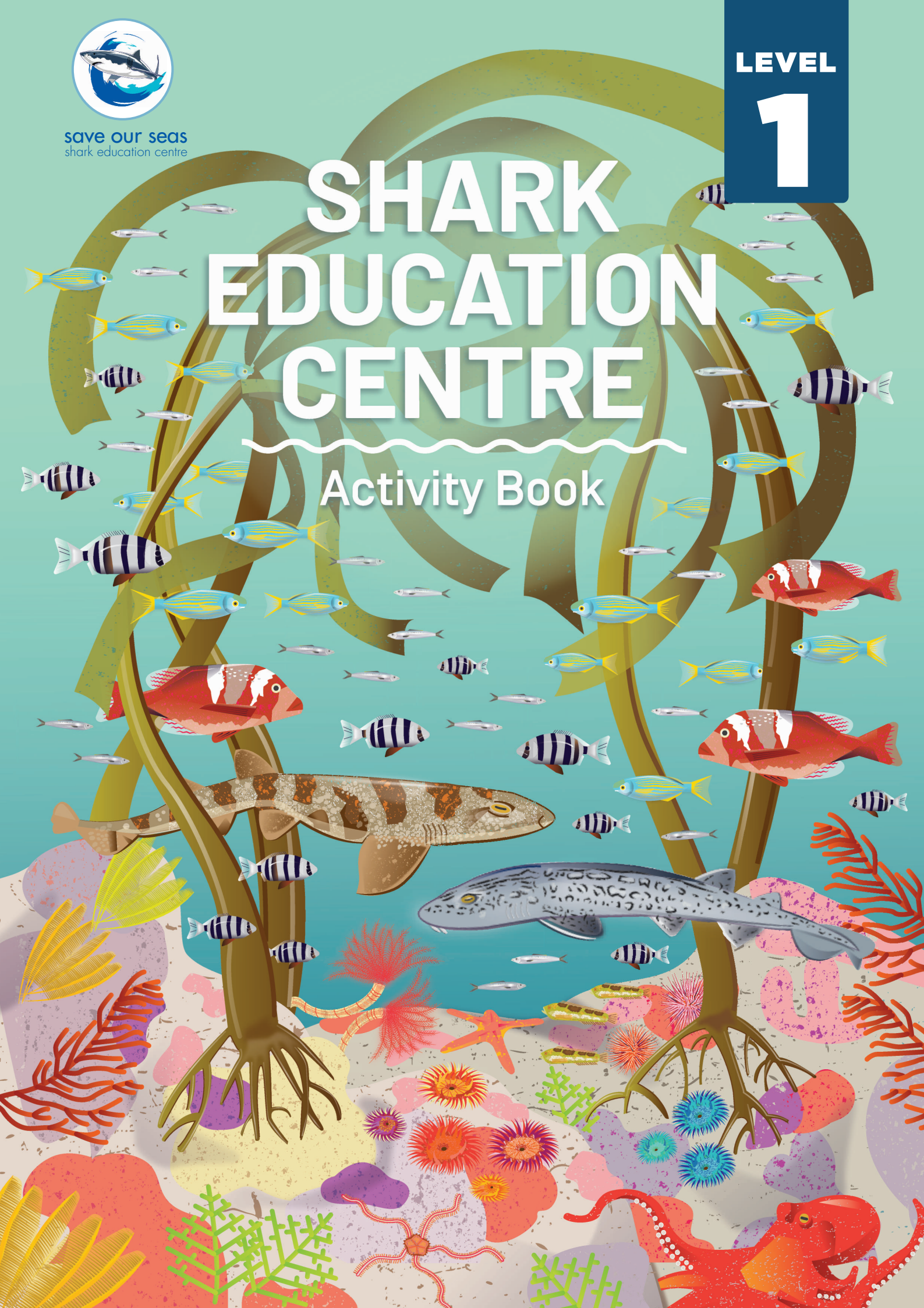
save our seas
shark education centre

LEVEL
1

SHARK EDUCATION CENTRE

Activity Book



Welcome

to our Shark Education Centre Activity Book

My name is Sharky and I will be guiding you to complete the activities in this book

Write your name here:

What do you like the most about sharks? ---

What do you know about sharks?

Mark (✓) as TRUE or FALSE:	TRUE	FALSE
Sharks are fish.	○	○
Sharks use their sense of smell more than their sight.	○	○
Shark skin is rough when sliding a finger from front to back.	○	○
The biggest sharks have the biggest teeth.	○	○
Sharks harm people more often than cows harm people.	○	○
Sharks are in danger from people.	○	○
It would be good if there were no sharks in the sea.	○	○

What is a shark?

A shark is a type of fish. Most fish species have a skeleton made of **bone**. A shark has a skeleton made of **cartilage**.

