Girlguiding North West England

# Sea Savers

## Challenge

SEA LIFE

Girlguiding
North West England

# Contents

# Introduction

Welcome to our challenge pack! We know that conservation and environment is important to our members and so we have launched Sea Savers in partnership with SEA LIFE Blackpool. This pack is informative, creative and full of fun for all sections to take part in.  You will see throughout where activities have suggestions on how to make them more engaging for Guides and Rangers.

In this pack you will learn all about conservation. Our pack will teach you what is in our oceans and plant life, eco systems and food chains and how we can look after our oceans. Do you want to be a saver of the ocean?

You will need to complete two activities from each theme in order to earn your badge, six activities in total.

In the 2023 Girls' Attitude Survey produced by Girlguiding UK, over 50% of girls cited conservation and the impact of climate change on the environment as an issue that worries them some or most of the time. We hope that this challenge pack supports our members to feel empowered to take positive action.

https://www.girlguiding.org.uk/globalassets/docs-and-resources/research-and-campaigns/girls-attitudes-survey-2023.pdf

Together with our partner charity, the SEA LIFE TRUST, our aim is to champion the ocean and its amazing animals. Through meaningful marine conservation, we strive towards a world where our ocean is healthy, protected, and full of diverse life. So, thank you for taking part in this conservation challenge pack to become a saver of the ocean - collectively, we can help ensure an amazing future to all who swim, crawl and glide within our oceans.

We'd really love to see what you get up to as part of the challenge.
Be sure to send your pictures to northwesthq@girlguidingnwe.org.uk or connect with us on social media:

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# What's in the ocean and plant life

## Activity 1 - Ocean diorama

**Background:** Create an ocean scene out of a shoebox. Show one another or other patrols where different sea creatures live. What different species can you create? Talk about what you think is in our oceans

**Time:** One unit meeting

**Equipment:**

- Shoe boxes (either one per patrol or one per individual)
- Coloured paper
- Craft supplies (coloured pens, glue, scissors)

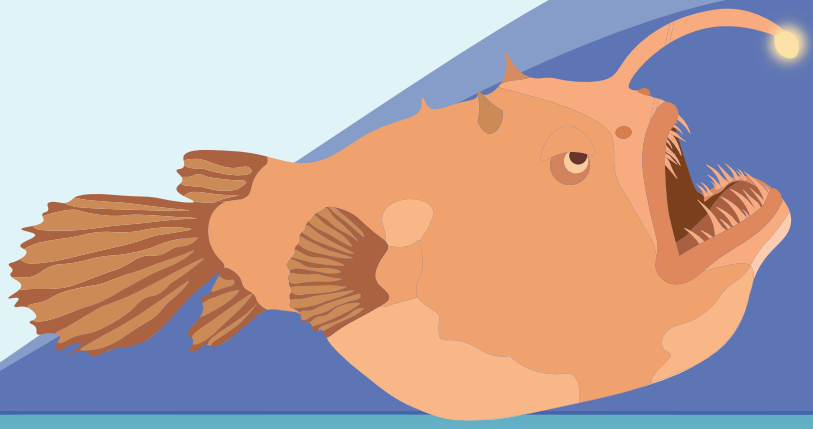
**Method:**

1 Begin by painting or gluing coloured paper to the interior of the shoe box to make a blue background

2 Decorate the shoe box using the available supplies; think about the seabed, seaweed, marine animals

3 Can you identify and label the sea creatures?

**Adaptations**: Guides/Rangers: In groups, create the layers on the ocean in each shoe box, stack them onto one another, and present to the group what is in each section of the ocean



### Aqua fact

**Anglerfish live in the deep sea. They have a bioluminescent lure that they use to attract other fish and sea creatures towards them. Once the fish is close enough, the anglerfish then snatches them up with their strong jaws and sharp teeth.**

# What's in the ocean and plant life

## Activity 2 - Ocean catch

**Background:** This is a game for girls to make and play together as a patrol or as a unit

**Time:** 45 minutes

**Equipment:**

- Paper clips
- String
- Print out of sea creatures (pages 6-9) per girl
- Paint or colouring pens

**Method:**

1 Give each girl a sea life template to colour and cut out

2 Affix a paper clip to the end of each sea creature

3 Cut a length of string for each girl and tie another paper clip to the end as shown in the image below- this is their hook to play the game

4 Place each sea creature on the floor. Girls have 5 minutes to hook as many of their sea creatures as they can

5 After 5 minutes, add up the points from the creature score list, below. Who has the most points?

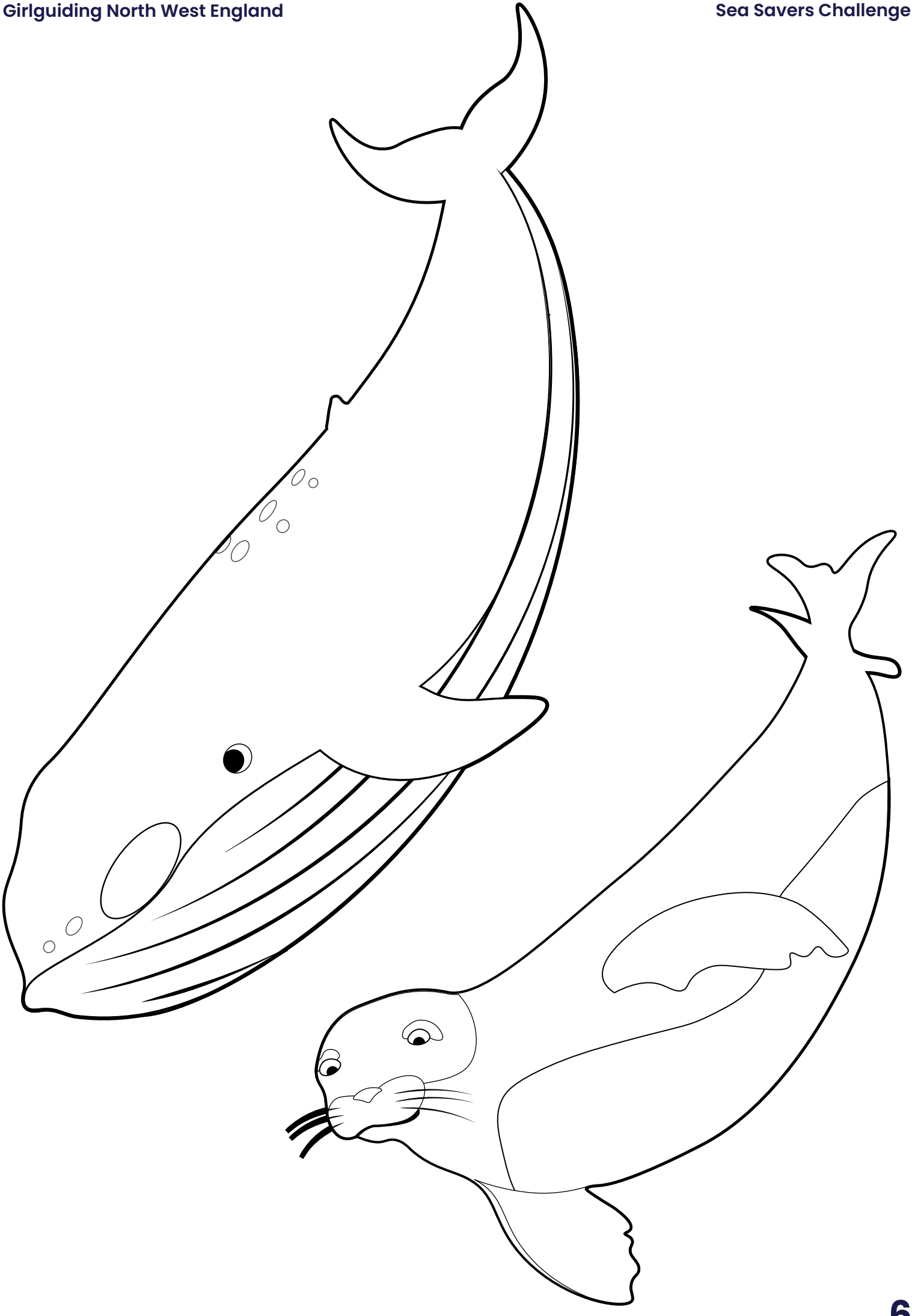
**Adaptations**: Guides/Rangers can play this game as a unit. All sea creatures are laid on the floor and anyone can hook anyone's sea creature. The person with the most points wins

