (e.g. rain) and the cycle starts again.

Many animals that have **adapted to saltwater habitats** could not survive in freshwater (and vice versa). **Seabirds** can drink saltwater (which is very unpleasant for us humans!) and they excrete the excess salt through salt glands above their eyes. Many **fish** species eliminate salt through their gills, and **turtles** cry salty tears!

#### What you will need:

- Salt
- Two clear glasses
- Two eggs (alternatives include soap, pegs, grapes and bouncy balls)
- Water

#### Instructions:

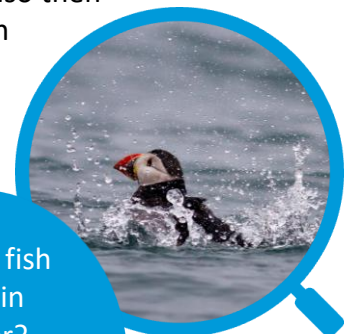
1. Start by introducing the topic to your group - have you ever splashed around in the sea? You might have noticed the water is salty! Do you think it's easier to float in freshwater or saltwater?
2. Fill two glasses with water – about  $\frac{3}{4}$  full. Add a cup of salt to one glass and stir.
3. Ask your group if they think an egg will sink or swim in freshwater? After some guesses, add the first egg to the cup with no salt (freshwater).
4. What about saltwater? After some guesses, add the second egg to your saltwater glass.
5. Did you notice a difference? With enough salt, your egg will float in the saltwater cup (you can add some more salt if needed).
6. Here's how it works: very heavy things will sink in both, and very light things will float in both. However, saltwater is heavier than freshwater. So, if you add something that is in between that weight (i.e. lighter than saltwater but heavier than freshwater) it will float!
7. Make sure to wash hands after handling eggs. Your group can check if other things sink or swim too. Some suggestions include soap, pegs, grapes and bouncy balls.

#### INFORMATION KEY

Length: 

Location: 

Activity Type:  



Why do fish swim in saltwater? ... because pepper makes them sneeze!

You could use the Dead Sea as an example here!

## Section 2: Exploring Coastal Creatures

This section is all about helping children learn more about the breadth of life we find by our Scottish coastlines.

Even if you aren't by the sea there are plenty of activities you can do!



In this section you will find **7** activities:

- 8. [Bird Beak Lab](#)
- 9. [Ocean Giants](#)
- 10. [Bottle Basking Sharks](#)
- 11. [Bird Nest Architects](#)
- 12. [Coastal Creature Masks](#)
- 13. [Egg Box Crabs](#)
- 14. [Web of Life](#)

Each activity can be used independently, or combined to create a longer session, depending on your children, time, space, and available resources.

To find out the curriculum links for each activity, check out the [Curriculum Links](#) page at the end of the pack.

## Activity 8: Bird Beak Lab

### Educator Notes

Try this practical activity to learn about different bird beak adaptations

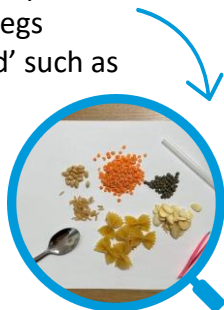
#### Background:

Plants and animals have evolved together through complex relationships. For example, species develop special features to help them survive in certain places and eat certain food. This is called an **adaptation**.

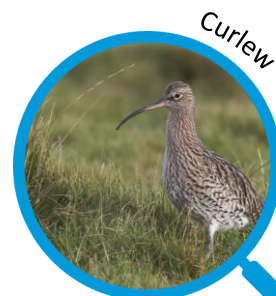
On the beach, many seabirds have adapted to be excellent at diving into the sea to catch fish and wader birds have long beaks to help them dig in the sand. Similarly, their food might evolve in ways to escape being eaten, such as using camouflage to blend into their surroundings!

#### What you will need:

- 'Bird beaks' – items such as spoons, straws, tweezers, clothes pegs
- Different sizes of 'bird food' such as raisins, rice, pasta
- Timer
- Printed activity sheet and scissors (optional)



Short beak



Long beak

#### JARGON BUSTER! 💡

**WADER BIRDS**, or shorebirds, are the species we find wading along shorelines and mudflats looking for food (such as small aquatic insects and crustaceans). They are typically long-legged and long-billed to help them dig!

#### Instructions:

You can adapt this activity in different ways (also depending on group size), making it more relaxed and experimental, or more of an active game...

1. Collect the different types of 'bird food' you want to use. It's good to have a range of shapes and sizes that can represent different types of food, such as fish or insects. Using the different 'bird beaks' you can experiment being different birds.
2. First, put one type of food in the middle of the group, whilst everyone has different types of beaks. Set 30 seconds on a timer and see how much food each beak can collect in that time. Swap the food in the middle and repeat.
3. Prompt the children to imagine what ways the fish and insects could change to make it harder for the birds to catch them! As you go through the different foods, are there some 'beaks' that are better than others for picking up certain foods? Which ones were the best and which ones struggled? Isn't it clever that birds' beaks are suited to their favourite foods!
4. Afterwards, you could complete the bird beak lab activity sheet.



Length:

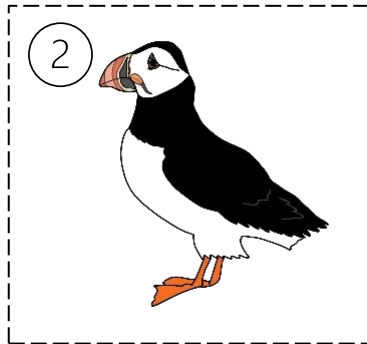
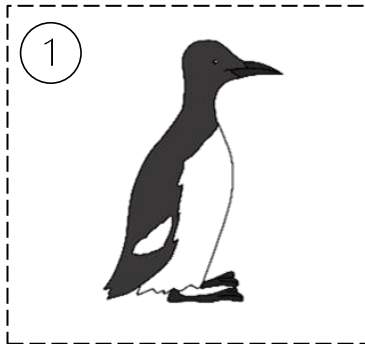
Location:

Activity Type:

# Bird Beak Lab – Activity sheet

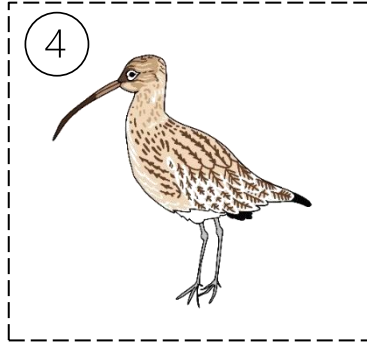
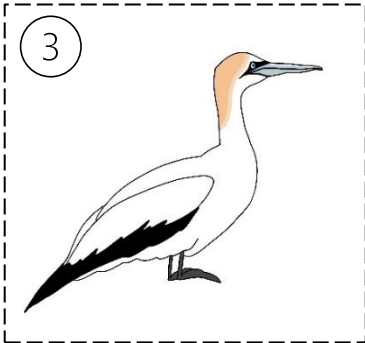
## Instructions!

1. Carefully cut out each bird and bird name separately.
2. Match each bird to its correct species name.
3. Now group your birds into those with short beaks and those with long beaks.



**Short beaks** - useful for catching fish and small creatures like insects and plankton

**Long beaks** - help pin down fish and dig in the sand



Little  
Egret

Guillemot

Little Auk

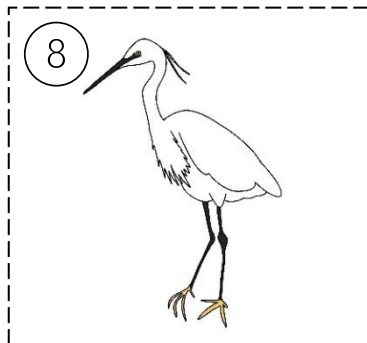
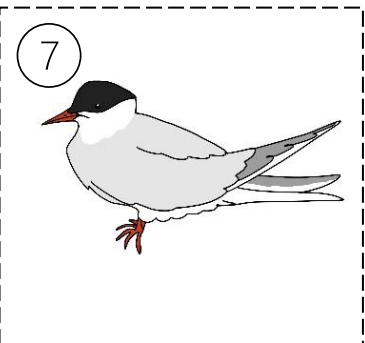
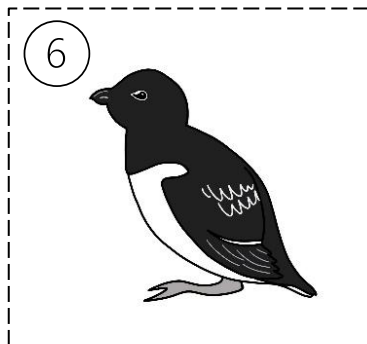
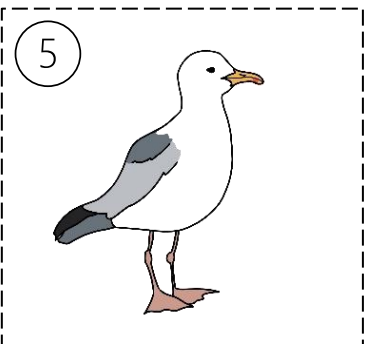
Curlew

Puffin

Herring  
Gull

Arctic  
Tern

Gannet



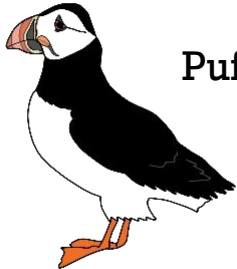


# Bird Beak Lab – Answer sheet

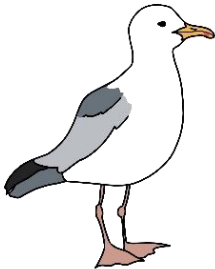
## Short beaks



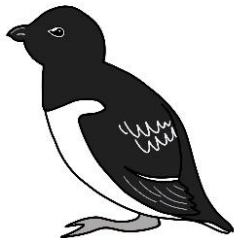
Guillemot



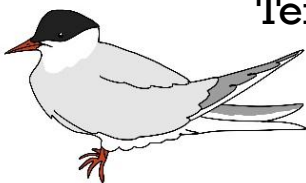
Puffin



Herring  
Gull

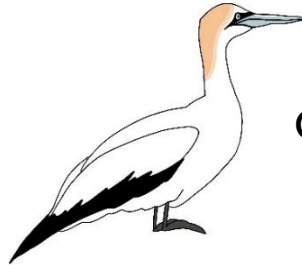


Little Auk

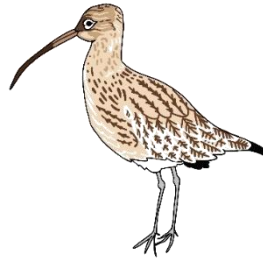


Arctic  
Tern

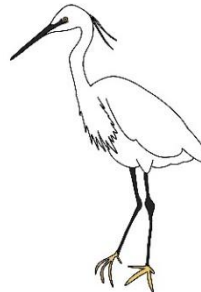
## Long beaks



Gannet



Curlew



Little  
Egret

## Activity 9: Ocean Giants

### Educator Notes

Try this game with your group to find out how big some of our Scottish ocean giants really are!

