



# SSC DIVE IN!

## WEIRD & WONDERFUL SEAS



George Stoyke (c) SNH



Ben James (c) SNH



Lisa Kamphausen (c) SNH

**HALLOWEEN-SPECIAL!**





# WELCOME!

Hello, and welcome to “SSC Dive In!” - packs of resources providing seaside fun directly into family homes and classrooms.

This pack's theme: **Weird & Wonderful Seas**

Our seas are incredibly diverse, meaning they're full of lots different species that come in all sorts of shapes and sizes. There are magnificent animals, such as whales, adorable ones, such as puffins, and beautifully coloured seaweeds that capture our attention, but what about the stranger, more bizarre creatures? They're just as important and special in their own way.

This pack is dedicated to all the weird and wonderful species out there - their gross habits, scary faces and bizarre lifestyles that make for perfect for Halloween reading.

Guaranteed to make you say “wow!”.

## Inside this pack:

- **Discover: Weird & Wonderful species profiles**
- **Craft: Jam Jar Lights**
- **Activity: Design your own sea creature**
- **Glossary: Scientific words**

**We'd love to hear from you.** If you've enjoyed reading our pack, or been inspired to have a go at any of the activities, let us know. Please send any comments or pictures you are happy for us to share and have permission for to [marineengagement@seabird.org](mailto:marineengagement@seabird.org).

**Enjoy using our packs and want to see more?** The Scottish Seabird Centre is an environmental conservation charity and every penny we raise helps us deliver our projects and resources such as these Dive In packs. If you enjoy using our resources and would like to support our work, please consider making a donation through our [JustGiving page](#). Thank you.

More resources available on our [website](#).

We hope you enjoy diving in to the pack.

**Scottish Seabird Centre Learning Team**



**Hint:** The meaning of words in **purple** can be found in the Glossary at the end of the pack. Words in **blue** contain links to websites.

# DISCOVER

## WEIRD & WONDERFUL SPECIES

### Lumpsucker

**TYPE OF CREATURE:** Fish

**DIET:** **Carnivore**—Worms, prawns, small fish, jellyfish.

**SIZE:** 30-50cm

**AWARD:** Champion clinger



#### WHAT DOES IT LOOK LIKE?

A round, lumpy-looking fish with a special sucker called a 'suction disc' under its body. The suction disc is made from two fused fins and is used to help the fish cling to rocks in rough seas.

Adults are usually blueish-grey in colour, though males develop an orangey belly during the breeding season (like the top photo). Watch footage of them in UK seas [here](#).

#### WHERE DOES IT LIVE?

Lumpsuckers are most commonly found around Scotland and the northern coast of England. They typically live at depths of 50—300m but can be found on rocky shores during the breeding season in spring. Keep an eye out for them in rockpools during this time—they'll be the biggest fish there!

#### WEIRD & WONDERFUL FACTS:

Male lumpsuckers, not the females, take care of eggs until they hatch. They use their strong suction disc to stay by the eggs and guard them from predators. They also fan the eggs with their tails to keep them well **oxygenated**.

Lumpsucker eggs are harvested and eaten by humans as food called 'caviar'.

Lumpsuckers are also a favourite food of otters on the west coast of Scotland.



(c) Kris-Mikael Krister

Lisa Kamphausen (c) SNH



**Top photo:** Male lumpsucker in breeding colours, Lisa Kamphausen (c) SNH.

**Bottom photo:** Close-up of suction disc (c) Kris-Mikael Krister, [Flickr](#).



## WEIRD & WONDERFUL SPECIES

### Comb Jelly

**TYPE OF CREATURE:** Ctenophore

**DIET:** Mostly carnivorous—plankton

**SIZE:** Species range between a few millimetres to 1.5m



**AWARD:** Species that looks most like a spaceship

Lisa Kamphausen (c) SNH

**Photo:** Comb jelly by Lisa Kamphausen (c) SNH

#### WHAT DOES IT LOOK LIKE?

Although comb jellies look like jellyfish with transparent, jelly-like bodies, they are actually Ctenophores (pronounced “tee-no-fours”).