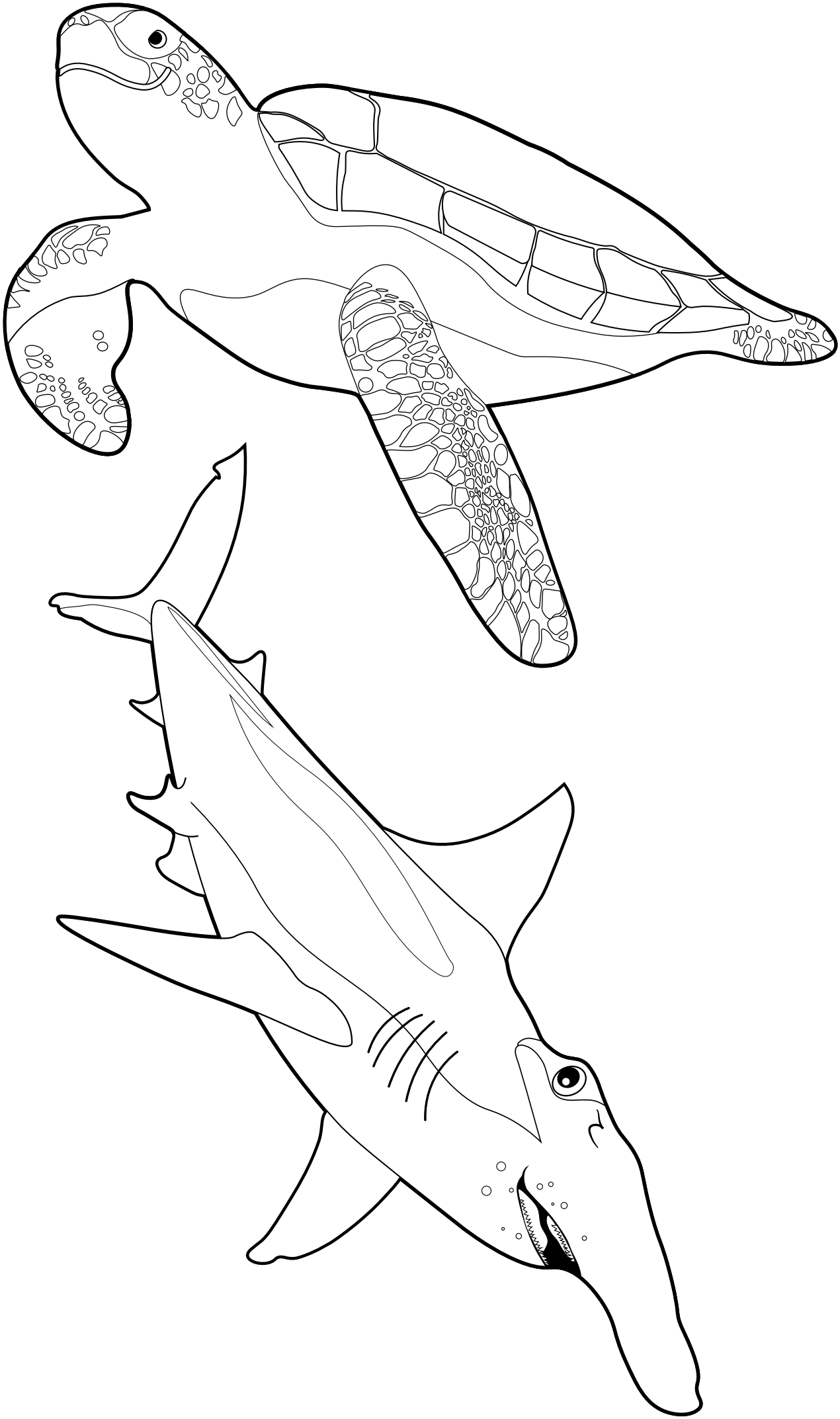
### Aqua fact

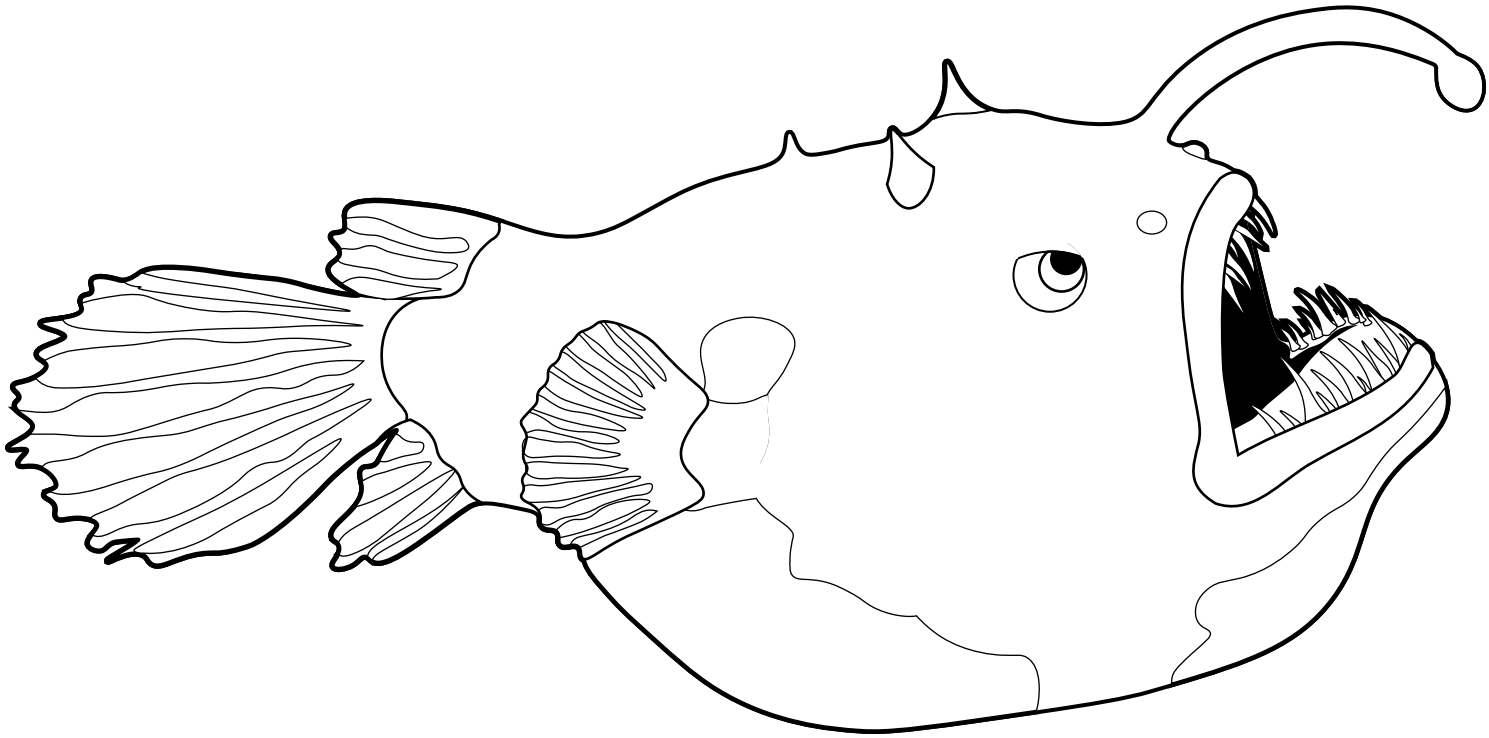
Coral reefs can be found in shallow tropical waters and are known as the ocean's busiest habitats. They only cover 0.1% of the whole ocean, but a quarter of all marine species call coral reefs their home.

