



# SSC DIVE IN!

## SUMMER





# WELCOME!

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

This pack's theme: **Summer**

Summer is a busy time in the ocean. Keep yourself, your class or family busy too with these super summer-y marine-themed resources!

## Inside this pack:

- Children's Blog: Seabirds in Summer
- Wordsearch
- Spotter Sheet
- Experiment instructions: Waterproofing
- Activity instructions: Droplet Maze
- Craft instructions: Puffin Food Chain Mobile
- Discover sheet: Feeding techniques
- Craft instructions: Diving Gannet
- Craft instructions: Hungry Hunters

**Important note:** *If you are going outdoors, please follow the social distancing protocols and government advice.*

**We'd love to hear from you!** If you've had fun having a go at activities, experiments and crafts, let us know. Any comments or pictures can be sent to [marineengagement@seabird.org](mailto:marineengagement@seabird.org). More resources available on our [website](#).

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

We hope you enjoy diving in to the pack!

*Scottish Seabird Centre Learning Team*



# BLOG



## SEABIRDS IN SUMMER

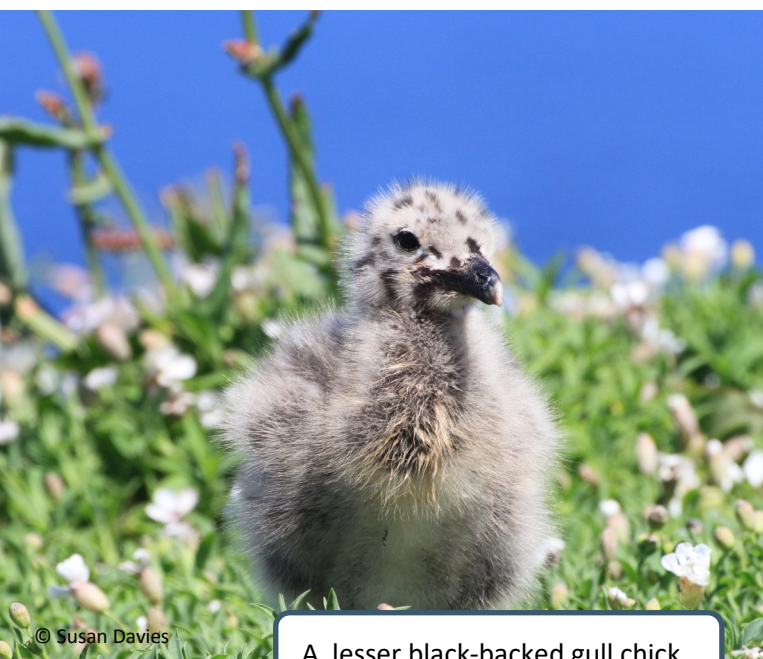
*By Emily Burton, Volunteer Coordinator*

Ice-creams and flip-flops can only mean one thing - summer is in full swing! But whilst you're rubbing in your sun cream, splashing in the paddling pool and playing in the park, what do you think all of the seabirds around Scotland are up to?

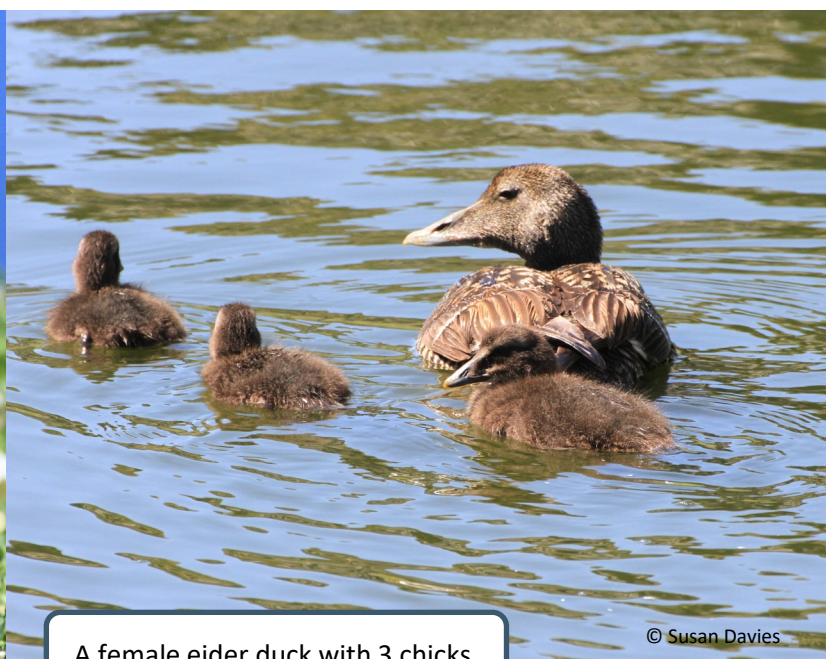
For seabirds, summer is a very busy time - lots of them have hungry chicks to feed! But for the adult birds, a quick trip to the shop is out of the question. Luckily, the sea is alive with tasty food and the seabirds use all sorts of different techniques to catch the fish that they need.