Ctenophores are different to jellyfish because they don't have stinging cells and have swimming plates or 'combs', not found on jellyfish, that run down the side of their bodies. The combs are made up of thousands of 'cilia'—small hair-like structures that beat back and forth to move comb jellies through the water. As comb jellies swim, a beautiful shimmering rainbow effect appears along the combs, caused by light waves 'refracting' (breaking up) when they hit the moving hairs.

#### WHERE DOES IT LIVE?

Different species of comb jelly can be found swimming in coastal and oceanic waters off the west and north coasts of Scotland and Wales. Some species live in deep parts of the ocean.

#### WEIRD & WONDERFUL FACTS:

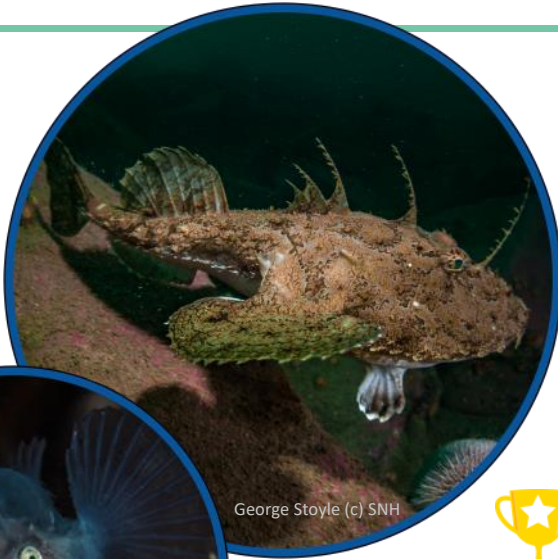
Most comb jellies are predators that eat **plankton**. When there is lots of food, a comb jelly can eat up to ten times its own body weight in one day. Click [here](#) to learn more about comb jellies and see feeding in action.

Comb jellies are ancient animals, having been in the ocean for 500 million years. Whilst they are entirely soft-bodied today, their ancestors had hard skeleton structures.





## WEIRD & WONDERFUL SPECIES



### Anglerfish

**TYPE OF CREATURE:** Fish

**DIET:** Carnivore—mostly smaller fish

**SIZE:** Typically ~1m long. Can grow up to 2m.



**AWARD:** Most monster-like

#### WHAT DOES IT LOOK LIKE?

Anglerfish, also known as Monkfish, are scary-looking fish with a flattened body and large mouth full of sharp, pointy teeth.

Fully-grown adults are usually mottled brown in colour with a white underside. **Juveniles** develop colour with age.

Anglerfish get their name from the thin spine on the top of their heads with a lure at the end, used for attracting prey.

#### WHERE DOES IT LIVE?

Anglerfish usually occur in coastal waters between 20m-550m but have been known to swim as deep as 2000m in **offshore** waters to **spawn**. They are mostly found on sandy or muddy bottoms on the west coast of England, Wales and Scotland and the north, south and east coasts of Ireland.

#### WEIRD & WONDERFUL FACTS:

Anglerfish are ambush predators. They lie **camouflaged** on the seabed with their lure rising above their head. Fish are attracted to the lure because they think it is food. Once the prey fish are in range, the anglerfish lunges with incredible speed to snap the fish up in its mouth.

Anglerfish also have expandable stomachs, meaning they can eat fish which are almost as large as themselves.



**Top photo:** An anglerfish swimming over boulders in Loch nam Madadh by George Stoye (c) SNH

**Bottom photo:** Juvenile anglerfish in a cave at North Rona by George Stoye (c) SNH



## WEIRD & WONDERFUL SPECIES

### Fulmar

**TYPE OF CREATURE:** Seabird

**DIET:** Carnivore—fish waste, crustaceans and sand eels.

**SIZE:** Up to 50cm long with a ~1m wingspan.

**AWARD:** Most disgusting defence mechanism



#### WHAT DOES IT LOOK LIKE?

Similar to gulls, fulmars have a white head and underside, grey wings and dirty yellow beak. However, they have a thick neck, dark eyes and straight, stiff wings that are different to gulls. They also have a tube-like nostril, visible at the top of their beak, which is used for getting rid of salt that builds up in their bodies.