#### Background:

Scotland has some of the **best cetacean watching opportunities**. Cetaceans (marine mammals) include our whales, dolphins and porpoises, and we have **over 20 species** of them in Scottish waters.

Marine mammals are the ocean's giants, with the largest, the blue whale, reaching over 33 metres in length! We can even spot the second largest mammal, **the fin whale**, from Scotland (which reaches around 27 metres).



Length: 

Location: 

Activity

Type:   

INFORMATION KEY

#### What you will need:

- An open space (this could be by the coast, a grassy area in your local park, or an indoor space)
- Measuring tape
- Printed Ocean Giants cards (digital or printed copy)
- Printed dolphin colouring in sheet and pens (optional)

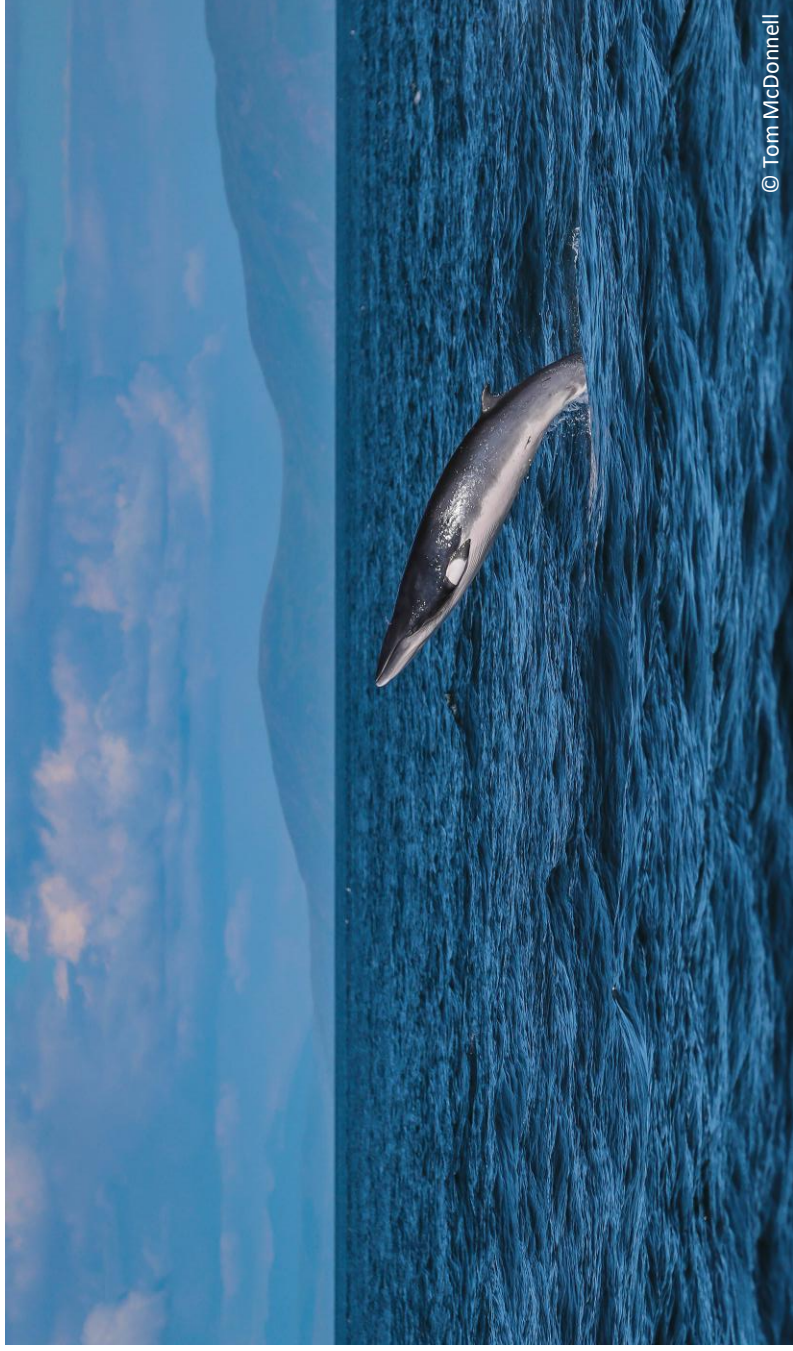
#### Instructions:

1. Depending on your group size, you can split young people into pairs, small groups or do it all together.
2. Introduce the first ocean giant card to your group. If you show the group the image on the card, make sure to cover the length displayed underneath (no cheating!).
3. Ask the group to guess how big the marine mammal is (in metres) – you can use your measuring tape here to show the group how long one metre is for reference.
4. In pairs or as a group, have one person stand at one end whilst the other(s) walks to create the length they think the marine mammal is between them. This can be done by a rough guess here.
5. Now reveal the average size of the mammal to the group (this is displayed on the card). Using a measuring tape, mark out the length of the species. Was anyone close? Is anyone surprised? There is the option to make it game, allocating points to the group that came closest. You can repeat this for all five species cards.
6. You can print off the UK Dolphins activity sheet for your group to colour in if you have time during your session.

Learn more about dolphins on our YouTube channel by clicking the icon below



# Minke Whale



© Tom McDonnell

## **Length: 7 metres**

- They are the smallest whale in Scottish seas
- They are nicknamed “Stinky Minkes” because of their smelly breath
- Minke whale vocalisations can be as loud as 150 decibels - that’s the same as a jet plane taking off!



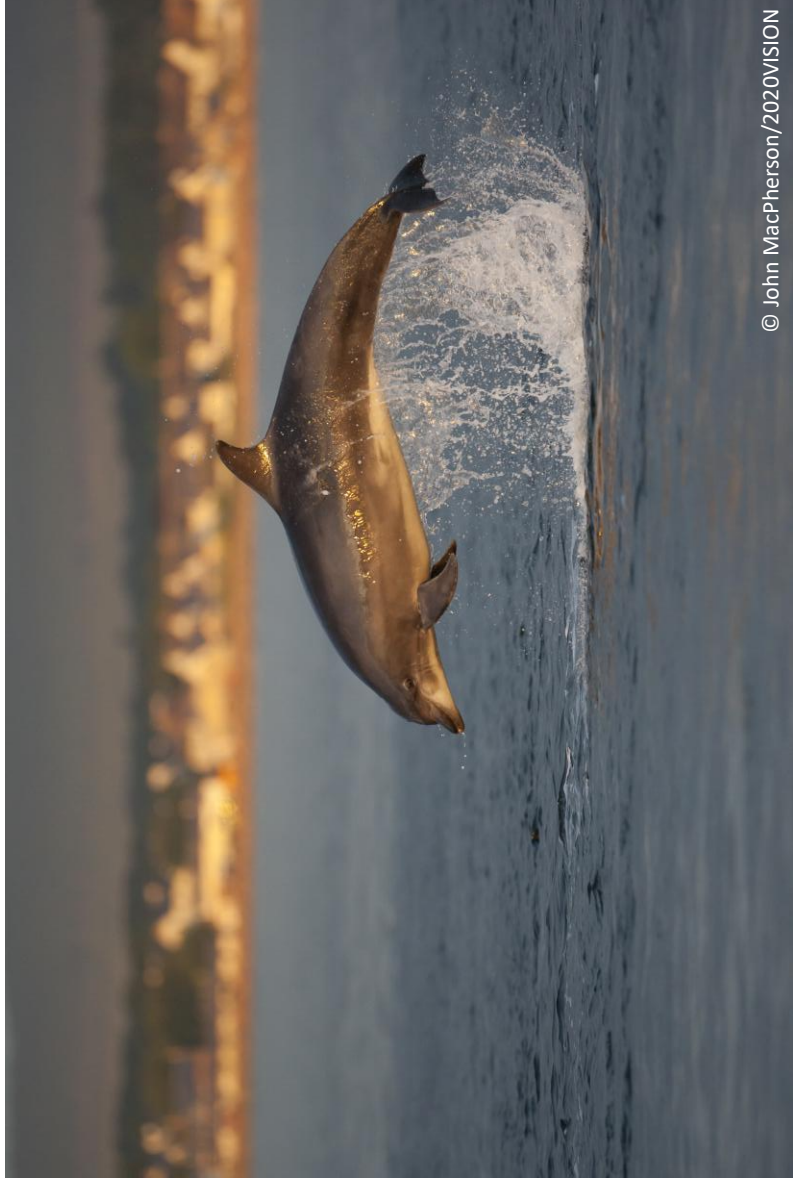
# Orca (Killer Whale)



## Length: 9.8 metres

- Orcas, or Killer Whales, are actually dolphins! They got this name as they are known to work together to kill whales much larger than themselves
- The Gaelic word for Orca, Mada-chuain, translates to 'Ocean Wolf'
- The 'west coast community' is our resident group of orcas that arrives in North Scotland in the summer to feast on fish

# Bottlenose Dolphin



## Length: 4 metres

- They often catch their prey by striking the fish with their tails to stun them
- They can swim at speeds of up to 30km an hour and dive to depths of 250m
- Individual bottlenose dolphins can be recognised from the unique pattern of nicks and notches on their dorsal fin - a bit like a fingerprint!

# Harbour Porpoise



© Tom Hibbert

## Length: 2 metres

- They are a little shy, but can be spotted close to shore in shallow waters
- They are the smallest species of cetacean found in Scottish waters
- They are eating machines! Their small size means they have to feed constantly to keep their body temperature up in our chilly seas