Gannets dive like arrows, head first into the water, swimming deeper to catch fish with their long, powerful beaks. Arctic terns are more dainty, hovering above the water before dropping down and picking fish off the surface. Puffins float on the surface like ducks, before plunging under the water, using their feet and wings to swim and their beak to catch fish like sandeels.

When they've caught what they can, the adult birds head back to their nests, usually on islands or cliffs, to feed their hungry chicks. Like their parents, seabird chicks all look different. Often, they have **adapted** to have fluffy feathers which disguise them in their **habitat** (their homes), allowing them to blend in and stay safe from predators. This special adaptation is called **camouflage** and it's really important, as a seabird chick can look like a tasty treat to animals like stoats or herring gulls.



A lesser black-backed gull chick.



A female eider duck with 3 chicks.



Although it's famous for its incredible gannet colony, Bass Rock is also home to lots of other breeding seabirds. I asked Maggie Sheddan, who is the Ranger on Bass Rock, what the island is like in the summer.

*"At this time of year, Bass Rock is a busy place. On my last visit, we counted 13 new gannet territories (nesting areas), 6 of them with eggs. As it had been a while since we last visited the Rock, I expected the path to be filled with new nests, but it was clear. However, there were many freshly laid gannet eggs at either side of the path, and as I climbed higher there were signs that hatching wasn't far away. Gannet parents have to keep a close eye on their precious egg, as herring gulls often dive-bomb in hope of stealing them."*



© Maggie Sheddan

Bass Rock crowded with busy gannets.



© Maggie Sheddan

Two fluffy gugas on Bass Rock.

*I spotted some herring gulls sitting on eggs and 2 nesting shags. One of the shag nests was colourful with fishing nets and litter, despite my efforts to clear away netting before the breeding season began. I also spotted kittiwakes, guillemots and razorbills, who will all hopefully have chicks by now. Fulmars were flying around, and I think I spotted 3 pairs of breeding puffins too!*

*Despite looking high and low, no gugas (baby gannets) were spotted, but by now there will be lots. It will be very exciting to see the fluffy chicks next time we land - hopefully we can go back soon!"*

## SHOW-OFF YOUR SUMMER SEABIRD KNOWLEDGE

Find out how much you've learnt by answering the following questions:

1. How do Arctic terns catch fish?
2. Name an adaptation seabird chicks have to stay safe from predators?



# PUZZLE

## SUMMER SEABIRD WORDSEARCH



Can you find all the seabird names hidden in the grid?

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

Names to find:

**CORMORANT**

**GANNET**

**KITTIWAKE**

**RAZORBILL**

**EIDER**

**GUILLEMOT**

**PEREGRINE**

**SHAG**

**FULMAR**

**GULL**

**PUFFIN**

**TERN**

*Hint: Finding the  
first letter of a  
name is a good  
place to start!*





# SPOTTER SHEET

## SUMMER SEABIRDS

This is a guide to help you identify some of the seabirds you may spot around the shore, on cliffs and rocky outcrops. Use the circles provided to mark how many you spot.

### NORTHERN FULMAR

*Fulmarus glacialis*



With distinctive grey upperparts and a white underside, you can see it on cliffs and riding the updrafts. The name Fulmar comes from two old Norse words— fúl meaning foul and már meaning gull. They spit a foul smelling oil at intruders.

### HERRING GULL

*Larus argentatus*



A large gull with a bright yellow bill, red spot on its lower bill and pink legs. Found all year round in towns and harbours, it thrives on our rubbish. You may spot them doing a tap-dance on the grass to bring worms to the surface.

### NORTHERN GANNET

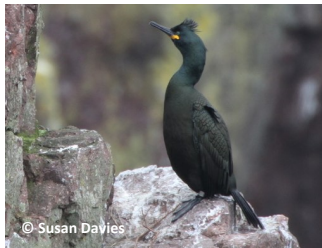
*Morus bassanus*



One of our favourites. Gannets can be seen circling above the Bass Rock or diving in an arrow-like form into the sea for food. A sleek shape, long neck and long pointed beak, wings and tail and distinctive yellow head.