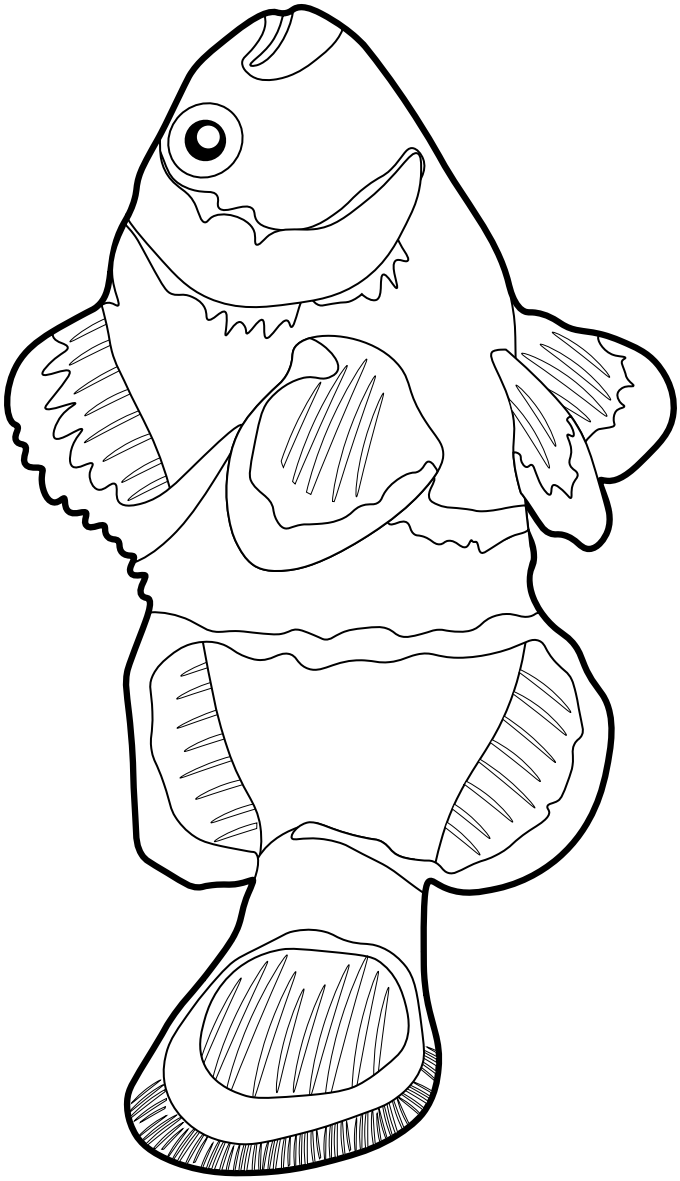
**Creature Scores:**

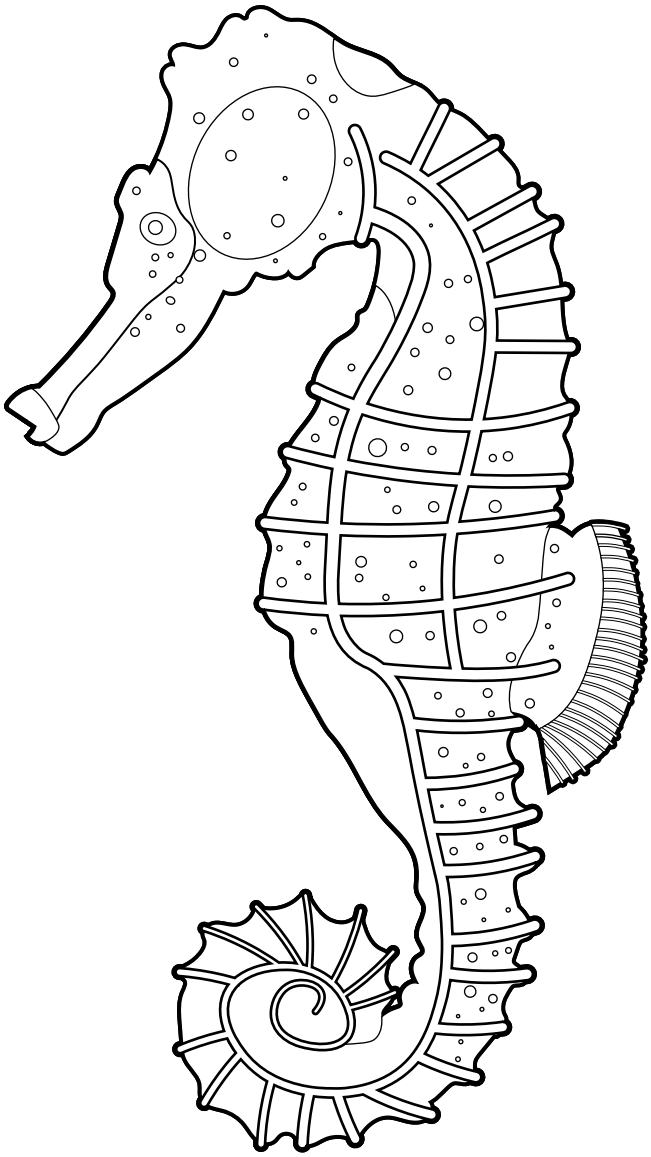
Whale - 3 points
Seal - 4 points
Turtle - 6 points
Hammerhead shark - 1 point
Seahorse - 5 points
Seaweed - 10 points
Angler fish - 8 points
Clown fish - 2 points
Octopus - 7 points
Yellow tang fish - 9 points