When on the move to feed or **raft** they tend to fly low over the water with shallow wingbeats but they glide higher above their coastal breeding sites.

#### WHERE DOES IT LIVE?

Fulmars are always out at sea, feeding in flocks or resting in rafts, except when they come to the coast to breed. They can be seen in a number of coastal locations around Scotland in the summer and are a common site in the Firth of Forth, on the north coast and the Northern Isles. They breed on rocky cliff faces and can often be found nesting amongst other seabird species.

#### WEIRD & WONDERFUL FACTS:

Fulmars defend their nests from intruders by spitting out a foul-smelling oil. In fact, their name comes from the Old Norse words 'full', meaning "foul", and 'már', meaning "gull", in reference to this disgusting defence mechanism!

Fulmars aren't gulls, they're actually related to the albatrosses. Click [here](#) to watch a video containing footage and more information about these wonderful birds.



(c) Emily Burton

**Photos:** Fulmars at their coastal breeding sites. Bottom photo © Emily Burton.



## WEIRD & WONDERFUL SPECIES



Graham Saunders (c) SNH

### Common sunstar

**TYPE OF CREATURE:** Starfish

**DIET:** Carnivore—mussels, starfish, sea cucumbers, brittle stars, other sun stars.

**SIZE:** Up to 35cm.



**AWARD:** Worst dinner manners

### WHAT DOES IT LOOK LIKE?

Sunstars are types of starfish that typically have 10-12 arms growing out of a central circular disc, giving them the appearance of a sun with its rays. Common sunstars are orangey-red in colour with bands of yellow, orange, pink or white.

All species of starfish are Echinoderms (pronounced “eek-eye-no-derms”) which means “spiny skinned” - so called because of the tough spines that cover their bodies.

### WHERE DOES IT LIVE?

Sunstars live on sand, stones, kelp forests, mussel and oyster beds in shallow waters down to depths of 50m. Small ones can sometimes be found in rockpools at low tide.

### WEIRD & WONDERFUL FACTS:

Believe it or not, sunstars, like all starfish, are deadly predators that eat in a particularly gruesome way. Once they have found suitable prey, they move on top of it, hold it with their **tube feet**, then turn out their stomachs and release digestive juices to dissolve their victim! Watch a video of a star fish eating [here](#).

10-12 is the usual number of arms on sunstars, but some have been seen with 16.

**Top photo:** A sunstar on a horse mussel bed by Graham Saunders (c) SNH

**Bottom photo:** A sunstar trying to feed on a horse mussel by Graham Saunders © SNH



Graham Saunders (c) SNH



## WEIRD & WONDERFUL SPECIES



### Common cuttlefish

**TYPE OF CREATURE:** Cephalopod

**DIET:** Carnivorous—crabs, fish & small cuttlefish

**SIZE:** Up to 45cm



**AWARD:** Kings & queens of camouflage

**Photo:** A cuttlefish. Notice its eye looks W-shaped. Scientists think they change the shape of their **pupils** to see better in certain lights.

#### WHAT DOES IT LOOK LIKE?

Cuttlefish are Cephalopods (pronounced “se-fa-low-pods”) meaning they belong to the same family as octopus and squid. You can see this with their well-developed heads, large eyes and eight arms at the front with suckers. Their mouths also have two tentacles around

the outside for catching prey and beak-like jaws inside for slicing it up. The rest of their bodies are flattened with two fins running along either side. Cuttlefish are incredibly variable in colour because they can change their appearance, but are usually blackish-brown, mottled or striped.

#### WHERE DOES IT LIVE?

Cuttlefish are typically found on sandy and muddy habitats 0-200m deep. They prefer warmer water so are mostly found along the south coast and west coast of England and Wales, but are also recorded off the west and north coast of Scotland, including the Hebrides.