### EUROPEAN SHAG

*Phalacrocorax aristotelis*



Found breeding on rocky coasts. It has a glossy dark green colour, striking green eye and a tufted crest on its head. You may see them perched on a rock with their wings stretched out; drying them off as their feathers are not waterproof.

### GUILLEMOT

*Uria algae*



Slender, chocolate brown with white lower parts. It has a 'bridled' form with a white ring round the eye and stripe behind. Gathering in groups on cliff ledges, their pear-shaped eggs are adapted to prevent them falling off the cliff.

### RAZORBILL

*Alca torda*



Breeding around our coastline the razorbill is jet black with a white underside. It has a thick, blunt, black beak with distinct white streaks at the tip and leading up to the eye. Often found on cliffs, ledges and crevices amongst guillemots.

### BLACK-LEGGED KITTIWAKE

*Rissa tridactyla*



A medium sized gull with a slender yellow bill, bright red gape and a distinctive repeated *kit-ti-wake* call. Nesting on coastal cliffs a good local site to spot them is Dunbar harbour. In flight they have distinctive black wing tips with a dipped in ink look.

### ARCTIC TERN

*Sterna paradisaea*



Keep your eyes peeled over the sea for this striking seabird with its long tail streamers, black cap, blood-red bill and red legs. It has an amazing migration and may travel as far as the moon and back in its lifetime; a distance of nearly 500,000 miles.

If you have enjoyed using our resources, please consider making a donation to the Scottish Seabird Centre. To find out more about the charity or to donate online, visit our [WEBSITE](https://www.seabird.org).

Supported by **BeGreen** Dunbar





# EXPERIMENT

## WATERPROOFING



### QUESTION: HOW DO BIRDS KEEP THEIR FEATHERS DRY?

Water-logged feathers could be disastrous for birds— they'd make the birds cold, heavy and unable to fly properly. So how do birds, particularly seabirds, keep dry?

### TEST

Test to see if a feather is **permeable** (not waterproof) or **impermeable** (waterproof).

#### WHAT DO I NEED?

- Adult bird feather (like the one pictured above—not fluffy)
- Water

- 1 Hold your feather flat and drip a few drops of water on its surface.

What happens? Is the water **absorbed** by feather (does it disappear)? Or does it stay as a droplet on the surface?

- 2 Now do the same as step 1 but tilt the feather at an angle whilst dropping the water.

What happens to the water droplet?

### ANSWER: OIL & PREENING

In the experiment above, the water will stay as a droplet on the feather for step 1 and run down the feather for step 2. But why?

Believe it or not, most birds have a special gland near their tails that produces an oil which is waterproof! Adults collect the oil on their beaks and run it through their feathers as they **preen** (take care of their feathers). Any water that lands on oily feathers simply slides right off!

Have a go at making your own waterproof surface on the next activity page..



#### FEATHER FUN:

Chick feathers aren't waterproof—they're extra fluffy to keep them warm.

"Like water off a duck's back" is an expression used to describe something that happens easily and smoothly— just like the water running off a feather!

# ACTIVITY

## DROPLET MAZE

Most adult birds keep their feathers waterproof by covering them in an oil from a special gland near their tail.

Explore the effects of waterproofing and test your patience with this fun activity!

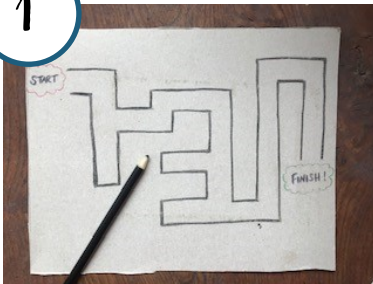
**CHALLENGE:** Design a maze and navigate a water droplet from the start to the finish.

### WHAT DO I NEED?

- Cardboard or thick paper
- Water
- Olive oil
- Marker pen or pencil
- Brush or sponge

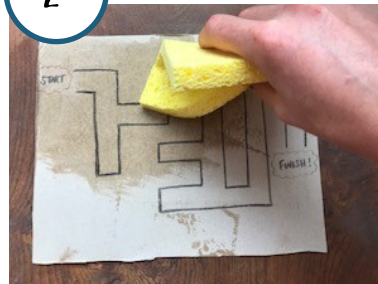
### INSTRUCTIONS:

1



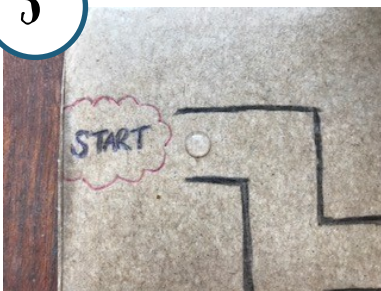
Design a maze and draw it on a piece of cardboard.  
Label the start and finish.