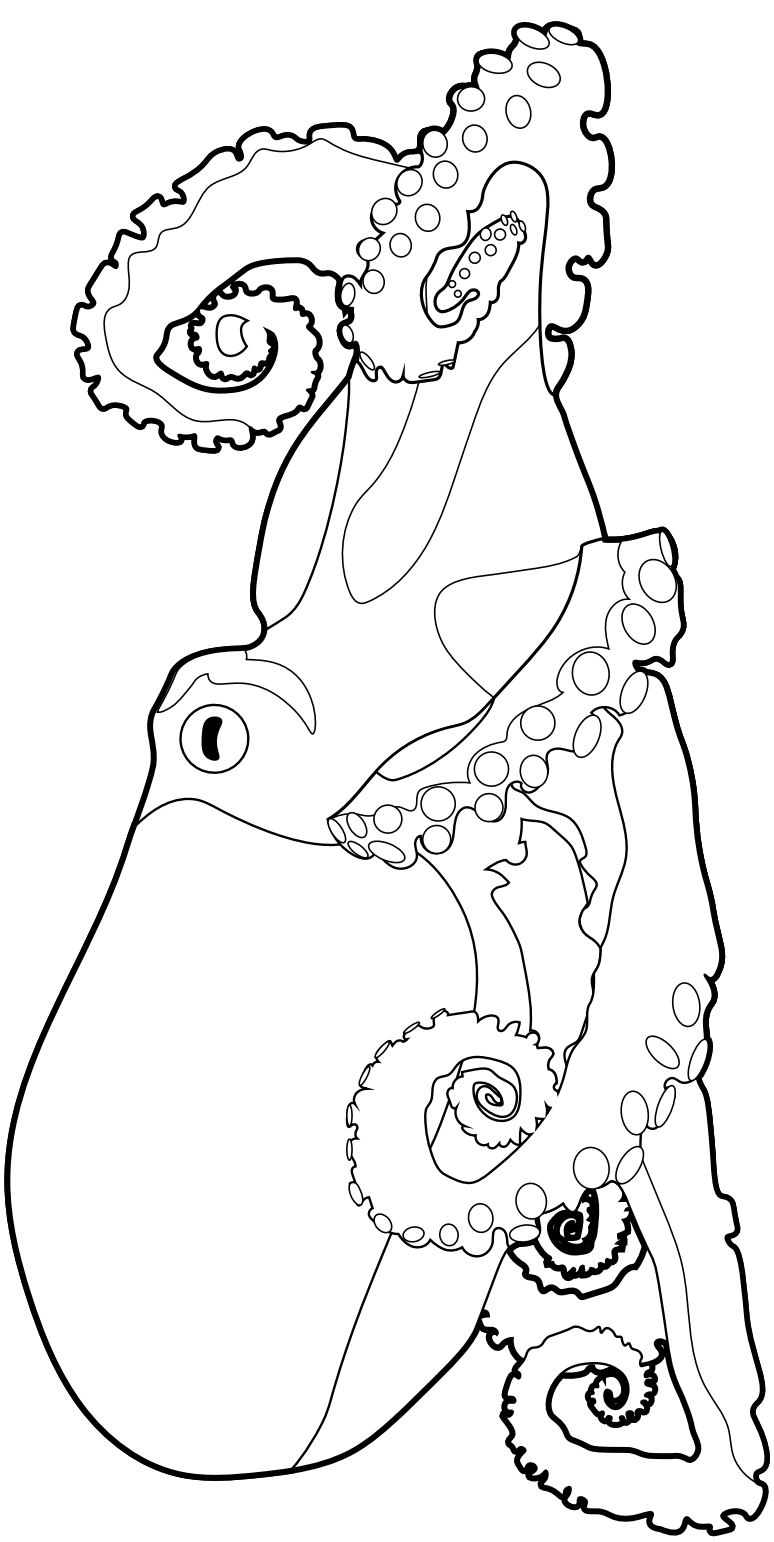


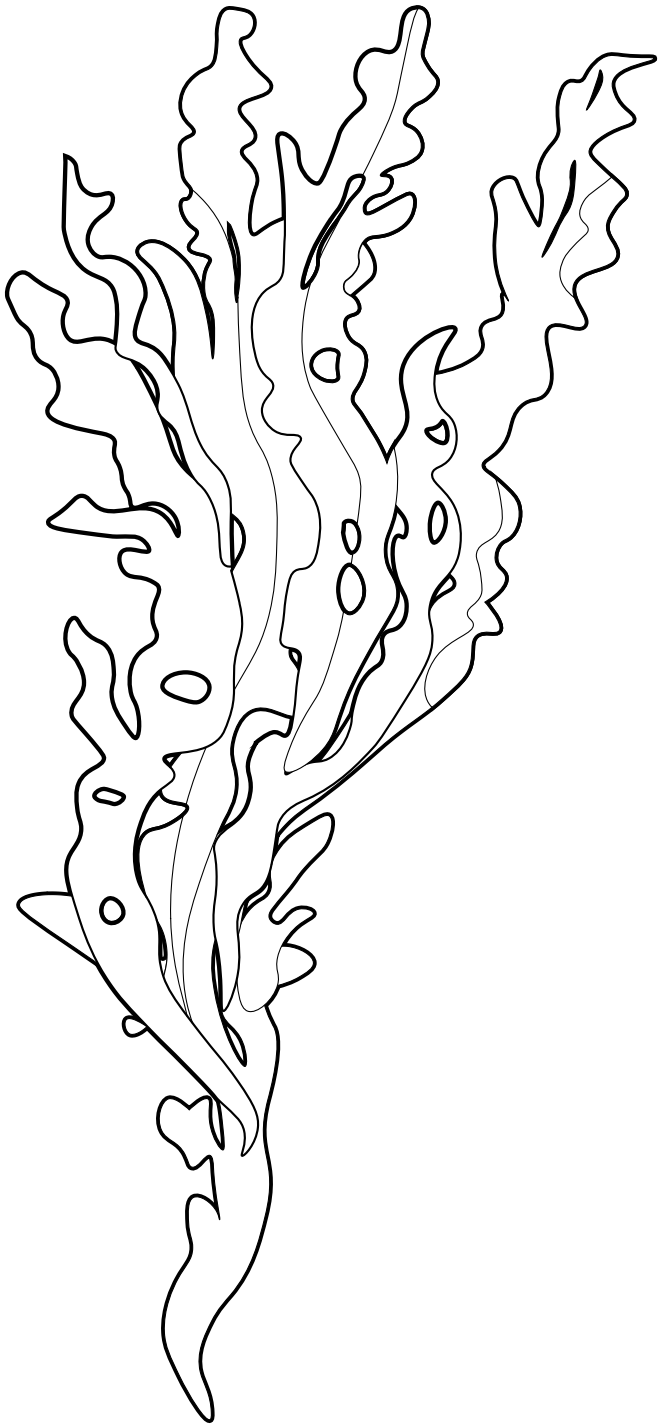


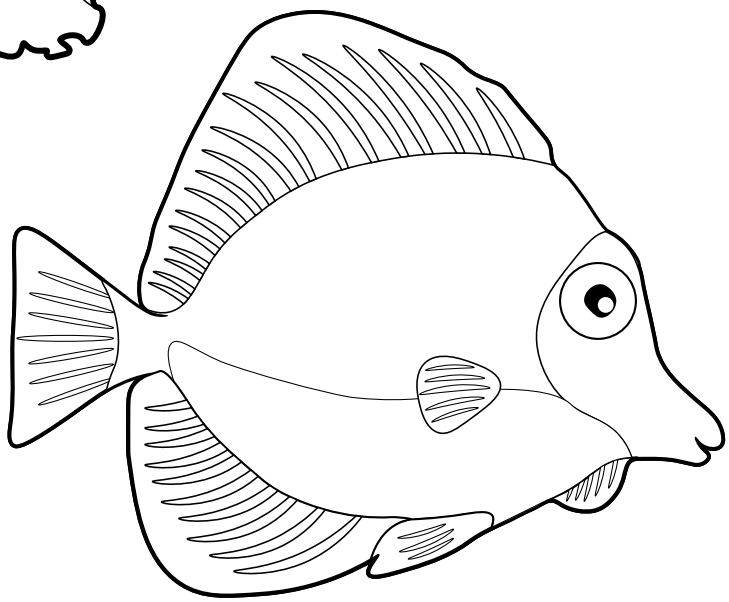












# What's in the ocean and plant life

## Activity 3 - A whaley good tune

**Background:** Whales are important because they help keep the ocean's balance in check. They eat certain animals, which stops those animals from getting too many and causing problems. Also, when whales poo, it helps tiny plants in the ocean grow. When whales die, their bodies provide food for other sea creatures. So, whales help keep the ocean healthy and full of life

Whales communicate by song. These are not just random noises, but rather complex patterns of sounds that serve various purposes. For instance:

Communication: Whales use their songs to communicate with each other over long distances. These songs can convey messages about mating, feeding grounds, or even warning signals

Identity: Each species and even individual whales within a species have their own distinct songs. This helps them identify and locate each other in the vast ocean

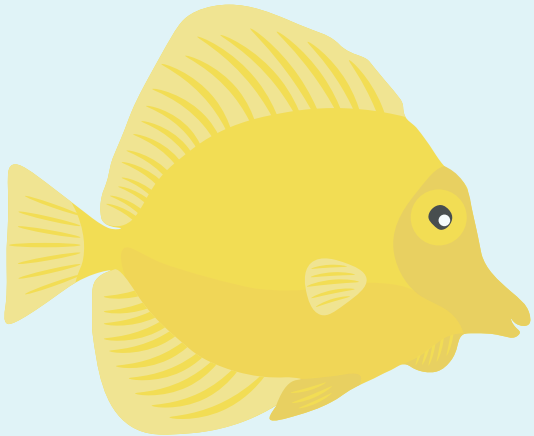
Cultural Transmission: Whales learn their songs from other members of their pod or group, indicating a form of cultural transmission similar to human societies

Complexity: Whale songs are incredibly intricate, often consisting of sequences of moans, cries, and other sounds. Some species, like the humpback whale, have elaborate and evolving song structures that can last for hours

**Time:** 30 minutes

**Equipment:**

- Pen and paper



**Method:**

1. In patrols, girls need to work together to create a code in whale song. This could be different sounds for each letter or words, or sentences
2. Make sure they have time to practice together so that they all know what the different sounds mean
3. Split the patrol in two. The teams then take turns writing a secret message and trying to communicate it to the other team using their whale song code
4. Can the teams work out what each other were trying to say?

# What's in the ocean and plant life

## Activity 4 - A taste of the ocean

**Background:** It is not known the exact number of species that live in our oceans, however we do know that the number of species is decreasing. In this activity girls are tasked with making or baking a sea creature that is currently at risk of extinction

**Time:** One unit meeting

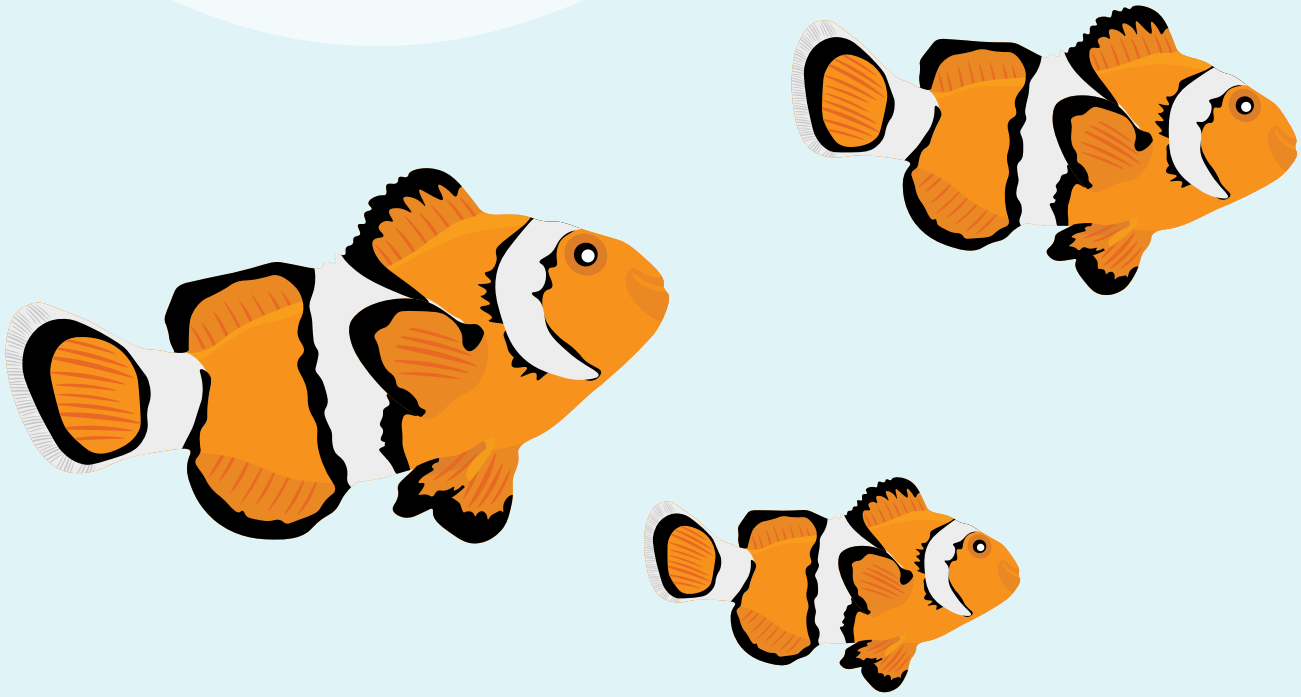
**Equipment:** Note to leaders: Girls can choose whether they want to make or bake for this activity. For example, they could make bread, cookies, peppermint creams or fondant icing cake decorations and shape them into endangered sea creatures