#### WEIRD & WONDERFUL FACTS:

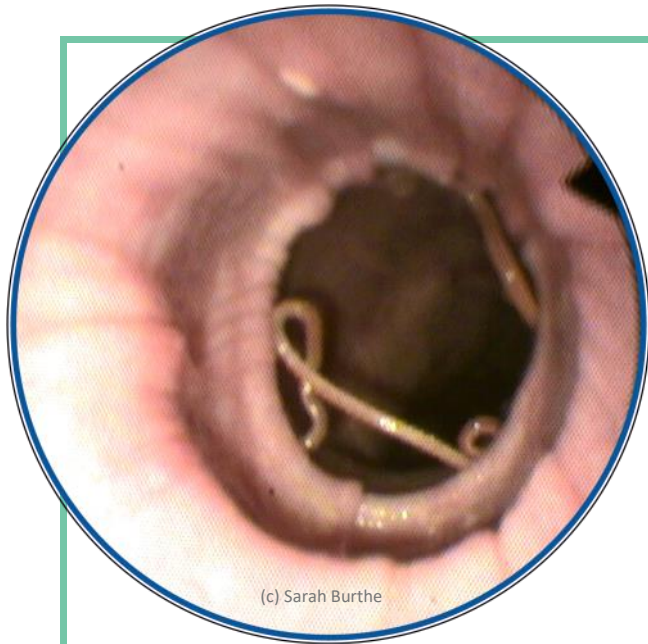
Cuttlefish have a white, surfboard-looking structure inside their bodies called a ‘cuttlebone’ which helps them control their buoyancy. Cuttlebones wash up on beaches and are a favourite treat for pet parrots.

Cuttlefish are capable of changing texture and colour to take on the patterning of their backgrounds, attract mates or distract predators. They do this using ‘chromatophores’ (pronounced “crow-mat-o-fours”) - specialised cells under their skin. Find out more about cuttlefish and their amazing colour changing abilities [here](#).





## WEIRD & WONDERFUL SPECIES



(c) Sarah Burthe

**Photo:** *Parasitic nematodes in the gut of a seabird* © Sarah Burthe, UKCEH.

### Roundworm

**TYPE OF CREATURE:** Parasitic nematode

**DIET:** Parasitic—lives in and on other animals and plants

**SIZE:** Species can range from microscopic to metres long



**AWARD:** Grossest existence

### WHAT DOES IT LOOK LIKE?

A worm-like animal with a mouth at one end and a hole at the other for expelling waste. Animal roundworms are generally larger than plant roundworms which are microscopic in size. Though they look like worms and are called roundworms, they are in fact a different kind of creature called a nematode.

### WHERE DOES IT LIVE?

Nematodes are among the most abundant animals on Earth. Scientists have named 20,000 different species but there are probably many more yet to be discovered. They are found in all sorts of places. Those that are parasitic are found in a wide variety of animals and plants, whilst others are found living freely in soil, the ocean, and even cracks in the Earth's crust.

### WEIRD & WONDERFUL FACTS:

One species of parasitic nematode has been found living in the bodies of whales and can grow to a whopping 9m in length!

The study of nematodes in the stomachs of seabirds is helping scientists understand how healthy seabird populations are around Scotland. Humans can also get the same species of parasitic nematodes as seabirds. They get into the human body by eating infected raw or undercooked fish.



## WEIRD & WONDERFUL SPECIES



Suzanna Henderson © SNH

### Dead Man's Fingers

**TYPE OF CREATURE:** Coral

**DIET:** **Omnivores**— animal and plant plankton

**SIZE:** Up to 20cm

**AWARD:** Most unpleasant name



#### WHAT DOES IT LOOK LIKE?

A yellow, orange or brown coloured **soft coral** with branching, thick, fleshy, finger-like structures (giving it its gruesome name).

All corals are made-up of thousands of individual 'polyps'— small animals related to anemones and jellyfish—that stick out their tentacles to feed on passing plankton. When polyps are feeding, their exposed tentacles give the corals a fluffy appearance (as seen in the first photo).