Cartilage is softer than bone but harder than flesh. Human ears are made of cartilage. It gives shape to the shark's body but is also lightweight and very **flexible**.

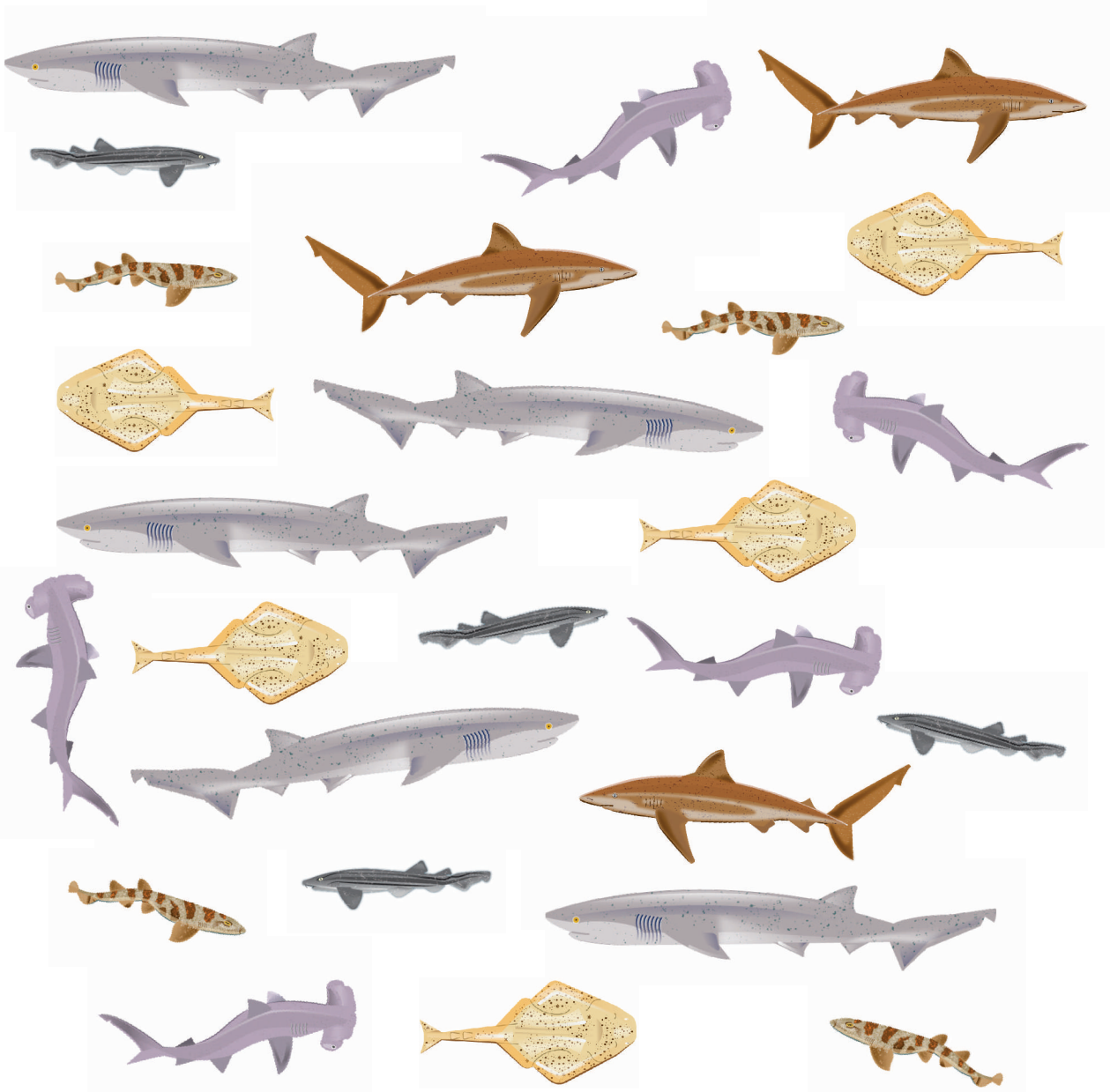
Bony fishes have **gill covers**, but sharks have five to seven **gill slits** on the sides of their bodies.

Fish breathe using gills. The water (containing **dissolved oxygen**) flows in through the mouth and out through gill openings.

Dolphins and whales live in water but are **mammals** with **lungs.** They breathe air in and out through a **blowhole** on top of the head.

Rays and skates are close relatives of sharks as their skeletons are also made of cartilage.

I spy lots of sharks!



Did you know?

There are more than **500** different species of sharks swimming in the oceans!

How many of each species of shark can you see above?