# Humpback Whale



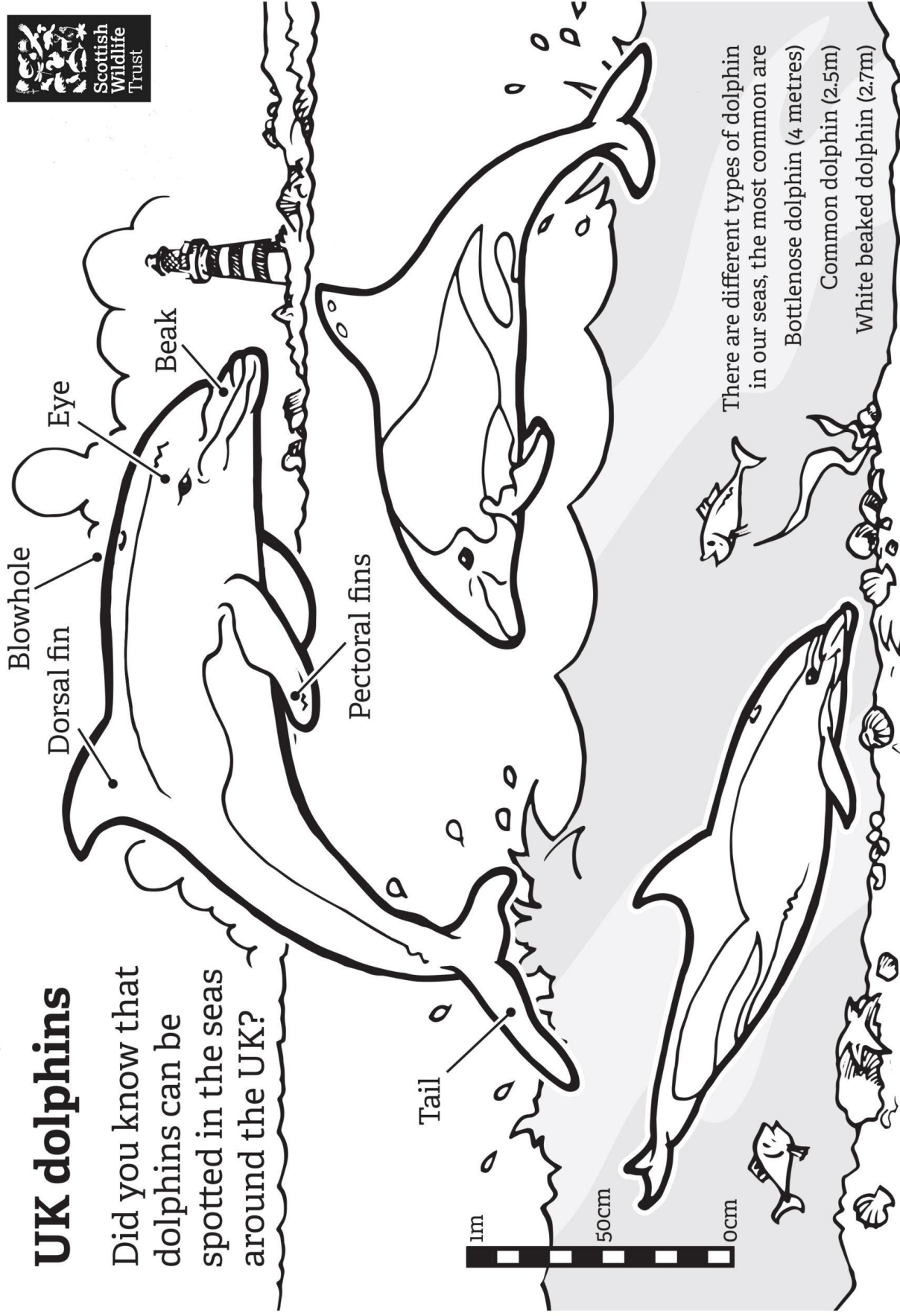
© Richard Shucksmith/scotlandbigpicture.com

## Length: 18 metres

- They are found throughout the world's oceans and perform some of the longest migrations of any mammals. In Scotland they feast on fish and krill and then travel to tropical seas to give birth
- They can live for up to 80 to 90 years!
- They are well known for their acrobatic behaviour - so don't be surprised to see them breach clear of the water!

# UK dolphins

Did you know that dolphins can be spotted in the seas around the UK?




## Activity 10: Bottle Basking Sharks

### Educator Notes

Here is a craft you can do with an old plastic bottle to make your own basking shark

Length: 

Location: 

Activity Type: 

INFORMATION KEY

### Background:

**Basking sharks** are the **second largest fish in the world** and the largest fish we have in Scottish waters, reaching up to **12m**. But don't worry, they are a gentle giant! They feed by filtering the water for really small animals called **zooplankton** – which is why they swim around with their mouths wide open!

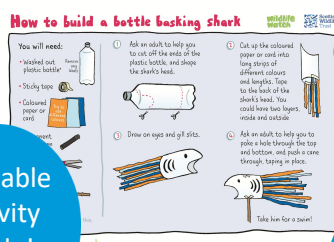
### JARGON BUSTER!

**PLANKTON** is the name given to a collection of tiny organisms that float around in aquatic environments. Plankton that is made up of tiny animals or animal-like organisms is called **ZOOPLANKTON** – what basking sharks like!

### What you will need:

- An empty plastic bottle
- Pieces of coloured paper, card, tissue paper or old magazine
- A permanent marker pen
- Tape
- A garden cane (or stick)
- Printed activity guide (optional)

Printable activity guide!



Find out more about basking sharks on our website [here](#)



### Instructions:



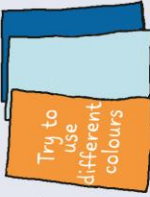



1. Make sure any labels on bottles have been removed and they are rinsed out.
2. You can use pictures in the activity guide (next page) for reference. Cut off the ends of the plastic bottle and shape one end for the basking shark's head. You might need to help your group with this as plastic can be tricky to cut and it can leave sharp edges.
3. Using the permanent pen – draw on the eyes and gill slits (sharks have five gill slits on each side). This could be an opportunity to chat to your group about gills – as sharks swim, water is passed over their gills and oxygen is absorbed and transported around the body. They have a nose, but it's only used to smell!
4. Cut the coloured paper/card into strips. Stick them to the end of the bottle shark's body.
5. Make two holes behind the bottle basking shark's eye – one at the top and one at the bottom of the bottle. You may need to help children with this part.
6. Push the garden cane or stick through these holes and use tape to hold it in place. Everyone's bottle basking sharks are now ready to go for a swim! They can use it as a puppet and replicate the shark swimming with its mouth wide open.





# How to build a bottle basking shark

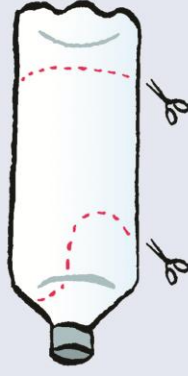
## You will need:

- Washed out plastic bottle\* 
- Sticky tape 
- Coloured paper or card 
- Permanent marker pen 
- Scissors 
- Garden cane 
- A helpful adult

\*Use an old plastic bottle for this, and always recycle after use.

1

Ask an adult to help you to cut off the ends of the plastic bottle, and shape the shark's head.



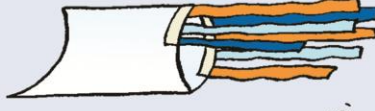
3

Draw on eyes and gill slits.



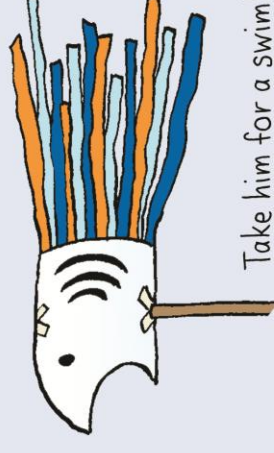
2

Cut up the coloured paper or card into long strips of different colours and lengths. Tape to the back of the shark's head. You could have two layers, inside and outside



4

Ask an adult to help you to poke a hole through the top and bottom, and push a cane through, taping in place.



Take him for a swim!

## Activity 11: Bird Nest Architects

### Educator Notes

Head outside, gather natural materials and make your own bird nests!

#### Background:

Birds **build safe, warm places called nests** to look after their eggs and chicks. Birds make their nests from all sorts of natural materials, and different species tend to use different things depending on what's available in their habitat.

By the coast, there are a **wide variety of nest-makers**. For example, puffins mostly nest in burrows and crevices, whereas gannets' nest right on the cliff-side, but they make hardly any nest at all! **Seabirds often nest in places where land predators can't reach them**, i.e. cliffs.

**Many wader birds are ground nesting**, which can leave them more vulnerable to predation and disturbance. During the summer, some waders **lay their eggs on the sand**, which is why you may see signs saying no dogs on the beach from May to September – this is to try and help protect the nests. So, when visiting the beach during these months, remember to be mindful of these nesting birds – they're eggs can be well camouflaged!

#### What you will need:

- Container to collect things in (e.g., basket, bucket)
- Natural materials to build a nest (e.g., rocks, sticks, seaweed)
- Printed Bird Nest Architects activity sheet (optional)

#### Instructions:

Nests can be built indoors or outdoors, depending on the size and materials being used. In some ways, it's best to let the young people explore the best way to construct a nest by trial and error, but here are few instructions to guide the way:

1. Start with a group discussion... Have you ever seen a bird's nest? Look around outside – can you see any in trees or on buildings? What are they made of?
2. Start by building a framework for your nest with larger sticks or rocks, interlocking them to form the basic structure. Use smaller sticks or rocks to keep adding to the structure, filling in any large holes.
3. Once the outer structure of the nest is looking sturdy, find softer materials such as feathers and seaweed to line the nest.
4. Show your finished nests to each other. Would eggs withstand coastal wind? Are they warm enough? Are they camouflaged?
5. Afterwards, why not have your group try the Bird Nest Architects activity sheet.

Length: 

Location: 

Activity Type:   

INFORMATION KEY



To give this a scientific twist for older children, you can assign them a species of bird, so they must consider the materials and what size of nest they need to build.

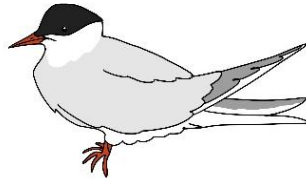


## Bird Nest Architects – Activity sheet

Match the **bird to its nesting habitat** and then match the **bird to what it uses to build its nest!**

Can you have a think about how well protected some of these nests are? What issues might they face?