Over the page are the methods for basic shortbread and peppermint creams

**Method:** Choose from the list of endangered sea creatures:

1 Coral reef
2 Sea turtle
3 Hammerhead shark
4 Manta ray
5 Whale shark
6 Fur seal
7 Vaquita porpoise

**Adaptations**: Guides/Rangers can try to make their models as detailed as possible using various baking tools, decorations and techniques



# What's in the ocean and plant life

## Activity 4 - A taste of the ocean continued

### Shortbread (makes 20 small biscuits)

- 150g plain flour
- 100g butter, chilled and cubed
- 50g caster sugar
- Icing sugar
- Food colouring

**Step 1**
Heat the oven 170C/150C fan/gas 3. Put the flour, butter and sugar into a mixing bowl. Use your hands to combine the ingredients until the mixture looks like breadcrumbs, then squeeze until it comes together as a dough

**Step 2**
On a lightly floured surface, use a rolling pin to roll out the dough to ½ cm thick. Cut out the sea creature shape that you are making. Place on a lined baking tray. Use a fork to create imprints

**Step 3**
Bake for 15-20 mins until golden brown. Remove the shortbread sea creatures from the oven and leave to cool on the tray for 10 mins

**Step 4**
Once cooled, decorate your sea creatures with icing

### Peppermint creams (makes 15)

- 1 free-range egg white
- ½ lemon, juice only
- 1 tsp peppermint flavouring
- 425g icing sugar, plus extra for dusting
- Food colouring

**Step 1**
Whisk the egg white in a bowl until stiff peaks form when the whisk is removed. Slowly whisk in the lemon juice, peppermint and icing sugar to a stiff paste

**Step 2**
Add your chosen food colouring (if using) and mix in to the paste

**Step 3**
Tip the peppermint mixture onto a work surface dusted liberally with icing sugar

**Step 4**
Mould your peppermint paste into the shape of your chosen sea creatures and chill in the fridge for 1 hour, or until the mixture has set

**Adaptations**:
Guides/Rangers can try to make their models as detailed as possible using various baking tools, decorations and techniques

# What's in the ocean and plant life

## Activity 5 - Our creatures

**Background:** Create a presentation on your own or in patrols about different sea creature or plant life that live in our oceans. Think about how many of them there are, are they endangered, how do they survive in the ocean, where do they live and how can we help? Once created, present to the rest of the group or patrol

**Note to leaders:** Before the end of a unit meeting, either assign each girl or patrol a different sea creature and ask them to go home and research it for the following week

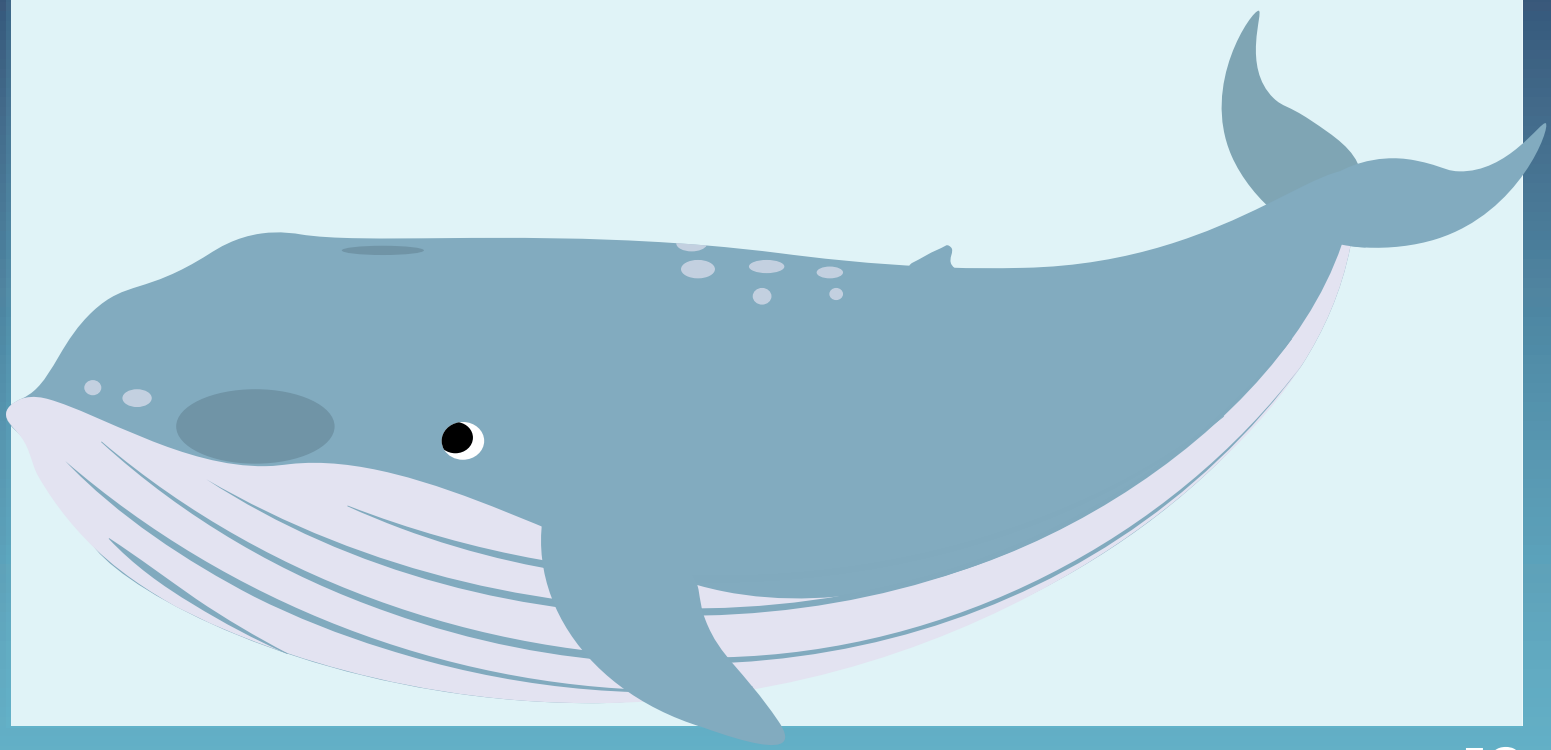
**Time:** 30 minutes to create, and 5 minutes to present per individual or patrol

**Equipment:**

- Large piece of paper
- Pens
- Scissors
- Glue
- Any research they have done prior to the unit meeting
- Access to the internet

**Aqua fact**

**A blue whale's tongue alone can weigh as much as an elephant—its heart as much as an automobile.**



# Eco systems and food chains

## Activity 1 - Ocean layers eco systems

**Background:** Each layer of the ocean is called an ocean zone. These zones are divided up based on how much light each zone receives. In groups or patrols, create the ocean zones and talk about how there are different plants and animals that live in each of the ocean zones. Most of them are in the sunlight zone
Then either draw or write what creatures might live in each zones and stick them to your ocean layer