2



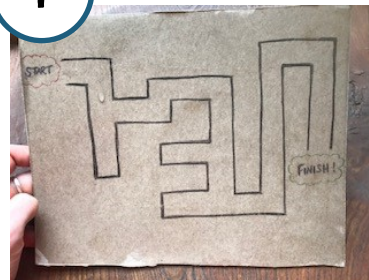
Use the brush or sponge to cover the maze with a layer of olive oil. Use enough oil so the surface is shiny.

3



Hold the card flat and place a drop of water at the start of the maze.

4



Move the droplet through the maze by tilting the card in the direction you want it to travel.



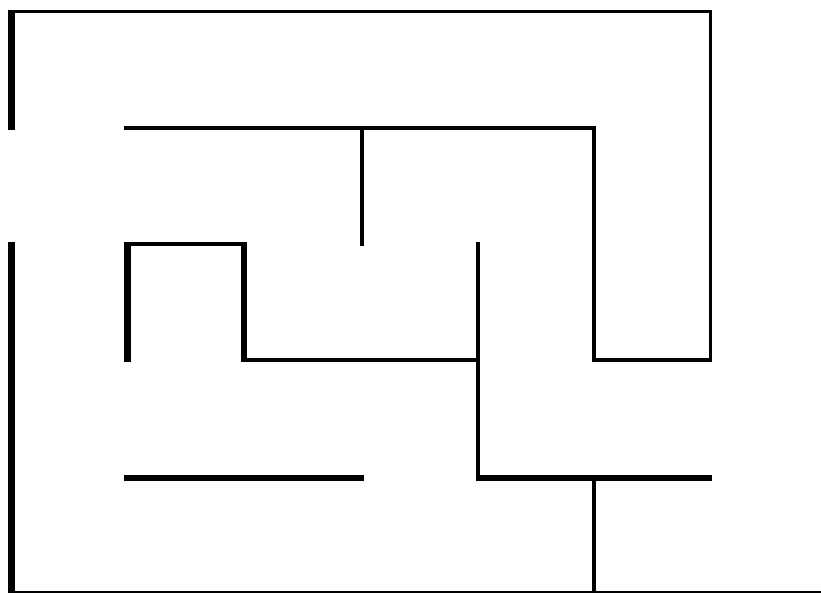
**Tips!** Tilting the card a little bit at a time will make the droplet easier to control. The easiest mazes to navigate through have straight lines with wide corridors. You can make the maze trickier by making it circular and adding awkward turns, dead ends and barriers.

Don't want to design your own maze? Print out or copy our template mazes.