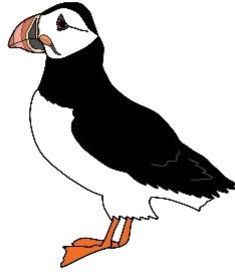
Rocky cliffs



Arctic Tern

Twigs

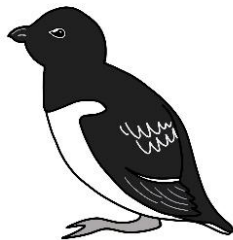
Tree



Puffin

Pebbles

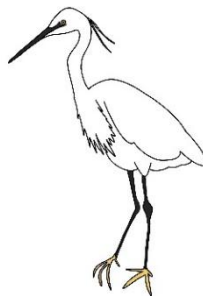
Underground  
burrow



Little Auk

Sand

Beach



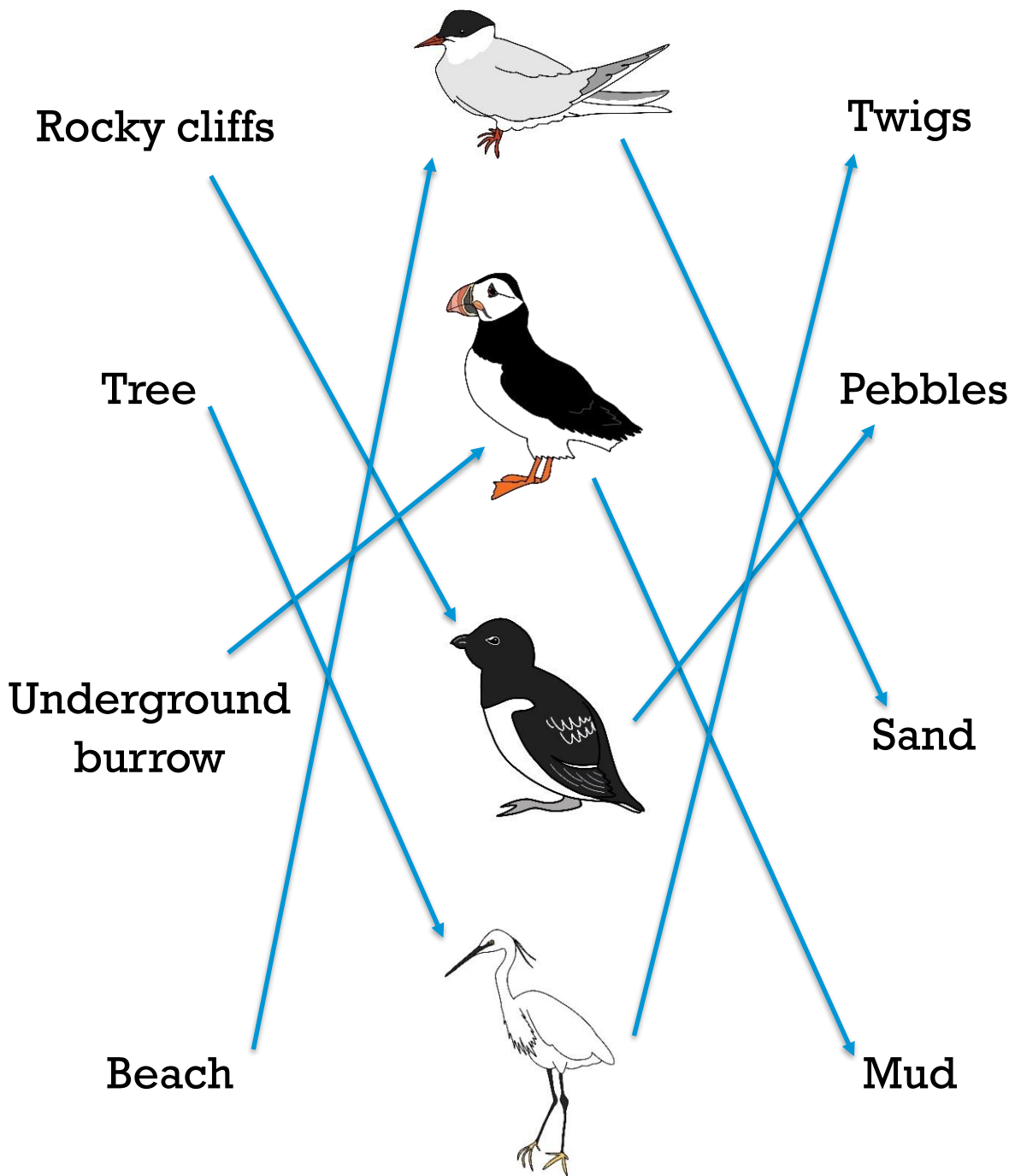
Little Egret

Mud



## Bird Nest Architects – Answer sheet

- Puffin – underground burrow – mud
- Arctic tern – beaches – sand
- Little auk – rocky cliffs – pebbles
- Little egret – trees – twigs



## Activity 12: Coastal Creature Masks

### Educator Notes

Make an animal mask using our templates and become your favourite coastal creature

Length: 

Location: 

Activity Type:  

INFORMATION KEY

### Background:

Scotland's chilly waters don't stop wildlife from making it their home! By the coast we can spot an array of different species...

**Have a go at making an animal mask using our mask templates.** Become a **crab**, who we find scuttling along the beach, an **otter**, who we find fishing for food by the coast, or a **seal**, who we often find sunbathing on tidal flats or rocks.

Click on the animals to find out more about them on our website!



### What you will need:

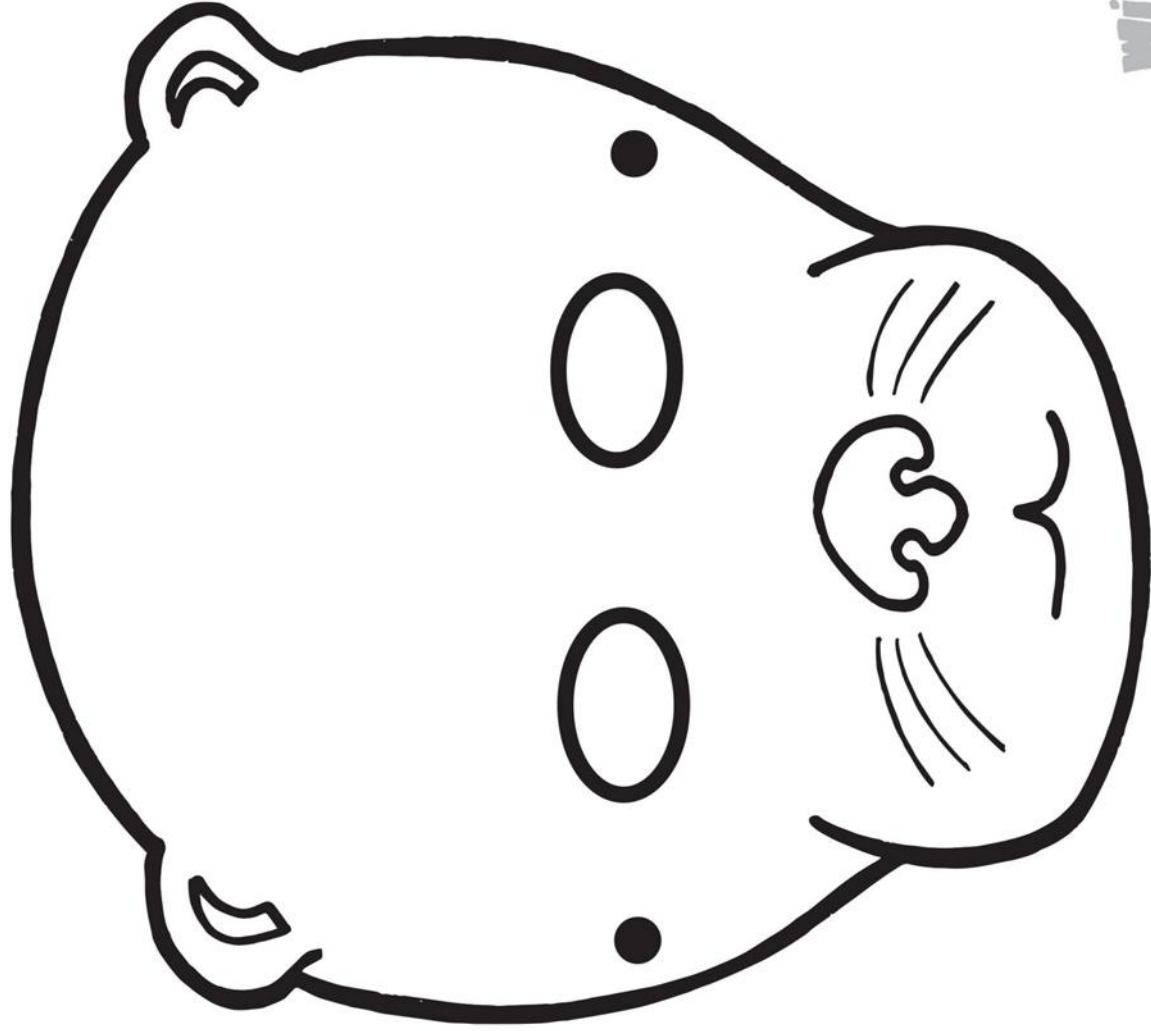
- Printed activity sheet (or paper/card)
- Pens/pencils
- String (or elastic)
- Scissors
- Hole punch (optional)

### Instructions:

1. Print out some of the masks for your group to choose from. If you don't have a printer – you could get your group to copy the designs onto paper or card and then follow the rest of the instructions to make their mask.
2. Time to let the creativity flow and decorate the masks! Once done, carefully cut around the outline and the eyes – it can be a little fiddly so you may need to help younger children.
3. Carefully punch out the two holes at the sides of the mask. A hole punch is helpful for this, but you could use a sharp pencil or the scissors.
4. Measure a piece of string around your head so that you get the right size. Tie the string between the two holes.
5. You can use the masks to create some wild performances. Can they move around like their animal and make some of its calls/noises? Individually, or in pairs/groups, they could go away and research their animal and then present their findings.