#### WHERE DOES IT LIVE?

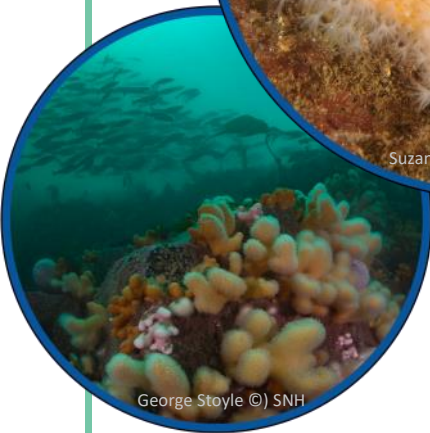
Dead man's fingers grow on rocks, shells and stones on the lower shore down to depths of about 50m. They can either grow by themselves or lots can grow together, covering large areas of seafloor.

Found all along the British coastline, this is a common species to see when diving.

#### WEIRD & WONDERFUL FACTS:

Dead man's fingers are sometimes seen growing on living crabs and sea snails.

In preparation for spawning in winter months, the polyps remain inside the coral's soft body and don't eat all autumn.



George Stoye © SNH

**Top photo:** Close-up of Dead man's fingers with it's polyps tentacles sticking out by Suzanne Henderson © SNH.

**Bottom photo:** Lots of dead man's fingers with shoaling fish in Loch nam Madadh by George Stoye © SNH



## WEIRD & WONDERFUL SPECIES

### Sea Squirts

**TYPE OF CREATURE:** Ascidian

**DIET:** Omnivores—any passing food they filter through their bodies

**SIZE:** Various. Mostly small, some can grow up to 4cm tall.

**AWARD:** Most incredible lifecycle



#### WHAT DOES IT LOOK LIKE?

Adults have simple, soft, sac-like bodies with 2 holes, called 'siphons', used for taking water in and pushing water out of their bodies. Their bodies are covered in a tough protective layer called a 'tunic'.

There are many different types of sea squirt found in UK seas that come in all sorts of colours, shapes and sizes. Some live alone whilst others, like the brilliantly named 'baked bean' sea squirt (pictured on the left) live in **colonies**.

#### WHERE DOES IT LIVE?

Adult sea squirts are typically found on hard materials such as rocks and shells in shallow water down to depths of ~50m. Look out for them on rocky shores at low tide, especially in crevices or under rocks far down the shore.

#### WEIRD & WONDERFUL FACTS:

Though they have simple bodies as adults, ascidians (pronounced "a-see-dee-ans") actually start life as tadpole-like larvae that swim freely in the ocean. When they're ready to become an adult, they find a place to settle then digest their own brain, tail and spine-like structure called a 'notochord', ready for a simpler life on the seafloor.

They get their name because they tend to shoot out a stream of water if they're removed from the sea. (Please don't try this, though, as removing them may cause harm).



Ben James (c) SNH



Bill Sanderson (c) SNH

**Top photo:** A pair of sea squirts in Loch Carron by Ben James (c) SNH

**Bottom photo:** Bright red 'baked bean' sea squirts in Loch Eriboll by Bill Sanderson (c) SNH





## WEIRD & WONDERFUL SPECIES



**Photo:** By-the-Wind-sailor that has blown-up on a beach.

### By-the-wind-sailor

**TYPE OF CREATURE:** Hydrozoan

**DIET:** Carnivorous—young fish and other small animals.

**SIZE:** Up to 10cm long



**AWARD:** Most mysterious

#### WHAT DOES IT LOOK LIKE?

Another jellyfish look-alike. By-the-wind-sailors aren't jellyfish but a colonial hydroid (pronounced "hi-droid"). This means they're not one creature, but a colony of tiny individual animals.

The body is made-up of an oval-shaped float with short tentacles hanging down from the bottom and a raised fin, called a 'sail', sticking up on top. Like jellyfish, the tentacles have special stinging cells for catching prey. Unlike jellyfish, they are moved by the wind when it pushes on their sails.

Their floats are generally dark-blue in colour, most likely for camouflage and sun protection.