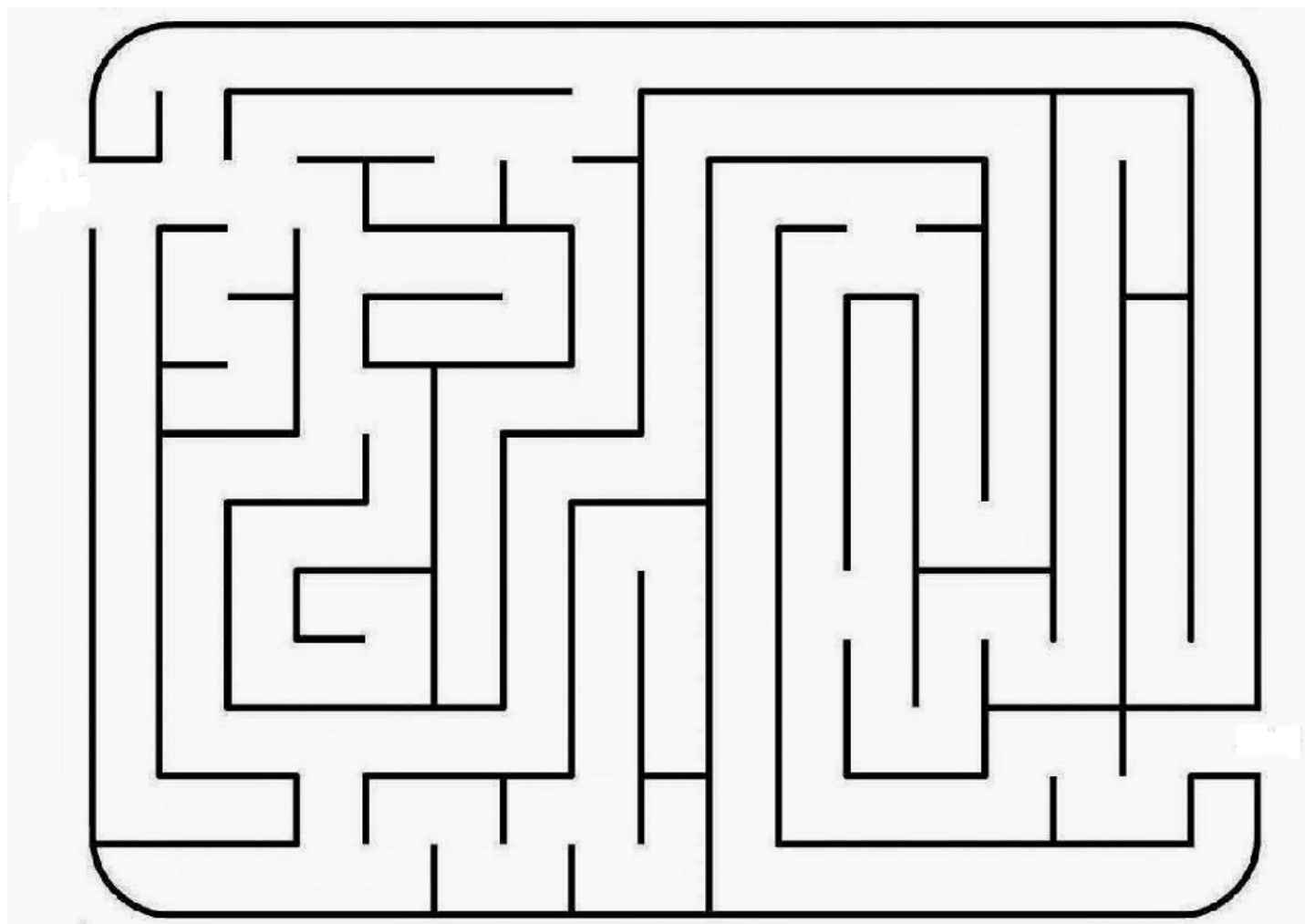
# TEMPLATE

## DROPLET MAZE

EASY:



HARD:





# CRAFT

## PUFFIN FOOD CHAIN MOBILE

Puffins are **predators**—they get energy by eating **prey** (other animals) like fish. Fish are also predators because they eat plankton (microscopic plants and animals). The movement of energy from one living thing to another in this way is called a **food chain**. Create your own hanging food chain by following the instructions below.

### WHAT DO I NEED?

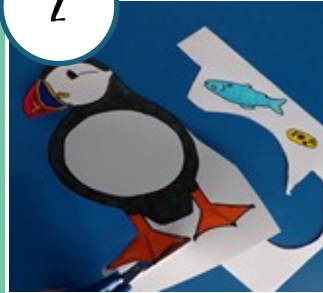
- Food chain template (copied or printed on paper or card)
- Scissors
- Glue & sellotape
- Colouring pencils or pens
- String or wool
- Hole punch or sharp pencil

1



Print out the template and colour in the puffin, fish and plankton. (There's no need to colour the centre of the puffin).

2



Cut out the puffin, fish and plankton.

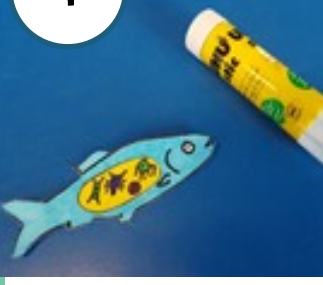
3



Poke a hole in the centre of the puffin and cut out the centre.

Ask an adult to help if necessary.

4



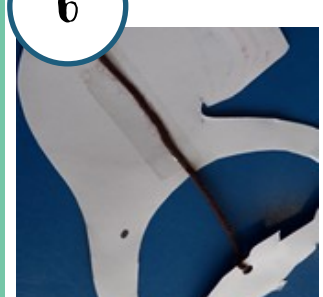
Stick the plankton onto the fish.

5



Using a hole punch, make a hole at the top of your puffin and the fish, then thread wool or string through both holes and tie at the end.