# Otter

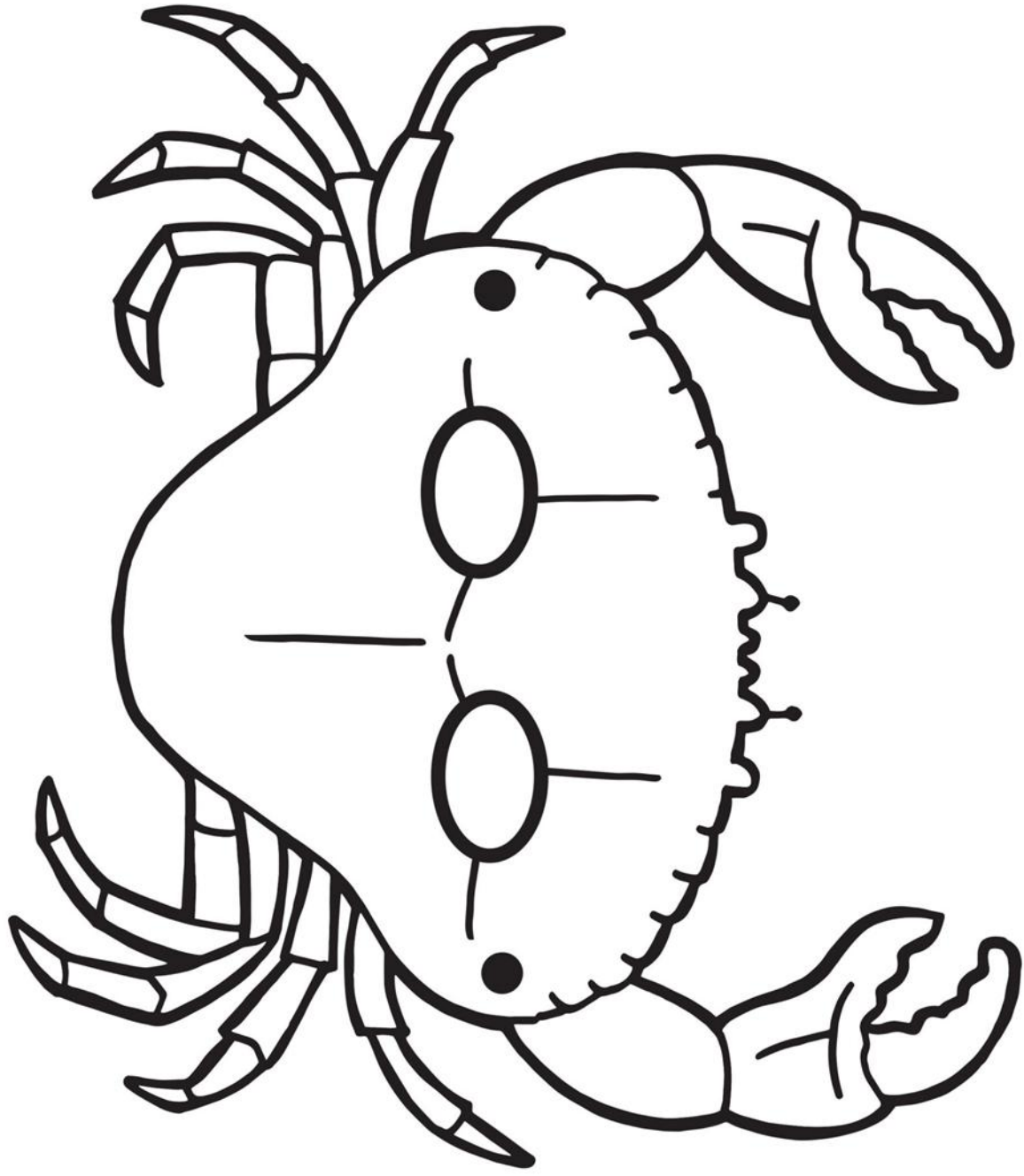


**wildlife  
watch**



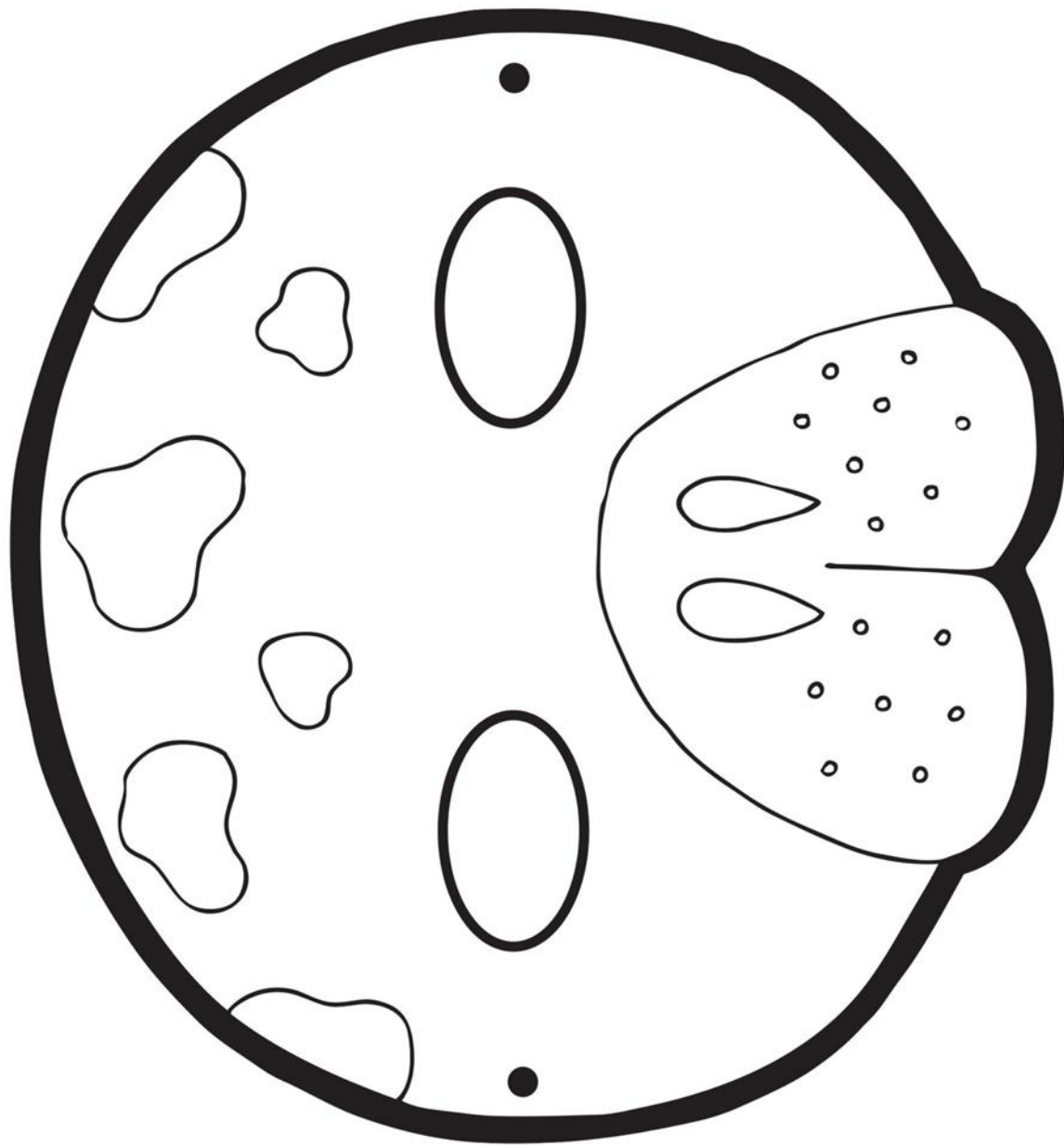


Crab



wildlife  
watch





## Activity 13: Egg Box Crabs

### Educator Notes



Make an eggbox crab in this simple, indoor craft

Length:



Location:



Activity

Type:

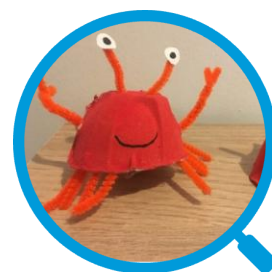


INFORMATION KEY

### Background:

Crabs are characterful **crustaceans** – a group of animals that include shrimps and lobsters. They **live by the shore**, often spotted in rock pools, and are usually well camouflaged. They are experts at hiding under rocks or in tiny spaces!

We can find around **65 species of them in the UK!** Some that you may spot in rock pools are hermit crabs, shore crabs, and velvet swimming crabs.



### What you will need:

- A clean, empty egg box
- Paints – acrylic works well
- Paintbrushes
- Water
- Scissors
- Pipe cleaners
- A black pen
- A pencil
- White card
- Tape (double sided is useful)
- Printed activity guide (optional)

#### Make an egg carton crab



Printable  
activity  
guide

### Instructions:

Below we have outlined how to make a crab, but you can let your groups' imagination run wild with what they create. On the next page you will find an activity guide which includes photo instructions.

1. Cut out a section of the egg box, paint it and leave to dry. Cut out eight short pieces of orange pipe cleaner and three long pieces.
2. Using the pencil, carefully make two holes in the top of the egg box section. Carefully thread one of the longer pipe cleaner pieces through these holes – these are the eye stalks.
3. Cut out two small paper circles, add a black dot for the pupils and stick these on to the pipe cleaners – these are the eyes. Twist the remaining two long pipe cleaner pieces together.
4. Using the pencil, carefully make two holes – one on each side of the egg box section. Thread the twisted pipe cleaners through these two holes – these are the claws.
5. Stick the shorter pipe cleaner pieces to tape – sticky sided is helpful but not essential. Then stick them to the underside of the egg box section, so that they poke out of the sides – these are the legs.
6. Add a smile using the black pen – your crab is ready to scuttle about!  
Remember to recycle the rest of the egg boxes.





# Make an egg carton crab

## You will need

- One section of egg box (already cut out)
- Four pipe cleaners (orange is a great crab colour!)
- Two googly eyes
- Paints and brushes
- Double sided sticky tape
- Scissors
- Pencil
- Felt pen

You can make other creatures too... think about centipedes and ladybirds.



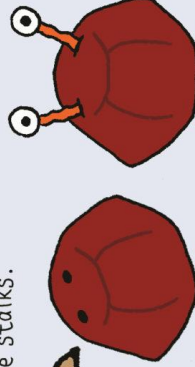
1 Paint the egg box section inside and out to make the crab's body. Leave to dry for a few minutes.



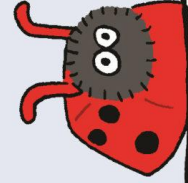
2 Cut eight pipe cleaner legs (all the same length) plus three longer pieces.



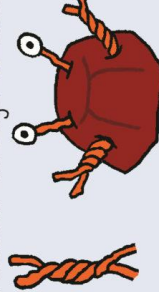
3 Make two holes for eye stalks with a pencil, and poke one long pipe cleaner through to make two eye stalks. Stick the googly eyes onto the tips of the eye stalks.



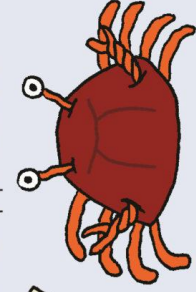
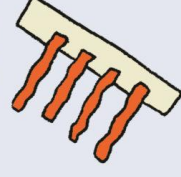
Use pom poms for heads!



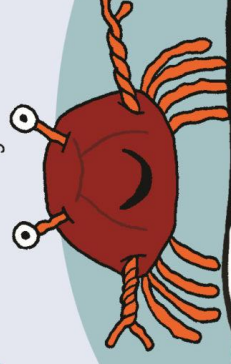
4 Twist the other two long pipe cleaners together, make two holes in the front of the body and poke the twisted pipe cleaner through to make claws.



5 Stick four leg pipe cleaners onto double sided tape and then stick them under the body to poke out. Repeat on the other side with the other four pipe cleaners.



6 Draw on a smiley mouth!



## Activity 14: Web of Life

### Educator Notes

Create your own food web to help you think about think about what animal and plant species are connected

#### Background:

**In nature, everything is connected!** Plants and animals are connected in lots of different ways, and every species in the food web is important.

The bottom of the marine food chain typically starts with energy and tiny living things called **phytoplankton**. Found near the water's surface, they take in the sun's light and turn it into energy through a process called **photosynthesis**.

The next level is made up of plant-eaters, followed by small carnivores (such as small fish), followed by top predators (such as sharks, tuna and dolphins).

#### JARGON BUSTER! 💡

**PHOTOSYNTHESIS** is the process in which plants use sunlight to make their own food. Plants have something called chlorophyll (that makes them green!) that absorbs sunlight and produces energy, releasing oxygen. Photosynthesis is very important because almost all living things depend on plants for food!

#### What you will need:

- This game requires a minimum of ten young people.
- An open space (this could be by the coast, a grassy area in your local park, or an indoor space)
- Ball of string/twine
- Printable instruction sheet (can be digital or paper copy)

#### Instructions:

See next page.

Length: 

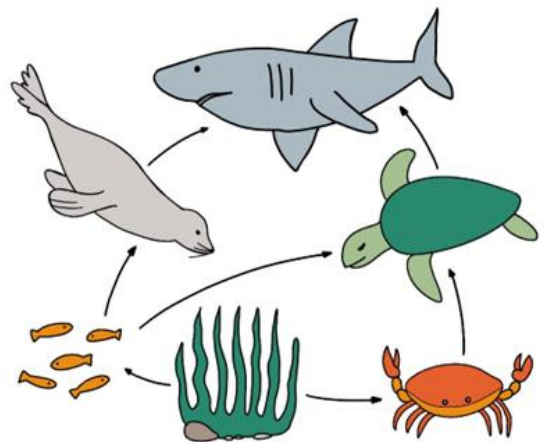
Location: 

Activity Type:   

INFORMATION KEY

#### JARGON BUSTER! 💡

**PLANKTON** is the name given to a collection of tiny organisms that float around in aquatic environments. Plankton that is made up of plants is called **PHYTOPLANKTON**. Plankton that is made up of tiny animals is called **ZOOPLANKTON**.