**Time:** Rainbows - one unit meeting
Other sections - 30 – 50 minutes

**Equipment:**

- A2 paper
- Tissue paper or paint
- Glue or tape
- Marker pens
- Paper

**Method:**

1 In patrols or in a group place your A2 piece of paper in a landscape position

2 Either paint or with tissue paper glue the colours of the ocean's zones in order on your A2 piece paper

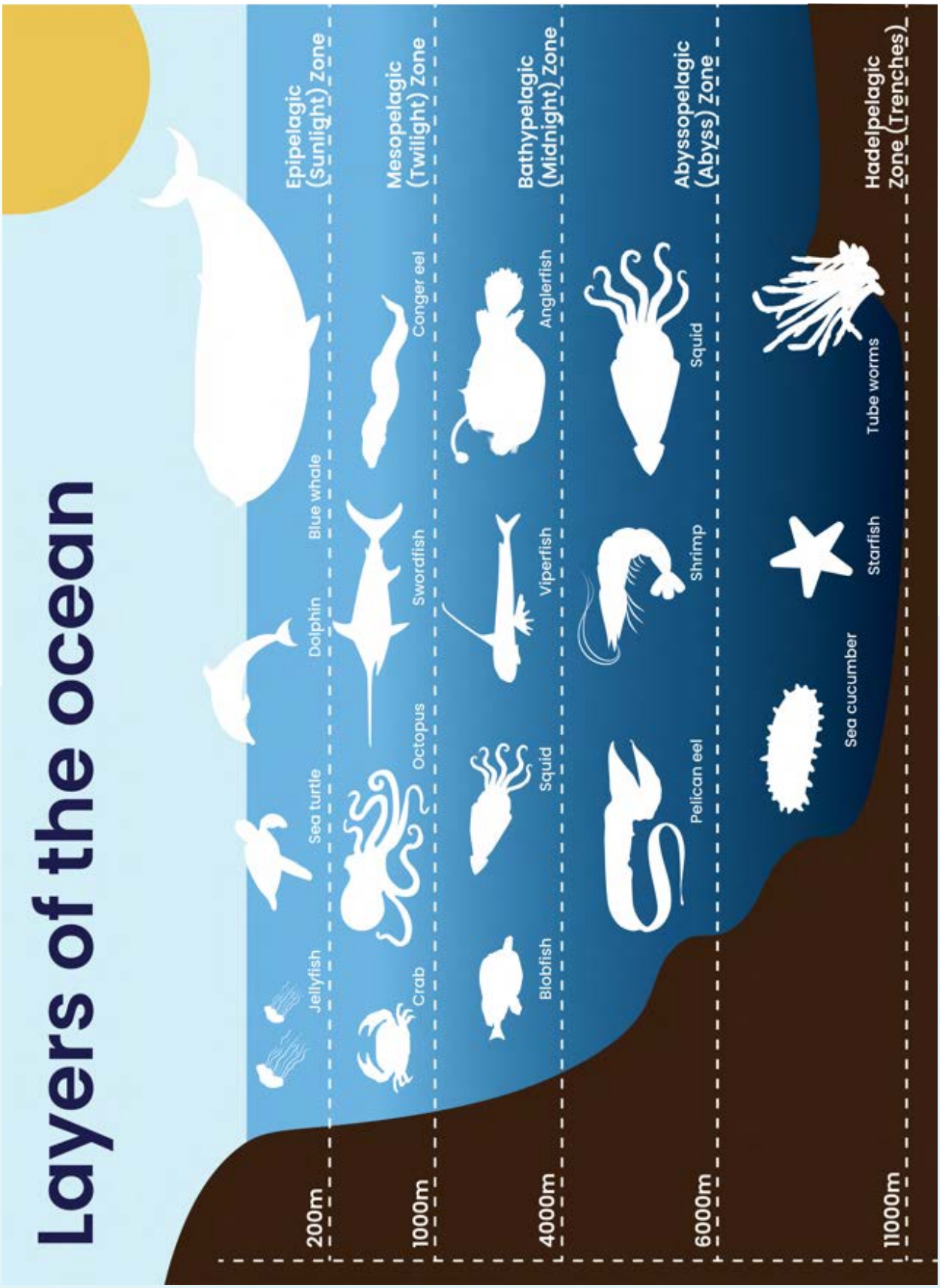
3 Label each ocean zone

4 Either draw or write down your plants or animals that may live in the ocean zones

5 Stick each creature in the corresponding ocean zone

# Eco systems and food chains

## Activity 1 - Ocean layers eco systems continued



# Eco systems and food chains

## Activity 2 - Sharks vs Fish

**Background:** This game demonstrates how important balance within ecosystems is. Human activity, through the form of large-scale fishing or shark hunting, can disrupt this balance, and therefore have a significant impact on the entire food chain

**Time:** 15 minutes

**Equipment:** None required

**Note to leaders:** In the same way that the game only works well if there are a certain number of sharks and fishes, marine ecosystems require a certain balance between different organisms to function

**Method:** The game starts out like Bulldogs

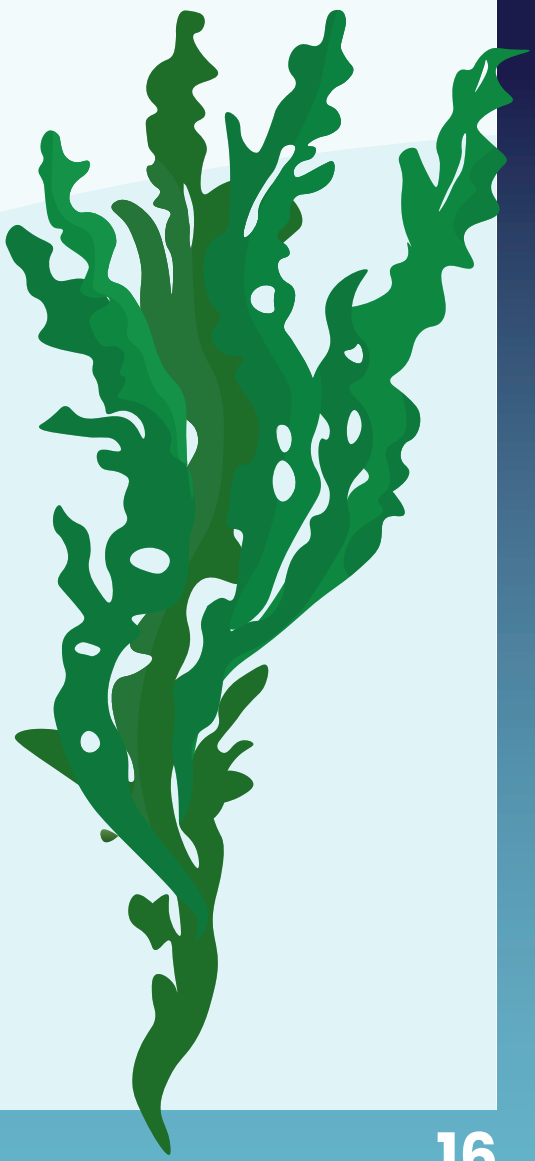
1 Three people are 'sharks' and everyone else (the fish) must run from one side of the room to the other without being tagged. If they are tagged, they become sharks. See how many times the fishes can cross the room until everyone is out

2 Repeat, but changing the ratio of sharks to fishes

Having no sharks is problematic as it would mean the game is unplayable. In a marine ecosystem, shark hunting results in the overpopulation of fish, which can damage coral

3 Not enough fish is also problematic as the sharks don't have enough food and the game ends too quickly

4 Discuss with the group what ratio of sharks to fishes worked best for the game and why



# Eco systems and food chains

## Activity 3 - Food chain

**Background:** To understand food chains in marine ecosystems. This time we will be creating a fun paper collage of a marine food chain

**Time:** One unit meeting

**Equipment:**

- Coloured paper/card, scraps, old magazines etc
- Scissors
- Pens and pencils
- Glue sticks
- References/books/internet access to look at pictures of sea creatures

**Method:**

1 Start with your biggest piece of paper and lightly fold this down the length. Making sure we're using centre folds will help us create this collage

2

2

2 Our **primary predator** in the food chain is the polar bear. Fold a piece of paper in half and with the crease in the centre, draw on your half polar bear head with a big open mouth

3 Cut out the shape you have drawn, making sure to keep the paper folded in the centre whilst you do. When you have finished cutting you should open out a fearsome polar bear head shape

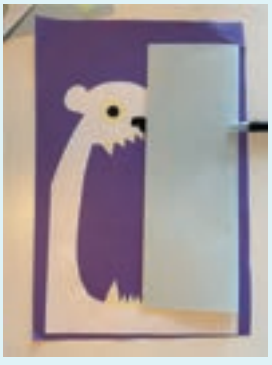
3

4

4 You can now decorate the polar bear using a similar technique, folding paper in half to create its features. Glue the features down to the bear's face but DON'T glue the bear down to your main background yet, we will do this at the end. You can use pens and pencils to add any details you like

5 To make the next level in the food chain, the **secondary predator** is a sea lion. We will get another colour of paper and fold this down the length. We will then need to measure the space we have in the bear's mouth to see how big we can draw the seal's head

4



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# Eco systems and food chains

## Activity 3 - Food chain continued

6 Draw and cut out your sea lion head and decorate.

7 Repeat this process for your **secondary consumer**, the fish, remembering it needs to be smaller and fit inside the mouth of your sea lion

8 And now create your **primary consumer**, krill

9 Your last creature is the **producer**, which in this food chain, is phytoplankton

10 Once all elements of your food chain are created, you can assemble them and glue them to your main card/paper. You may find it easier to glue the two largest creatures together first, and this will help you see how to arrange them in their final positions before gluing them to the base sheet