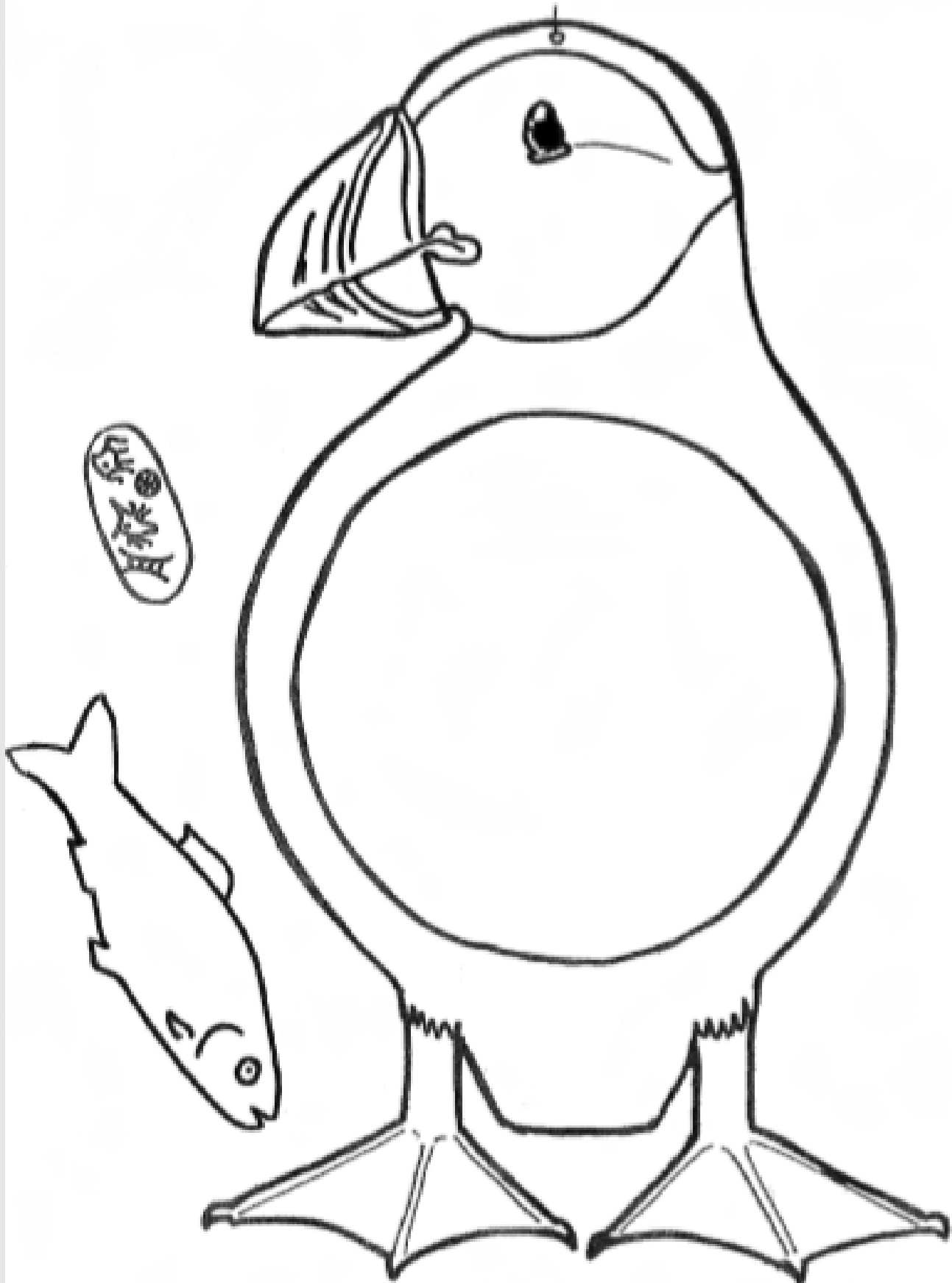
6



Make sure the fish hangs in the middle of the puffin's stomach, then stick the string down on the back of the puffin's head with sellotape.

# TEMPLATE

## PUFFIN FOOD CHAIN MOBILE



# DISCOVER

## FEEDING TECHNIQUES

Schools of fish are easy targets for hungry seabirds in the summer months. Did you know different seabirds hunt in different ways? Their bodies are specially **adapted** to help them catch their favourite fish.