An example of a connected food web!



# Web of Life Instruction Sheet

## Game Instructions:

First, ask the children these questions to help get them thinking about where food comes from:

- Where do we get our energy from? Answer: the plants and animals we eat
- Where do animals get their energy from? Answer: the plants and animals they eat
- Where do plants get their energy from? Answer: the sun

Species	What they need/eat
Plankton	Sunlight
Algae (seaweed)	Sunlight
Crab	Algae
Krill (small shrimps)	Plankton, algae
Small fish	Plankton
Squid	Crab, small fish, krill
Seabird	Small fish, crab,
Seal	Small fish, squid, seabirds
Dolphin	Small fish, squid, plankton, krill
Orca (killer whale)	Seals, squid, small fish, seabirds, and other dolphin

1. Have your group create a circle shape. Give each young person a marine species from the list. All 10 should be included. If you have more than 10 young people, have extra of some species.
2. They can warm up by acting like that plant or animal – what does it look like? How does it move? Does it make any noise?
3. It's time to start thinking about who relies on who! Pass the ball of twine to the orca. The orca should keep hold of the end of the string and then pass the ball of string to anyone it eats, i.e. anyone who is a seal, squid, small fish or a seabird! Does anything eat the orca?
4. Whoever now has the ball of string should think about what they eat, and what eats them! Holding onto their end, they should pass the ball of string to those species.
5. This repeats until everybody is connected by the string or until you have gone through every species. It can continue until species have many connections and hands full of string!
6. Once the food web is complete, ask your group what they think would happen if you remove a species? All life on earth relies on the sun! If there was no sunlight, we would have no plankton and algae. Anyone who is plankton or algae, ask them to release/drop the string they are holding. Next, those who eat plankton and algae should then be removed, followed by those who eat those now removed animals. What is happening to the food web? It's collapsing because everything is connected!



## Section 3: Key Threats and How To Help

This section is all about helping children understand some of the key threats our coasts are facing and empowering them to take their own action to help protect them.

Even if you aren't by the sea there are plenty of activities you can do!



In this section you will find 6 activities:

- 15. [Coastal Clean Up](#)
- 16. [Save Our Seabirds Poster](#)
- 17. [Fish Forage](#)
- 18. [Turbine Tig](#)
- 19. [Plastic in the Kitchen](#)
- 20. [Citizen Scientists](#)

Each activity can be used independently, or combined to create a longer session, depending on your children, time, space, and available resources.

To find out the curriculum links for each activity, check out the [Curriculum Links](#) page at the end of the pack.

## Activity 15: Coastal Clean Up

### Educator Notes

Head to the beach with a bucket and some gloves to pick up any litter you find

### Background:

**Litter in our seas can cause harm to all forms of animals**, from tiny plankton to giant whales. Litter in the ocean can take a long time to degrade, varying from 1–1000 years! **Plastic litter** is a serious environmental issue as it continues to break down into **microplastics** (pieces less than 5mm) which have been found everywhere from beaches to the deepest parts of the ocean.

Picking up litter and disposing of it properly can help create a clean coastal environment. Litter surveys also help gather data on the types of litter polluting our environment which helps inform campaigns! This sort of information recording is called **citizen science**.

**If you can't get to the beach, don't worry.** Litter picking by your local park or river still makes a difference for our seas – **80% of the litter on our beaches has come from inland!**

### What you will need:

- Strong binbags (or buckets)
- Gloves
- Suitable footwear (sturdy boots are great for rocky beaches)
- Litter picker (optional – you can ask your local council if you can borrow some)

### Instructions:

1. You could start with a little interactive quiz about litter, asking your group how long they think these items take to break down in the environment. Remember, plastic never fully goes away – it just breaks into little pieces.

Fishing line  
600 years

Plastic bottle  
450 years

Tyres  
Up to 2,000  
years

Crisp packet  
100 years

2. Avoid picking up any broken glass or sharp objects, anything very large or heavy, and anything that appears dangerous. Try not to overfill bags to avoid splitting.
3. Discuss the findings with the group... Did anyone find anything weird or interesting? What can we do to stop litter ending up in the environment?
4. Afterwards, you could separate everything out into different piles and record the rubbish you found. Surveys are very helpful for researchers! You can download a litter survey form from the Marine Conservation Society's website [here](#) to get involved.

Length: 

Location: 

Activity  
Type:   

INFORMATION KEY

See our ***Citizen Scientists*** activity to find out how to get involved in some beach surveys!

## Activity 16: Save Our Seabirds Poster

### Educator Notes

Colour and share this poster to spread the word about saving our seabirds!

#### Background:

Scotland is internationally important for seabirds, with more than **5 million breeding here each year**. Sadly, many are in **decline due to human activity**, and so it is important that we do what we can to protect them! Some of the threats that seabirds are facing include:

- **Climate change** - warming seas means some fish are moving northwards and many birds can't catch enough for their chicks. Storms are also making it harder for them to breed.
- **Pollution** – Birds can get caught in litter (especially from fishing) and mistake litter for food.
- **Disease** – Seabirds can catch viruses just like us. Unfortunately, bird flu has been causing a large amount of bird deaths around Scotland and the wider UK.
- **Overfishing** – humans and seabirds have the same taste in fish and sometimes we take too many out of the sea. In Scotland we have Marine Protected Areas where this can be restricted.

As well as doing practical things to help wildlife, spreading the word about environmental issues is important too!

#### What you will need:

- Printed activity sheet
- Pens/pencils



#### Instructions:

1. Start with a discussion... what threats do we think our seabirds could face? How might this affect them? How could we help?
2. Colour in the poster, which aims to help spread the word about what we can do to save our seabirds.
3. As you are colouring in, why not discuss with the group the different actions highlighted on the poster. Are there any you could do as a group/class?
4. Once finished, decide who you would like to share the poster with. Should it be displayed somewhere, or given to someone for them to learn from or display?
5. Who could your group/class talk to about actions to help seabirds? Think about audiences, e.g., friends, family, school, local community groups and businesses.
6. Why not take a video or picture of your posters, or you taking action, and share it with us!

Length: 

Location: 

Activity Type:   

INFORMATION KEY

#### JARGON BUSTER!

**MARINE PROTECTED AREA'S (MPAs)** are places at sea where some damaging human activities (such as certain fishing methods, oil, renewable energy) are restricted by the government to protect marine habitats. In Scotland around 37% of our seas are protected by MPAs!

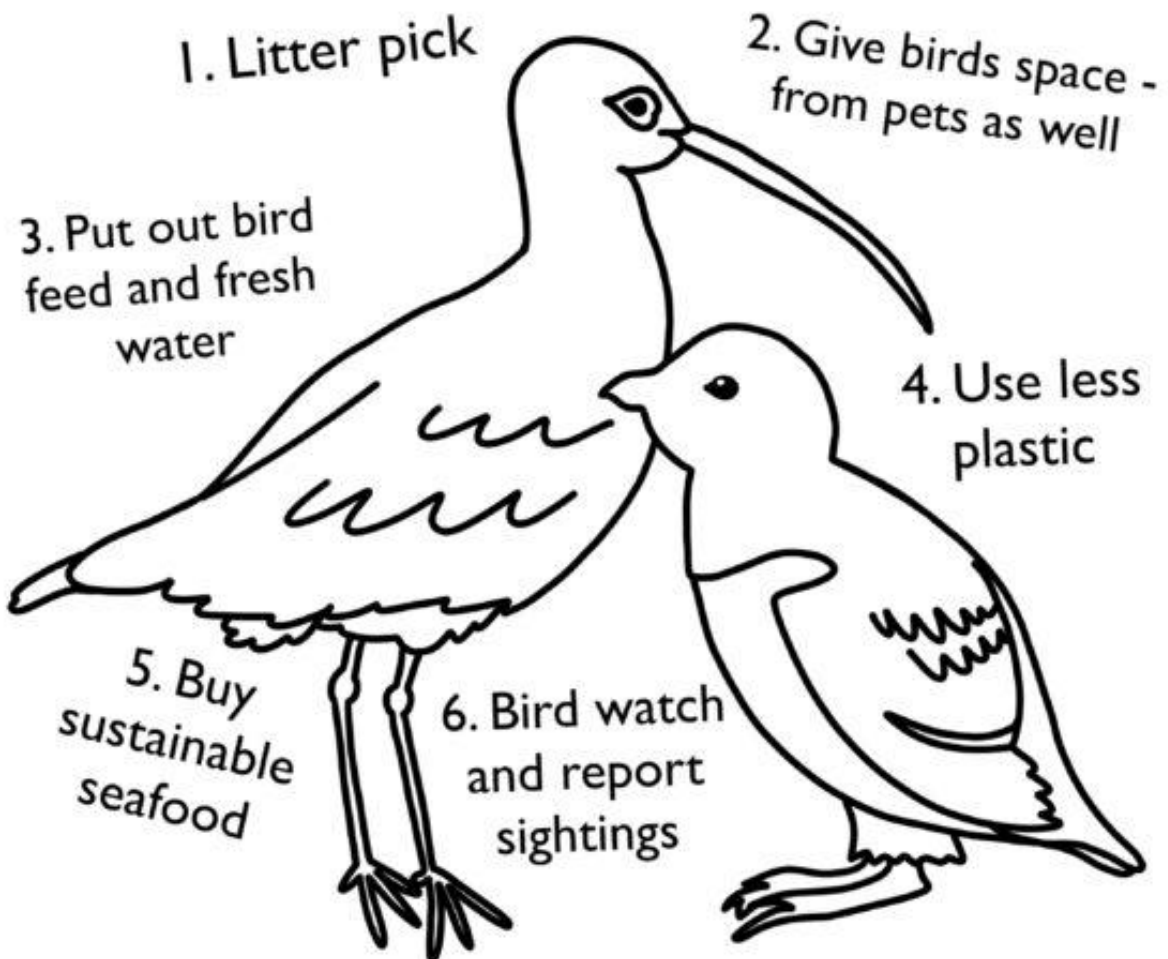




# sos

Follow  
these tips  
to help  
birds

## **SAVE OUR SEABIRDS!**



## Activity 17: Fish Forage

### Educator Notes

Try this game with your group to get them thinking about the difficult problems seabirds are facing

#### Background:

Seabirds have evolved different ways of catching and consuming their prey (fish and other marine organisms), from diving at great speeds, to skimming and dipping the surface, to using their wings to create a 'fishing net' effect.

However, as **nurdles**, and other types plastic, pollute our seas, the health of thousands of species is affected - usually by ingestion, entanglement or suffocation. More seabirds are **ingesting nurdles and other microplastics by accident**, whether they have mistaken plastic for prey, or they ingest plastic that their prey has already ingested - it is hard to escape!

This can cause life-threatening effects such as organ damage and starvation.