6

8

10

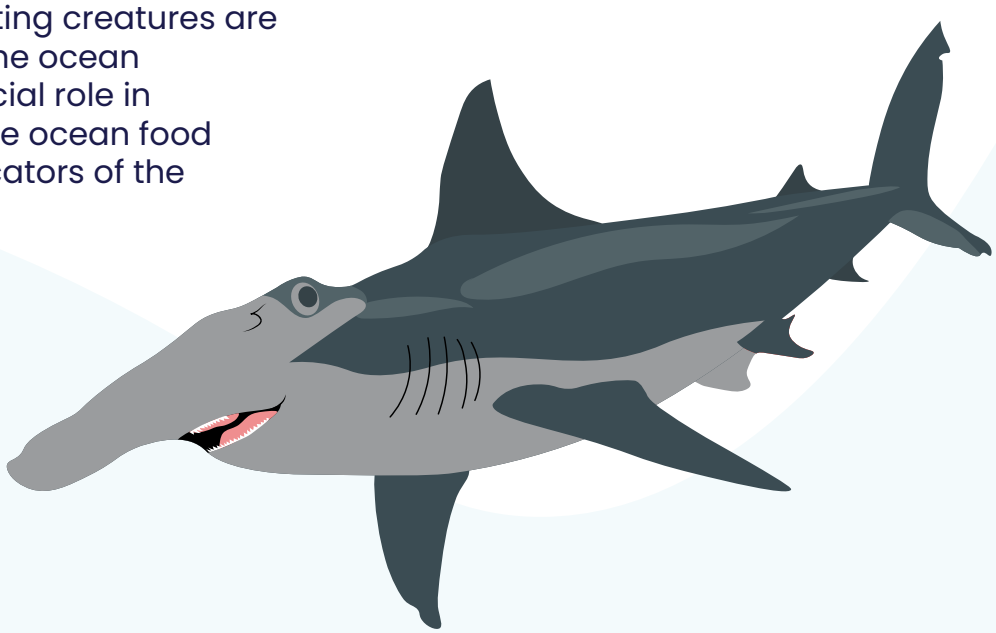
**Tips**: You may find it easier to work from A3 size as the main sheet

In patrols/groups, give each girl one of the food chain creatures as their creature to create - they will need to work togeher to make sure they are the right sizes

# Eco systems and food chains

## Activity 4 - Fish are friends not food

**Background:** Sharks are one of the most misunderstood creatures on the planet. Often portrayed as vicious man-eaters in popular media, these fascinating creatures are actually an essential part of the ocean ecosystem. Sharks play a crucial role in maintaining the balance of the ocean food chain and are important indicators of the health of our oceans



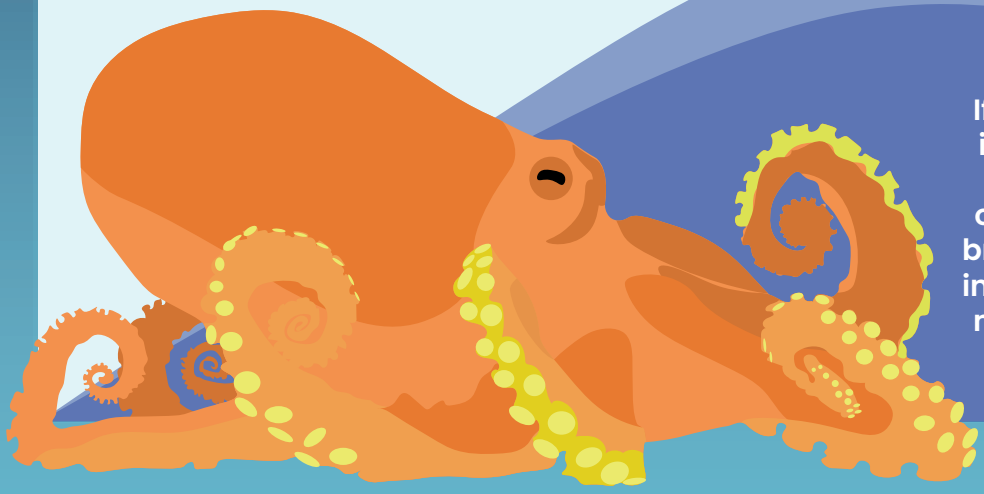
**Time:** 30 minutes

**Equipment:**

- Paper
- Scissors
- Pens
- Glue
- Food chain print out

**Method:**

1. On a plain piece of paper, draw the outline of a shark
2. Cut out the food chain provided below
3. Put the food chain in order inside the outline of your shark
4. Get your unit leader to check the food chain is correct

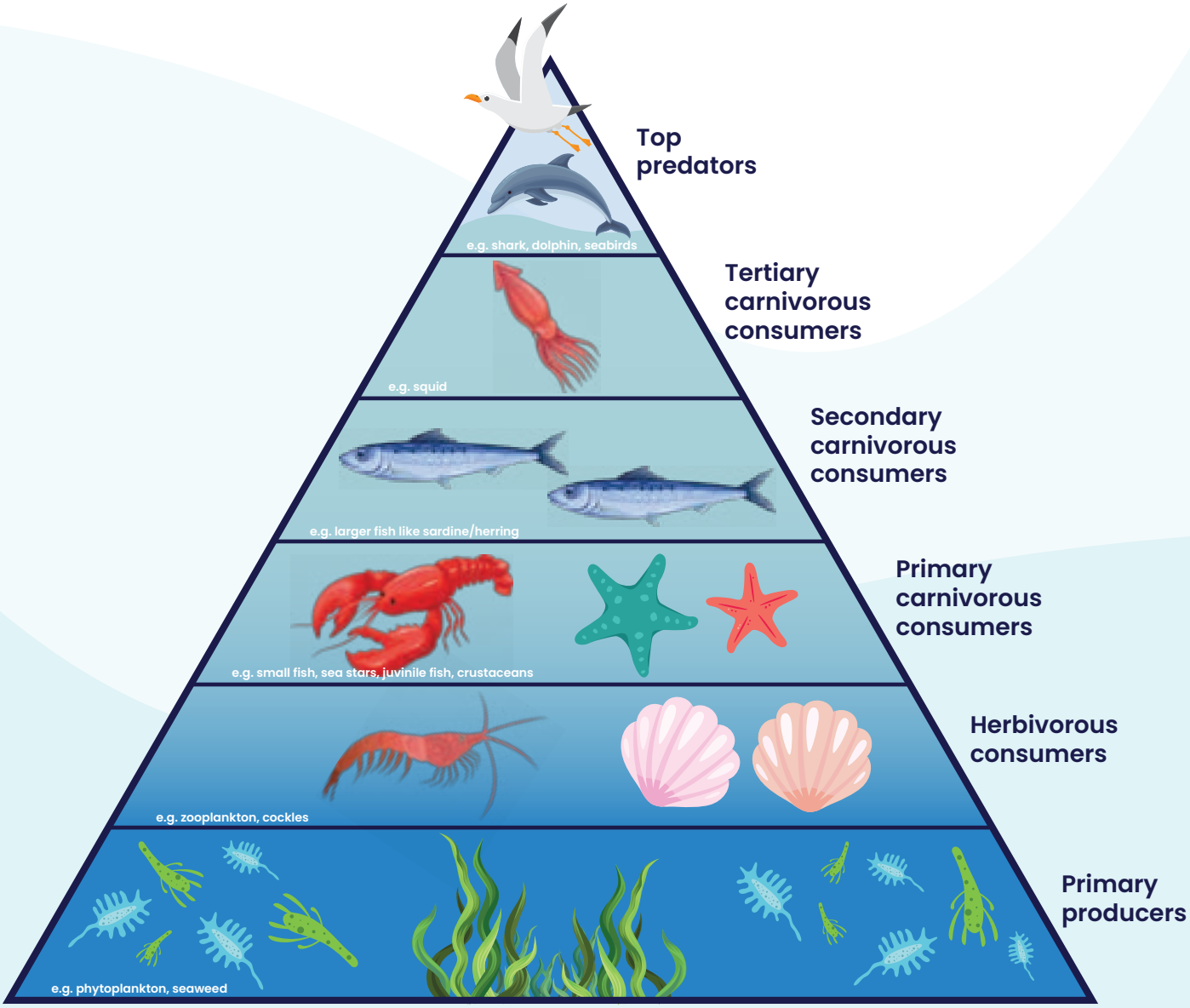


### Aqua fact

If threatened, octopuses shoot an inky fluid that darkens the water, confusing the aggressor. The octopus can also change to gray, brown, pink, blue, or green to blend in with its surroundings. Octopuses may also change colour as a way to communicate with other octopuses.