### NORTHERN GANNET – THE DIVE BOMBERS



**Favourite fish:** Medium-sized fish, e.g. mackerel & herring.

**Feeding technique:** Gannets fly up high and dive head-first into the school of fish.

**Adaptations:** Beak is **streamlined** (long and narrow) to help it enter the water without injury. Air sacs close to the eyes act like air bags and cushion the force when hitting the water.

### ATLANTIC PUFFIN – THE SUPER SWIMMERS



**Favourite fish:** Small fish, particularly sandeels.

**Feeding technique:** 'Duck dive' from the surface then use their wings to swim and chase fish.

**Adaptations:** Beak is thick with jagged edges. Roof of the mouth has backward-facing spines for holding on to mouthfuls of slippery fish.

### ARCTIC TERN – THE SURFACE FEEDERS



**Favourite fish:** Small fish, e.g. Sandeels, herring and smelt.

**Feeding technique:** Dive from a small height and catch fish near the surface.

**Adaptations:** Beak is thin and pointy. Body is agile and can quickly dive to snap up fish.

### SENSATIONAL SANDEELS

Sandeels are small fish that are easy to digest and full of energy—perfect for growing pufflings!

Parent puffins fly out to sea to **forage** (search for food) for themselves and their chicks. When they find a school of sandeels, they catch multiple fish in their mouths and carry them back to their burrows. Puffins have been known to carry over 60 sandeels in their beaks at once!



# CRAFT



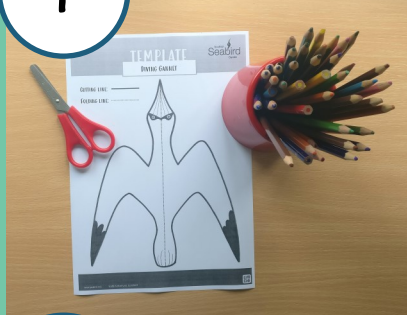
## DIVING GANNET

### WHAT DO I NEED?

- Scissors
- Colouring pencils
- Diving gannet template (copied or printed on paper or card)

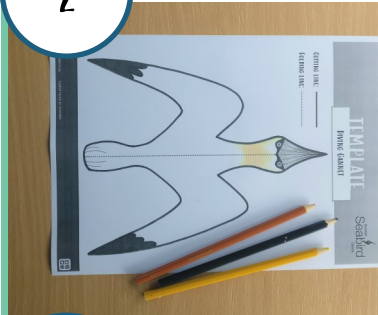


1



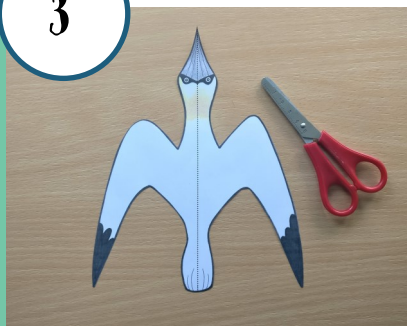
Print out the Diving Gannet template page. Make sure that you ask an adults permission before using the printer.

2



Colour in your template. You can use the picture above as a guide, or make up your own colours.

3



Carefully cut out the gannet, following the thick black line around the outside edge. Ask a grown-up to help you if this is tricky.

4



Fold your diving gannet along the dotted line. You should be able to stand it up on a flat surface!