Pyjama catshark = ☐

Sevengill cowshark = ☐

Great hammerhead = ☐

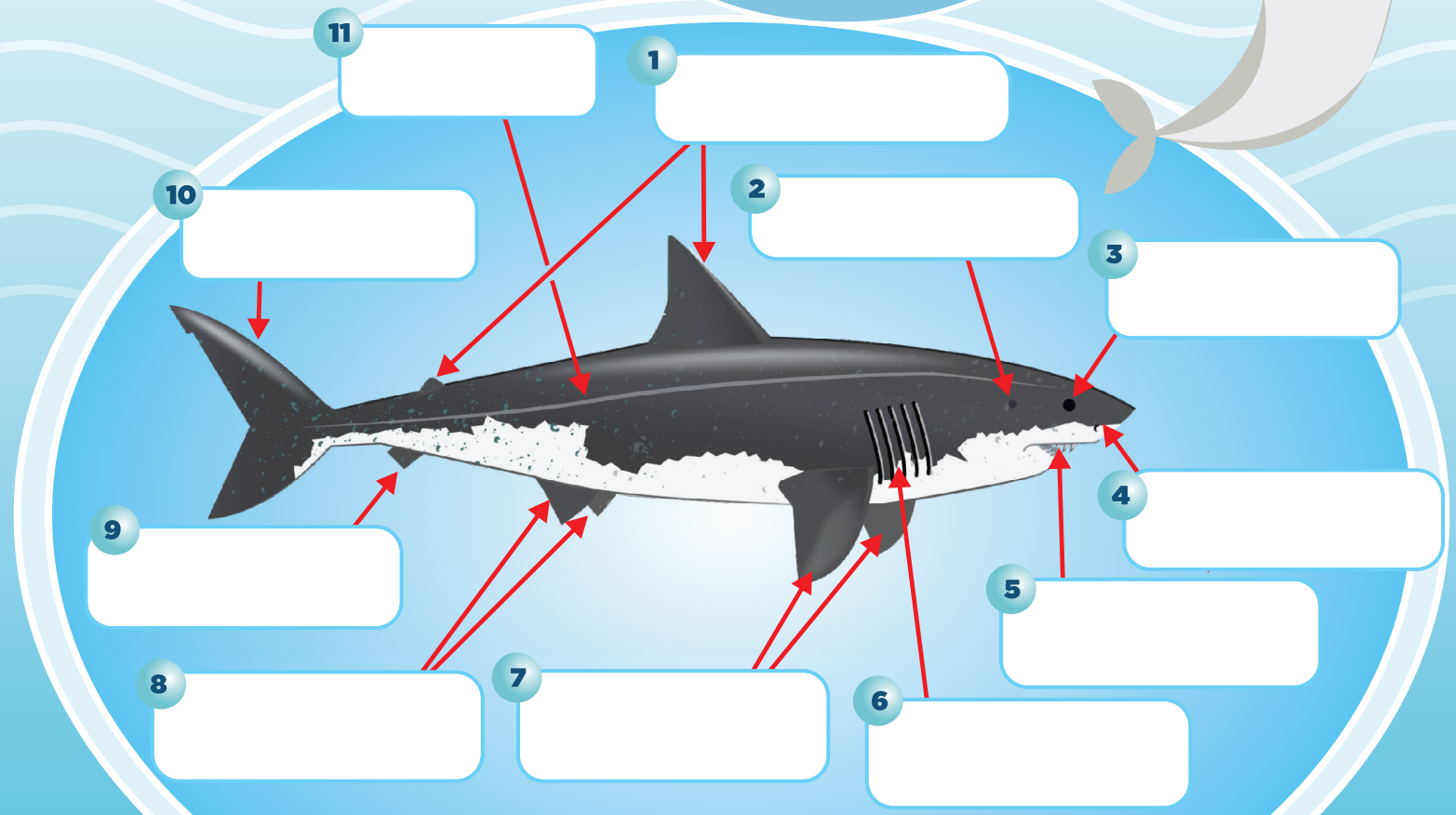
Puffadder shyshark = ☐

Bronze whaler = ☐

Angel shark = ☐

Shark biology

Let's label the body features of a shark. The words in the box are numbered. Write the words in the correct place around the shark.



1. Dorsal fins
2. Ear hole
3. Eye
4. Nostril
5. Mouth
6. Gill slits
7. Pectoral fins
8. Pelvic fins
9. Anal fin
10. Caudal (tail) fin
11. Lateral line

The shark's body is narrow at the front and back and wider in the middle. Its round, streamlined shape helps the shark to move easily through the water.

The shark's tough skin is covered in tiny scales with sharp spikes that point towards the tail. This makes it feel smooth when stroked from nose to tail and rough, like sandpaper, when stroked from tail to nose.

The shark flicks its caudal fin from side to side to swim swiftly forward through the water.

Instead of two arms and two legs, fish have paired pectoral and pelvic fins to help them steer.