# Eco systems and food chains

## Activity 4 - Fish are friends not food continued




## Marine Food Chain

# Looking after our oceans

## Activity 1 - Ocean acidification

**Background:** Pollution of our oceans is affecting our ocean's pH levels and marine life. The ocean has a stable pH of 8.1, allowing fish, coral and other marine life to live happily. However, as our oceans become polluted, the pH of the ocean is becoming more unbalanced, causing an unhappy environment for the marine life that lives there. This activity will show how polluting our oceans is changing our oceans

**Time:** One unit meeting

**Equipment:**

- 1 red cabbage (this will create your pH indicator)
- 7 plastic cups
- Water
- Salt
- Bicarbonate of soda
- Vinegar
- Teaspoon

Other items you may want to use:

- Washing up liquid
- Lemon juice
- Fruit juices
- Sugar
- Lemon juice
- Cleaning fluid (bleach under supervision)
- Different types of water, e.g. sea water, puddle water, water from different taps

**Method:**

1 Before your unit meeting, cut the red cabbage into small pieces and boil. Save the water, this will act as your pH indicator

2 Once your meeting has started, add 100ml of warm water to your 7 plastic cups. Next, add 1 teaspoon of salt to each cup and stir until the salt is dissolved

3 Next add 1 teaspoon of pH indicator into each cup of salt water, the liquid should turn purple

4 Move 4 of your cups to the side, you won't need these until later

5 Now you should have 3 cups in front of you. One will act as your base, it should be purple, so you don't need to add anything to this one

# Looking after our oceans

## Activity 1 - Ocean acidification continued

6 Add 2-3 teaspoons of bicarbonate of soda to one cup, this should turn it blue/green

7 Next, add 2-3 teaspoons of vinegar to the remaining cup, this should turn it pink/red

8 Now, you have the beginnings of your pH scale - you should have 3 cups in front of you, one blue/green, one purple, and one pink. This is your pH scale

9 You are going to use the spare cups you prepared earlier to identify how different substances affect the pH, and placing them onto your pH scale. Why not try adding washing-up liquid or lemon juice into the cups and seeing where this sits on the pH scale?

Here's some examples of things you could add and test the PH of: (Note: add around one teaspoon)

- Washing up liquid
- Cleaning fluid
- Sugar
- Lemon juice
- Fruit juices
- Toothpaste

It might also be interesting to think about how, as climate change occurs, carbon dioxide emissions are increasing. This causes the oceans to become more acidic, harming the life that lives there. Why not test some water samples from around your local area and see how they measure up on your scale

**Red cabbage indicator colour chart**

| pH | pH under 7 = acid | | | | pH above 7 = base | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 4 | 6 | 8 | 10 | 12 | 14 |
| Colour | | | | | | | | |
| | Red | Pink | Violet | Purple | Indigo | Blue | Green | Yellow |

# Looking after our oceans

## Activity 2 - Free in the sea

**Background:** About 88% of our the worlds oceans services are covered in plastic waste. This activity based on Hungry Hippos, is designed to demonstrate to girls how dangerous and difficult plastic is to sea creatures

**Time:** 20 minutes

**Equipment:**

- Recycling
- Small teddy
- Net or rope (if you have one)

**Method:**

1 In your unit collect recycling from home and ask girls to bring a small teddy to represent a sea creature

2 Spread all recycling over the unit meeting floor, and ask girls to place their small teddy amongst the plastic

3 Split into patrols or groups of four

4 Three minutes to collect as many sea creatures as possible

5 And like hungry hippos go and save a sea creature

6 Play this as many times as you like, and recycle your rubbish after

### Aqua fact

**Seahorses have flesh-covered bony plates instead of scales, eyes that work independently of each other, and prehensile tails—used to grip holdfasts on the seafloor to avoid drifting and, during courtship, to link to each other.**

# Looking after our oceans

## Activity 3 -Save our oceans

**Background:** Go and visit a local park, pond, river, beach, or a community area and do a litter pick. By doing this you are reducing the rubbish that will make it to our oceans. Every little helps

**Time:** One unit meeting

**Equipment:**

- Bin bags
- Gloves
- Litter picker

**Method:**

1 Select your litter pick location

2 Plan a unit meeting dedicated to litter picking

3 Gather your equipment

4 Head off to do the litter pick!

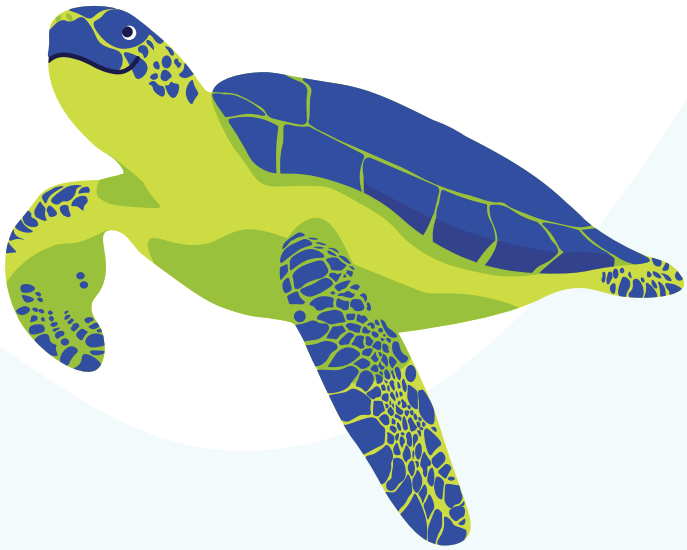
**Adaptations:** Guides and Rangers – after your litter pick, please discuss in groups how each bit of litter can affect our oceans and what animals can it be harmful too

**Competition**
Send in photos of your unit collecting rubbish plus the amount of bags you filled and number of girls taking part to northwesthq@girlguidingnwe.org.uk by 31 July 2024. The unit that collected the most will win a free visit to SEA LIFE Blackpool! GGNWE will help towards travel expenses.

# Looking after our oceans

## Activity 4 - Oil spill

**Background:** An oil spill is when sea water is contaminated with oil. This can be human error or an accident. Oil spills can be massively damaging to marine wildlife and also humans if the oil gets into food chains



**Time:** 30 - 50 minutes

**Equipment:**

- Water
- Blue food colouring - to make the water stand out a bit from the clear container
- Vegetable oil
- Cocoa powder
- Deep clear container
- Cotton balls
- Plastic mini boat
- Plastic ocean animals
- Small rocks/ stones
- Sponge
- Spoon
- Plastic cup to put cotton balls in
- Paper towels
- Optional - Washing up liquid
- Optional - Bird feather

**Method:**

1 Fill the clear plastic container half way with water and add 1-2 drops of food colouring. Mix with the spoon. Allow students to create their ocean habitat using the rocks and plastic animals. Next, add the boat to the ocean

# Looking after our oceans

## Activity 4 - Oil spill continued

2 Mix the oil and cocoa powder to create the crude oil

3 Have the girls empty the oil mix into the boat to simulate a tanker carrying crude oil across the ocean

4 The water is polluted! Have the girls tip the boat over spilling ALL the crude oil into the crystal blue ocean waters. Begin to talk about how the oil is sticking together and question will it be easy to clean up

5 The pick-up process! Start off by having the girls predict which tool they think is going to do the best job removing oil from the water. Will it be a spoon, cotton balls, or a sponge? Next, let the girls try with each tool and have them record their findings. (Be prepared for many shocked and frustrated girls If there's one thing that this experiment shows, it's that removing oil from water is NOT EASY!!!! As a matter of fact, it seems that the more you try to remove the oil, the more it seems to spread!

# Looking after our oceans

## Activity 4 - Oil spill continued

They'll quickly figure out they need A LOT of cotton balls to soak up small amounts of oil.
(Don't forget to ask them to think about how much work would need to go into picking up millions of gallons of oil that spilled into the ocean. Especially since it's taking them quite a bit of cotton balls!)

6 Is the sponge any better?
Does it clean up the oil, or does it make it spread further away?

7 Talk about the results from this and how we can prevent this from happening. And how the oil spill affects animals. Using the same dirty water from the experiment give the girls a feather or piece of animal fur. Have them brainstorm ways to remove the oil from the animal's skin. Then hand them a paper towel and let them try wiping the oil away. Talk about what they notice... Is it working? Finally, mix a few drops of washing up liquid dishwashing soap into a bowl of clean water and let them run the feather or fur through the soapy water

# Summary

We hope you have enjoyed taking part in the Sea Savers Challenge. To get your Sea Savers badges, please head over to the Girlguiding North West England shop and search 'Sea Savers' to purchase. The profit from these badges will be split between GGNWE and the SEA LIFE Trust.

shop.girlguidingnwe.org.uk

We'd love to hear your feedback about the Sea Savers Challenge. If you follow the below link you will be directed to a short survey which will help us to improve future challenges from Girlguiding North West England

Click here for the survey!