### DID YOU KNOW...

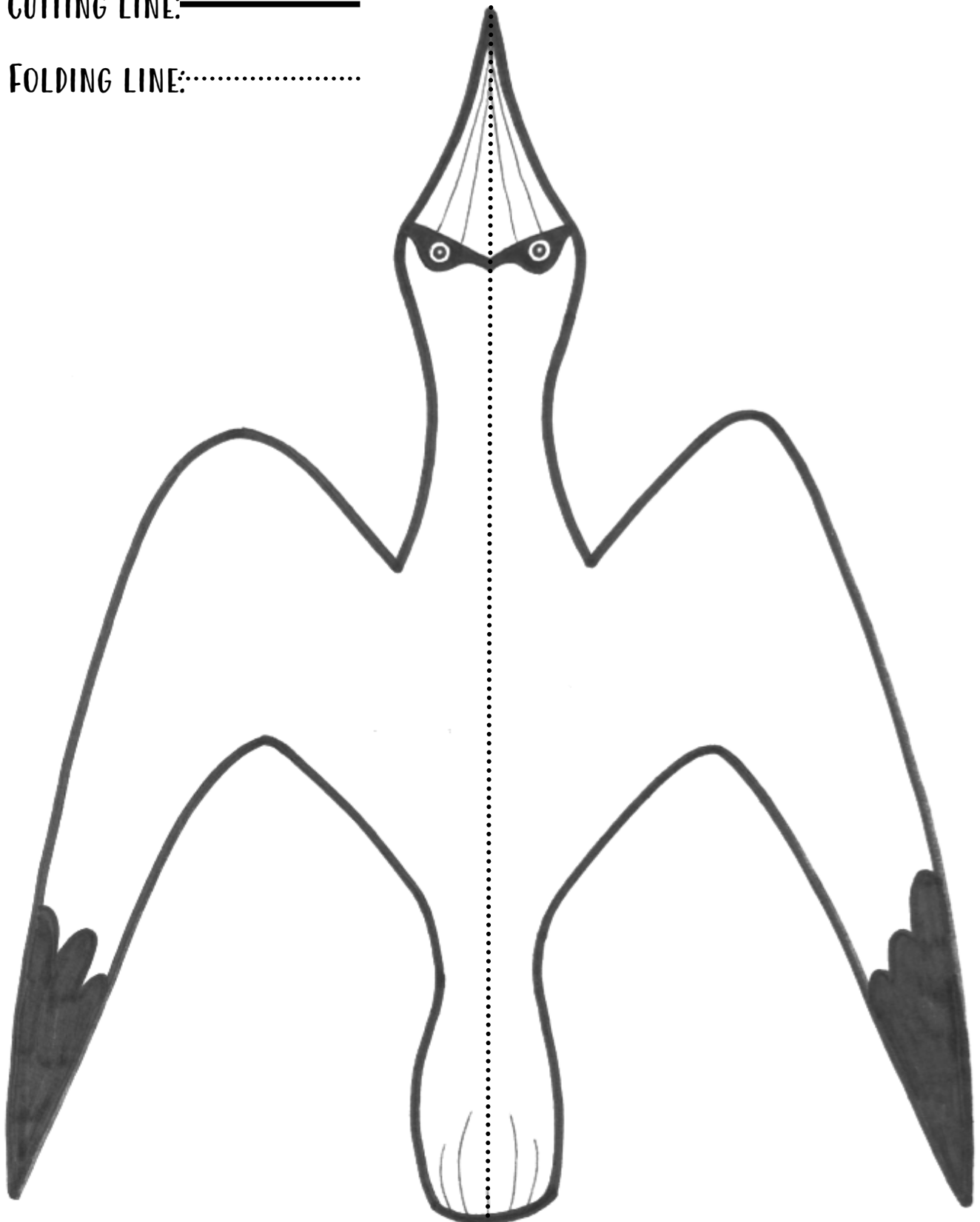
- Diving gannets can hit the water at speeds of up to 60 miles per hour!
- They have special air-sacs hidden in their head and chest to cushion the impact.
- Gannets have a 'membrane' (like a clear eyelid), which protects their eyes when they are diving .

# TEMPLATE

## DIVING GANNET

CUTTING LINE: —————

FOLDING LINE: .....



# CRAFT

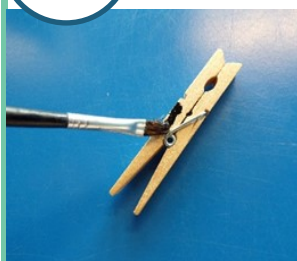


## HUNGRY HUNTERS

### WHAT DO I NEED?

- Scissors
- Wooden clothes peg
- Paints
- Coloured card or paper
- Glue
- Paintbrush

1



Paint your peg the colour of your chosen sea creature (anything with a mouth will work!). Leave it to dry. You can also add patterns and other colours if you like.

2



Cut out any fins, tails, wings, flippers or legs that your creature needs. You can use coloured card or paper for this, or colour in white paper.

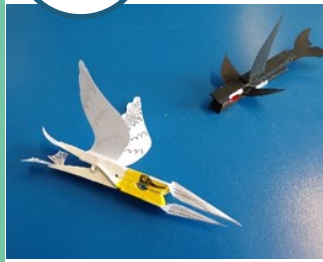
3



Glue the body parts onto the peg.

Hint: Use pictures of animals to get them in the right places)

4



If you have any spare pegs, why not try some different sea creatures too?

### WHAT DOES YOUR ANIMAL EAT?

Is your animal a...

**Carnivore**—An animal that eats another animal?

**Herbivore**—An animal that eats plants?

**Omnivore**—An animal that eats both animals and plants?

*I'm a carnivore! I have sharp teeth for eating fish, shellfish, squid and octopus.*