#### What you will need:

- This game works best for a group size of roughly six to twelve (for larger groups you could set up more than one game)
- A clear, open space (this game is great outdoors; try it by the coast, local park, or on your own grounds)
- Something to represent fish (beanbags or hand-sized pictures of fish work well) Have a large, odd number of them e.g., fifteen. On a random few, mark them with a sticker or permanent marker.
- A container per team to represent nests (hand-held buckets, basins or plant pots work well) – if you have twelve young people, you may choose to split them into three groups and therefore need three containers.
- Instruction sheet (can be digital or paper copy)

#### Instructions:

See next page.

Length: 

Location: 

Activity Type:  

INFORMATION KEY

#### JARGON BUSTER!

**NURDLES** are small pellets of plastic (about the size of a lentil!) that are melted down to make most plastic products. Billions are used each year, yet thousands of tonnes spill into the environment. They are having devastating effects on wildlife.



Find out more about nurdles and how to get involved in the Great Nurdle Hunt by visiting their website [here](#)



# Fish Forage Instruction Sheet

## Game Instructions:

- Introduce your group to the topic of plastic ending up in the sea. You could ask them what kinds of problems this causes and, through discussion, introduce the issue of wildlife accidentally eating plastic.
1. Before starting the game, an adult helper should hide the 'fish' around the area you are doing the activity (it's useful if one person introduces the topic while the other hides the fish!). Make sure to mark boundaries with your group.
  2. You are all seabirds! Split into your teams (number depending on your group size/number of containers) and choose a team name – these should be different seabirds (e.g. the gannets vs the puffins)
  3. Each team has a nest (container) – one seabird from each team should be in charge of looking after the nest (hold on to it tight!). Seabirds, make sure you know which nest is yours!
  4. Now everyone goes off on a fish forage – find the fish that have been hidden and bring them back to your nest. You want to get as many as you can – the chicks in your nest are very hungry!
  5. The game ends once all the fish have been caught. Take a look at each nest together. Which team has the most fish in their nest?
  6. Uh-oh, there's a catch! Lots of seabirds think they are eating fish, but it's plastic! Or they eat fish that are very bad for their health – lots of fish accidentally eat microplastics. Ask the groups to check their fish for any stickers/marks on them and count how many are in their nest. Oh no! These fish are actually full of nurdles! So your nest has been contaminated.
  7. Ask the group if it's safe to feed the plastic food to their chicks? What could happen to seabirds if they eat plastic? This is a big problem in our seas!



## Activity 18: Turbine Tig

### Educator Notes

Try this game with your group to get them thinking about the effects of wind farms on seabirds

Length: 

Location: 

Activity Type:  

INFORMATION KEY

### Background:

**Burning fossil fuels** (e.g. oil, coal and natural gas) for energy has led to a build-up of harmful gases in our atmosphere, which is continuing to contribute to **climate change**. As we need to keep generating energy, research and development into other less damaging methods is being done – and Scotland is home to some world-leading research and testing sites for **marine renewable technology**.

Our windy weather here in Scotland offers the chance to harness that **wind power**. Wind energy is what we call a renewable energy source because it is 'clean' – it doesn't release harmful gases. We can find **wind turbines on land, and in the sea**. These big turbines spin in the wind, and we use this energy to power our homes – it helps us turn on lights, cook our food and stay warm!

However, we must be very careful where wind turbines go to minimise their effect on wildlife! With lots more wind farms being built in the sea, seabirds are especially in danger as they can collide with them. **It's important we know where seabirds like to go**, and that new developments work closely with scientists to reduce as much disturbance as possible.

### JARGON BUSTER!

**CLIMATE CHANGE** refers to weather changes across the planet, including warming temperatures. Due to human impact, it is happening more rapidly and having severe impacts on plants and animals (including us humans!)

### What you will need:

- This game works best for a larger group, recommend a minimum of ten young people.
- A clear, open space (this game is great outdoors; try it by the coast, local park, or on your own grounds). The size of your space can be influenced by the number in your group (e.g. smaller space for a smaller group)
- Instruction sheet (can be digital or paper copy)



### Instructions:

See next page.



# Turbine Tig Instruction Sheet

## Game Instructions:


1. Find an open space you can run around in as a group – this can be by the coast, a grassy area in your local park, or an indoor space. Mark the boundaries of a roughly rectangular area so everyone knows to stay in the zone.
2. You are all seabirds on a Scottish island! Line up on one side of game area. Flap your wings on the spot and make some bird calls to warm up! You could ask your group to choose what Scottish seabird they are.
3. You need to fly across the sea, from the island you are on to the island on the other end of the game area. Move safely to the other end of the game area, flapping your wings and calling as you go!
4. Once the group is now at the other end of the game area, tell them that their journey between islands has been interrupted – a wind farm has been built! Choose a small handful of children to be wind turbines. Turbines must be spread out around the middle of the hall/area – no two turbines should be close enough to touch each other. Children who are turbines must stand still with arms outstretched on either side – like a turbine, children can swing their arms gently from side to side.
5. The seabirds must fly back to the other island, dodging the gently swinging arms of the wind turbines! Wind turbines will try and tap a seabird gently on the shoulder. When this happens, the child moves to the other team and becomes a wind turbine – remember wind turbines can't be close enough to touch each other!
6. Tell the seabirds when to start each flight as a group. Seabirds should fly back and forward between islands (while flapping and calling!) trying to dodge as many wind turbines as they can until there are too many wind turbines and the game is over.

## Activity 19: Plastic in the Kitchen

### Educator Notes

Turn your old clothing into a sustainable dishcloth and have some crafty fun at the same time

Length: 

Location: 

Activity Type:  

INFORMATION KEY

### Background:

Plastic is a serious problem for Scotland's wildlife, on land and in the sea. One way we can all help, is to **reduce our use of plastics**, especially single use plastics.

**Many items in the home contain plastic**, and it's not just the obvious ones! For example, most dishcloths contain man-made plastic fibres. It's important, where we can, to **reduce, reuse and recycle**.

### What you will need:

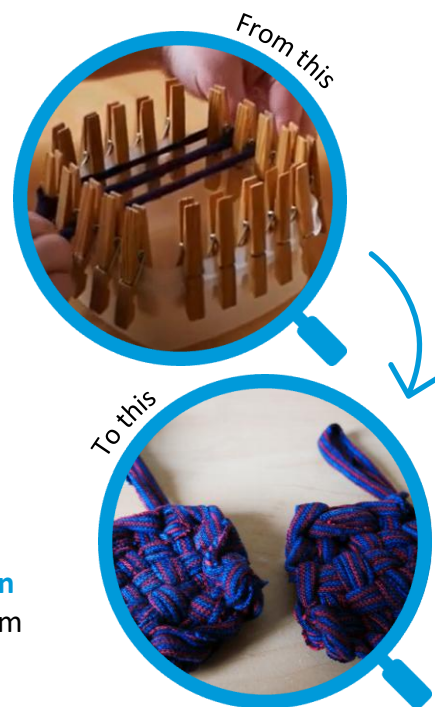
- Old pair of socks (encourage your group to ask an adult for a pair, as a child's sock may be too small)
- Clothes pegs (only used temporarily)
- A square-shaped Tupperware (only used temporarily)
- Scissors

### Instructions:

As there are quite a few steps to this craft, we have created a 'how to' video which you can find on YouTube [here](#), or on our website [here](#).

Before your session, you could **ask your group** to find one **item in their kitchen at home** that contains **man-made plastics**. Ask them to think about how they might be able to upcycle the packaging, giving it a second life by reusing it, or find an alternative plastic-free option.

You can find this **guide for reducing plastic use** on the next page - it may give some inspiration!



Fancy another alternative craft?  
Find out how to make beeswax wraps (a clingfilm alternative) on our website [here](#)



[www.wildlifewatch.org.uk](http://www.wildlifewatch.org.uk)



# Top tips to reduce your plastic use

## In the bathroom



Swap your plastic toothbrush for a bamboo one.



Get rid of your exfoliating shower puffs and bottled shower gel. Use unpackaged bars of soap instead. You can also get solid shampoo and conditioner.



Check your cleaning products don't contain microbeads – avoid things containing polyethylene and polypropylene.

## In the kitchen



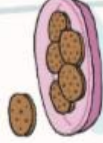
Say no to cling film and use reusable Tupperware or beeswax wraps instead.



Kitchen sponges are made of plastic. Switch to a biodegradable option.



Make your own! Biscuits and other snacks usually come in throwaway plastic packaging.



Did you know clothes release microfibres when washed that go down the drain? Use shorter wash cycles or purpose-made microfibre-catching laundry bags.

Many teabags use plastics to seal the bags. Go for brands that are plastic-free or try loose-leaf!



## Out and about



Do a little forward planning. Carry your own coffee cup, shopping bags and refillable water bottle. Go a step further by carrying your own cutlery, straws and food.



Food shopping? Choose loose produce over packaged and only buy what you need. Local greengrocers, community allotments or farmers' markets are often plastic free.



Having a take-away? When you're ordering over the phone ask to skip the cutlery or sauce sachets.



## Activity 20: Citizen Scientists

### Educator Notes

This activity gets children outdoors and connecting with nature, whilst also engaging with the scientific community through data collection

Length: 

Location: 

Activity Type:    

INFORMATION KEY

### Background:

**Citizen science** is chance for young people to become savvy scientists, getting hands-on outdoors and connecting with nature, whilst also engaging with the scientific community. It can help them **foster more curiosity and critical thinking**, with them helping the environment on a small scale (e.g. recording litter found) but contributing on a large scale (e.g. the data being used to help inform single-use plastic policies).

It can seem daunting ("but I'm not a scientist!") but **citizen science is for everyone!** You don't need to be able identify different species of seaweed or recognise a seabird by its call – if you can observe, count and take photographs, you can be a citizen scientist!

### What you will need:

- Here are a few basic items that can help you with your recording, but they may vary depending on the campaign you choose.
- Paper, pen, clipboard
  - Mobile phone/camera
  - Binoculars
  - Net, magnifying glass, bug pot



### Instructions:

We have created a **Coastal Citizen Science Guide** (next page) with lots of different projects you can get involved in. Click on the links to take you to the organisations website and find out how to record. There are lots of options from recording litter to seaweed to dolphins...

Here are some key tips when it comes to being a citizen scientist:

- Always be mindful of marine habitats and wildlife
- Read over our [Visiting the Coast Safely](#) page before heading out
- Take your time, observing the world around you closely
- If you have access to them, identification guides can be useful
- Have fun with it!