#### WHERE DOES IT LIVE?

By-the-wind-sailors are typically found floating on the surface of the open ocean in warmer waters but are pushed towards British shores in stormy weather. Keep a sharp-eye on beaches in autumn and winter time, especially along south and west coasts, as rough weather can blow them ashore (like the photo above).

#### WEIRD & WONDERFUL FACTS:

By-the-wind-sailors can be "right-handed" or "left-handed" depending on which way the sail is orientated. Most are "left-handed" with their sails going from the top left of the float to the bottom right. The orientation of the sail determines whether the animal travels left or right of the wind direction. Click [here](#) to watch a video and find out more about these mysterious creatures.





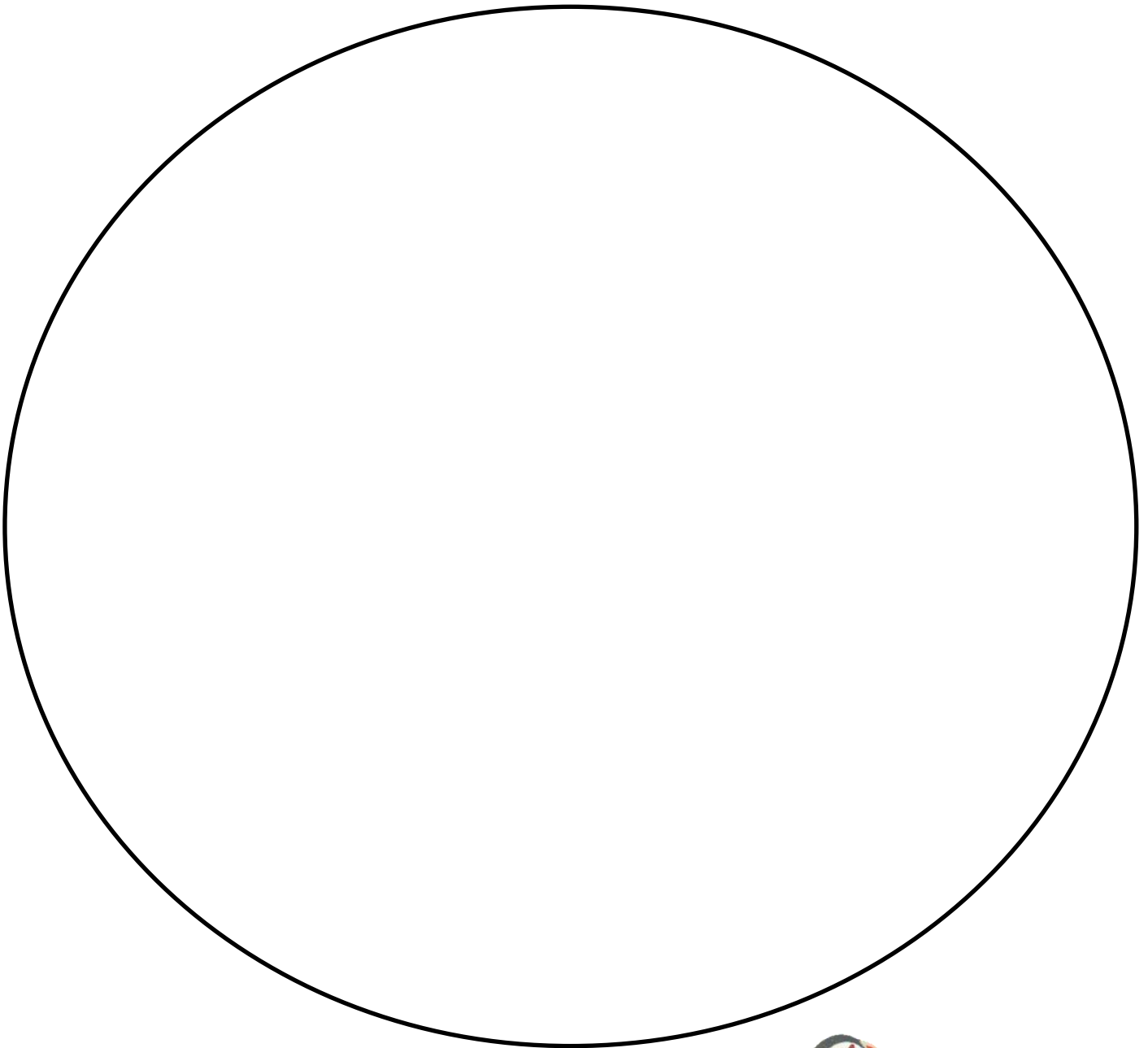
# ACTIVITY



## DESIGN YOUR OWN MARINE CREATURE

Now you've seen some of the fantastic **diversity** of creatures that live in our seas, why not have a go at designing your own in the circle below?

Think about where it would live, what it would eat, and how it would be **adapted** to its environment.





# CRAFT

## JAM JAR LIGHTS



### WHAT DO I NEED?

Clean empty jam jar  
(label removed)

Scissors

Coloured tissue  
paper

Battery powered LED  
tea light or fairy lights

Glue (Decopatch glue or  
watered down PVA glue)

Pen or pencil

Black or dark paper

A paint brush

1



Choose some  
coloured tissue  
paper and cut into  
strips.

Cut enough to cover  
the whole of your  
jam jar in a single  
layer of slightly  
overlapping strips.

2



Use the paint brush  
to apply a thin layer  
of glue to the  
outside of your jam  
jar. Stick the tissue  
on, one strip at a  
time, until jar is  
completely covered.

3



Use the black or dark  
paper to create silhouettes  
of strange or spooky  
shapes of your own  
design.

Make sure the size fits well  
onto the jar you are using.  
Use the pen or pencil to  
draw your shape then the  
scissors to carefully cut it  
out.

4



Use the glue to stick  
your silhouettes on  
top of the coloured  
tissue to make a  
scene. We made one  
Halloween scene and  
one underwater  
scene.  
Allow the glue to dry.

5



Switch on your tealight or fairy lights and pop inside the jar. Turn off the light in the room. Your scene should be illuminated. The background colour should glow, making the silhouettes stand out. This is because the thin tissue paper allows some light to pass through.