**Seek by iNaturalist** is an **identification app**, great for using with **young people**. All you need is a smartphone – download the app, take a photo of your find and it will identify it for you – plus the data gets recorded so it is **even more citizen science**



# Coastal Citizen Science Guide

## [Great Eggcase Hunt](#)



Search and record species of mermaid's purses with the *Shark Trust*

## [The Big Seaweed Search](#)



Search and record species of seaweed with the *Natural History Museum*

## [Source to Sea](#)



You can collect and record inland litter with the *Marine Conservation Society*

## [Beach Watch](#)



Collect and record litter on the beach with *Marine Conservation Society*

## [BirdTrack](#)



Record your bird sightings with the *British Trust for Ornithology*

## [Whale Track](#)



Record your whale and dolphin sightings with the *Hebridean Whale & Dolphin Trust*

## [Great Nurdle Hunt](#)



Help collect and record small balls of plastic (nurdles) with *FIDRA*

## [Jelly Watch](#)



Record stranded jellyfish on your beaches with *Jelly Watch*

## [Seagrass Spotter](#)



Search and record your seagrass finding with *Seagrass Spotter*, run by *Project Seagrass*

## Additional Notes for Educators

This section includes extra information to help you plan and lead your outdoor sessions.

For more activities, head over to the [Discover. Learn. Play](#) section of our website!



In this section you will find the following:

- [Follow up Opportunities](#)
- [Visiting the Coast Safely](#)
- [Rock Pooling: Safety and Top Tips](#)
  - [Curriculum Links](#)

**Have you used some of this pack? We would love your feedback!**

This is one of our first Discovery Den activity packs. We are developing a series of packs, just like this one, and so your feedback will help us improve them for your use.

After using some of the activities, we would greatly appreciate you taking a few minutes to fill out our short feedback form [here](#).

## Follow up Opportunities

### Discover Scotland through our reserves

The Scottish Wildlife Trust manages **over 100 wildlife reserves across Scotland**, covering more than 17,000 hectares. With 90% of the population living within just 10 miles of a Scottish Wildlife Trust reserve, you're never far away from your next wildlife encounter!

**Spey Bay**, in Moray, is a beautiful coastal reserve with the largest shingle beach in Scotland – it's a great place to spot dolphins!



Our **Montrose Basin Visitor Centre** offers spectacular views of the estuary mud flats as well as educational/group visits where you can learn all about the coastal wildlife. You can find out more by visiting our website [here](#).

You can find your nearest reserve and start planning your trip by visiting our website [here](#).

### Explore our other activities



**We have other fun activities about different topics!** To find a host of other activities, visit the Discover, Learn, Play section on our website [here](#). You can filter through activities to find those that suit your needs.

### Join our Wildlife Watch Network



Wildlife Watch groups are the Scottish Wildlife Trust's **nature clubs for children**. We have a **network of them across Scotland**, from the borders to the highlands and islands! You can find out about all our different groups [here](#).

Setting up a group is a fun way to help connect children in your community with nature at your doorstep. They can be set up by adults in the community, other organisations, or schools. You can find out more [here](#).



### Watch our Oceans of Value Film

Our Oceans of Value film captures how **communities of Orkney value the marine environment**. You can view **bite-sized clips** of the film on our **YouTube channel**, hearing what Orcadians think about different topics from fishing to folklore!

You can read more about the project and its outcomes on our website [here](#).

Watch the film on our YouTube channel by clicking the icon below





## Visiting the Coast Safely

If you are taking your group to visit the coast, it is important to do so safely! Before your trip, it is important to assess the site you are visiting and complete a comprehensive [risk assessment](#). We have included some things to keep in mind below.

Take a read of the [Scottish Outdoor Access Code](#) and [Scottish Marine Wildlife Watching Code](#) before you go. These guidelines are there for your safety and the protection of nature. They also have resources and activities on their website that you can use with your group.



### Things to keep in mind before and during your trip:

- It is important to know the [tide times](#) when visiting the coast – you can find this by visiting the MET office website [here](#). While you're out, be aware of your surroundings and the tide's direction.
- Prepare for the [weather](#) - coasts can be windier! Many layers if it's cold. Alternatively, sun cream and hats if it's warm. Always check for weather warnings before heading out.
- Look up your [nearest public toilet](#) before heading out. You could contact cafe/leisure facilities ahead of time to ask if your group can use their toilets too.
- Be aware of limited [phone reception](#) in remote places. Keep a mobile to hand. Know your nearest landline (a nearby café?)
- Keep to [designated paths and dune boardwalks](#). Beware of uneven, unstable or slippery ground (rocks can end up particularly slippery!). Don't climb up or go near the top or bottom of a cliff.
- Stick together. Having your group wear brighter clothing can help. A great way to [set boundaries](#) with young people is to get them to identify the boundaries themselves. Explain what the activity is, and then ask them to suggest where is on limits and where is off limits.
- Treat [coastal wildlife with care](#). Keep a distance from seals who are enjoying the beach too. Be mindful of [ground nesting birds](#) in the summer by sticking to paths and keeping [dogs](#) on leads – and read signs as many beaches don't allow dogs during breeding season. Leave animals where you find them. Carefully lift and replace any rocks you move and leave attached seaweed in place.
- Take [your rubbish home](#) (and any rubbish you can see and pick up safely). Bring a rubbish bag with you.
- Have fun!

Check out The Royal National Lifeboat Institution's (RNLI) guidance when it comes to visiting coasts and beaches by visiting their website [here](#).

## Rock Pooling: Safety and Top Tips

Make sure to read the [Visiting the Coast Safely](#) page before heading outside. It is also important to have a complete a comprehensive [risk assessment](#) before carrying out your rock pooling activity.

### Things to keep in mind before and during your rock pooling:



- It is important to know the [tide times](#) when visiting the coast – you can find this by visiting the MET office website [here](#). While you're out, be aware of your surroundings and the tide's direction.
- Make sure you are [always supervising children](#) while rock pooling.
- Make sure any [cuts are covered](#) by watertight plasters. Always [wash hands](#) thoroughly after this activity. Avoid touching nose, eyes and mouth when you have wet or dirty hands.
- Dress appropriately for the weather and outdoor work. Children and adults should wear [appropriate footwear](#) – we recommend wellies or sturdy shoes.
- Any adult acting in a supervisory role should be [adequately trained](#), ideally first aid.
- Only keep animals in [buckets out of the sun](#) and for a short time.
- Replace [rocks to the same position](#) once you've looked underneath.
- Don't [praise limpets/anemones/seaweed](#) from their homes.
- Return all creatures [back where they were found](#) once you are finished and [do not take any home](#)
- Afterwards, [wash all trays and nets](#) you used before using them for different activities



# Curriculum Links

All activities included in this pack are listed below with their links the Scottish Curriculum for Excellence highlighted. Outcomes for only first and second levels are shown. This list is not definitive and can be adapted.

Activity	Curriculum Links
Section 1: Connecting to the Coast	
Activity 1: Shoreline Detectives	<ul style="list-style-type: none"><li>Health and Wellbeing (Mental, emotional, social and physical wellbeing; Physical activity and sport)</li><li>Sciences (Planet Earth)</li><li>Social Studies (People, place and environment)</li></ul>
Activity 2: Snorkel School	<ul style="list-style-type: none"><li>Health and Wellbeing (Physical activity and sport)</li><li>Sciences (Planet Earth)</li></ul>
Activity 3: Beach Birds	<ul style="list-style-type: none"><li>Health and Wellbeing (Mental, emotional, social and physical wellbeing)</li><li>Sciences (Planet Earth)</li><li>Social Studies (People, place and environment)</li></ul>
Activity 4: High or Low (Tide!)	<ul style="list-style-type: none"><li>Health and Wellbeing (Physical activity and sport)</li><li>Sciences (Planet Earth)</li></ul>
Activity 5: Sound Scape	<ul style="list-style-type: none"><li>Expressive Arts (Art and design)</li><li>Health and Wellbeing (Mental, emotional, social and physical wellbeing)</li><li>Social Studies (People, place and environment)</li></ul>
Activity 6: Rock Pool Ramble	<ul style="list-style-type: none"><li>Health and Wellbeing (Mental, emotional, social and physical wellbeing; Physical sport and activity)</li><li>Sciences (Planet Earth)</li><li>Social Studies (People, place and environment)</li></ul>
Activity 7: Sink or Swim?	<ul style="list-style-type: none"><li>Sciences (Planet Earth)</li></ul>



# Curriculum Links

Activity	Curriculum Links
Section 2: Exploring Coastal Creatures	
Activity 8: Bird Beak Lab	<ul style="list-style-type: none"><li>Mathematics (Number, money and measure)</li><li>Sciences (Planet Earth)</li><li>Social Studies (People, place and environment)</li></ul>
Activity 9: Ocean Giants	<ul style="list-style-type: none"><li>Mathematics (Number, money and measure)</li><li>Sciences (Planet Earth)</li><li>Social Studies (People, place and environment)</li></ul>
Activity 10: Bottle Basking Shark	<ul style="list-style-type: none"><li>Expressive arts (Art and design)</li><li>Sciences (Planet Earth)</li></ul>
Activity 11: Bird Nest Architects	<ul style="list-style-type: none"><li>Health and Wellbeing (Mental, emotional, social and physical wellbeing)</li><li>Sciences (Planet Earth)</li><li>Social Studies (People, place and environment)</li></ul>
Activity 12: Coastal Creature Masks	<ul style="list-style-type: none"><li>Expressive Arts (Art and design)</li><li>Sciences (Planet Earth)</li></ul>
Activity 13: Egg Box Crab	<ul style="list-style-type: none"><li>Expressive Arts (Art and design)</li></ul>
Activity 14: Web of Life	<ul style="list-style-type: none"><li>Literacy and English (Listening and talking)</li><li>Sciences (Planet Earth)</li></ul>





# Curriculum Links

Activity	Curriculum Links
Section 3: Key Threats and How to Help	
Activity 15: Coastal Clean Up	<ul style="list-style-type: none"><li>Health and Wellbeing (Mental, emotional, social and physical wellbeing; Physical activity and sport)</li><li>Social Studies (People, place and environment)</li></ul>
Activity 16: Save Our Seabirds Poster	<ul style="list-style-type: none"><li>Expressive Arts (Art and design)</li><li>Literacy and English (Listening and talking)</li><li>Sciences (Planet Earth)</li><li>Social Studies (People, place and environment)</li></ul>
Activity 17: Fish Forage	<ul style="list-style-type: none"><li>Health and Wellbeing (Physical activity and sport)</li><li>Sciences (Planet Earth)</li><li>Social Studies (People, place and environment)</li></ul>
Activity 18: Plastic in the Kitchen	<ul style="list-style-type: none"><li>Expressive Arts (Art and design)</li><li>Literacy and English (Listening and talking)</li><li>Sciences (Planet Earth)</li><li>Social Studies (People, place and environment)</li></ul>
Activity 19: Turbine Tig	<ul style="list-style-type: none"><li>Health and Wellbeing (Physical activity and sport)</li><li>Sciences (Planet Earth)</li><li>Social Studies (People, place and environment)</li></ul>
Activity 20: Citizen Scientists	<ul style="list-style-type: none"><li>Health and Wellbeing (Mental, emotional, social and physical wellbeing)</li><li>Literacy and English (Listening and talking)</li><li>Mathematics (Information handling)</li><li>Sciences (Planet Earth)</li><li>Social Studies (People, place and environment)</li></ul>





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