6



Optionally, you could add a ribbon trim to the top of the jar. Or you could add a handle using string or garden wire if you want to be able to carry your jar like a lantern. Make sure your handle design is really secure so the jar won't fall!

You could decorate several jars using different colours of tissue paper and a range of silhouette shapes. Some could be decorated with marine creatures like jellyfish, whales and squid while others could have spooky Halloween animals like spiders and bats.

**TOP TIP:** You can use more than one colour of tissue paper per jar.



## GLOSSARY

### CAMOUFLAGE

When animals conceal themselves by blending into their surroundings, either by the pattern, colour or texture of their skin, or the use of materials around them.

### CARNIVORE

An animal that eats another animal.

### COLONY

When two or more individual organisms (especially of the same species) live close together and are connected in some way. Colonies offer benefits such as safety in numbers from predators.

### JUVENILE

A young form of an organism that hasn't reached adulthood yet. Juveniles often look different to adults.

### OFFSHORE

Away from or at a distance from the coast.

### OMNIVORE

An animal that eats both plants and other animals.

### OXYGENATED

When something is supplied with oxygen. Animals need oxygen, a natural gas, to breathe and grow.

### PLANKTON

Plants or animals unable to swim against a current, meaning they have no control over where they are taken around the world. Plankton are mostly microscopic in size but some larger animals, such as jellyfish, are classed as plankton too.

### PUPILS

The black part of an eye that controls how much light enters the eye. Pupils are large when it's dark and small when it's bright —take a look in the mirror, or watch a friend's eyes, to see for yourself!

### RAFT

The term used for a large number of birds together on the sea.

### SOFT CORAL

Soft, bendable corals that often resemble plants or trees. Soft corals don't have stony skeletons like other corals, instead they have wood-like centres for support.

### SPAWN

When an animal releases or deposits eggs into its environment.

### TUBE FEET

Tentacle-like tubes on echinoderms, used for moving and grasping hold of prey and surfaces.