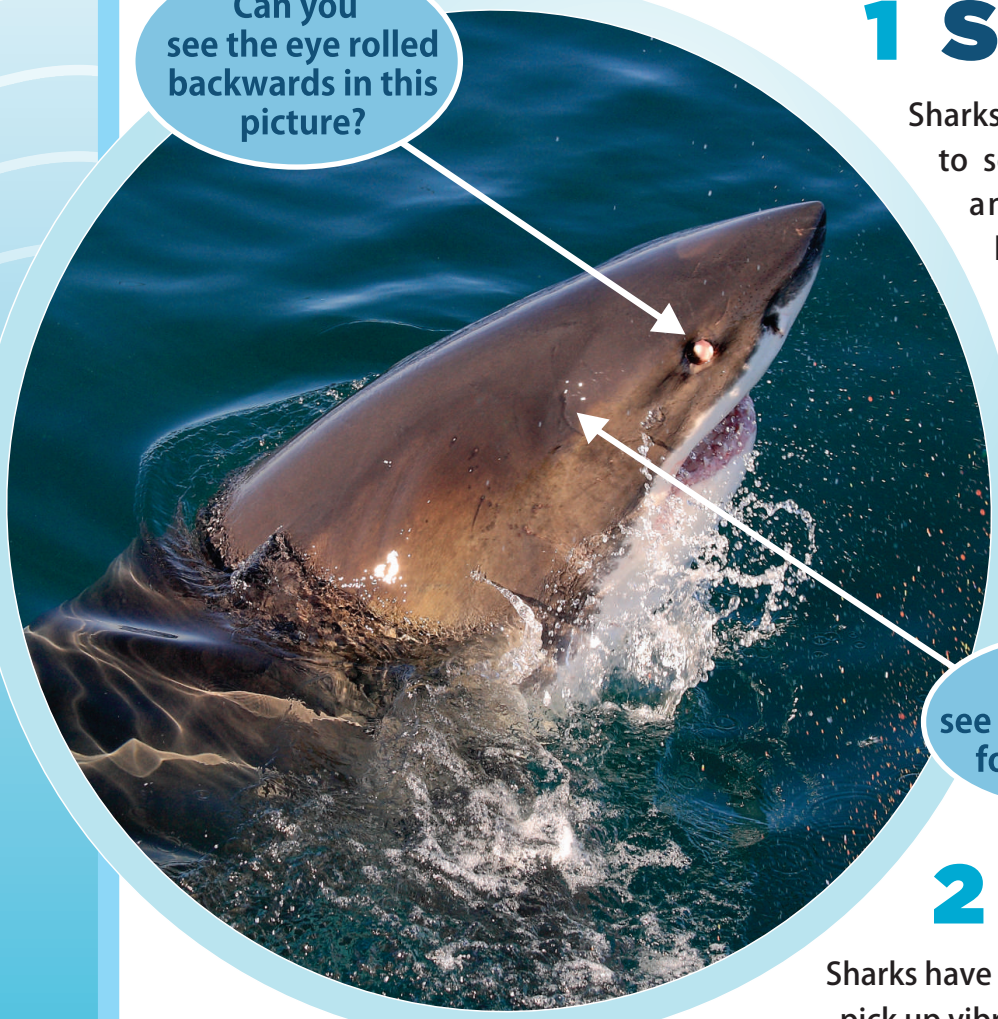
The first dorsal fin sticks out of the water when the shark is just below the surface. Scientists can identify individual sharks by looking at the shape of this fin. The dorsal fin gives the shark balance, enabling it to swim smoothly in the water.

Humans have five senses: sight, sound, taste, smell and touch.

Did you know?

Sharks have four senses similar to humans and **TWO** extra senses!

Shark senses



1 Sight

Sharks' eyes are specially formed to see well underwater by day and at night. Sharks don't have top and bottom eyelids. Some have an eyelid that moves sideways called a **nictitating membrane**. The white shark protects its eyes by rolling them back in their sockets when it attacks its prey.

2 Sound

Sharks have ears inside the head which pick up vibrations in the water. Sharks can hear sounds several kilometres away.

3 Taste

Little is known about sharks' sense of taste. They often use their mouths to feel things in the water, so scientists have found unusual items like old shoes, bottles and cans in the stomachs of dead sharks. However, that doesn't mean they like the taste of these things!

4 Smell

Sharks have an excellent sense of smell. They can smell a few drops of blood in sea water. This helps them find an injured fish that is swimming away.

What extra two senses do sharks have?

Look on the next page to find out.

5 Movement detection

The **lateral line** is a sense organ along both sides of the sharks' body that **feels vibrations** of other animals in the water. The shark can easily tell the difference between a turtle or a seal or a human swimming many metres away.

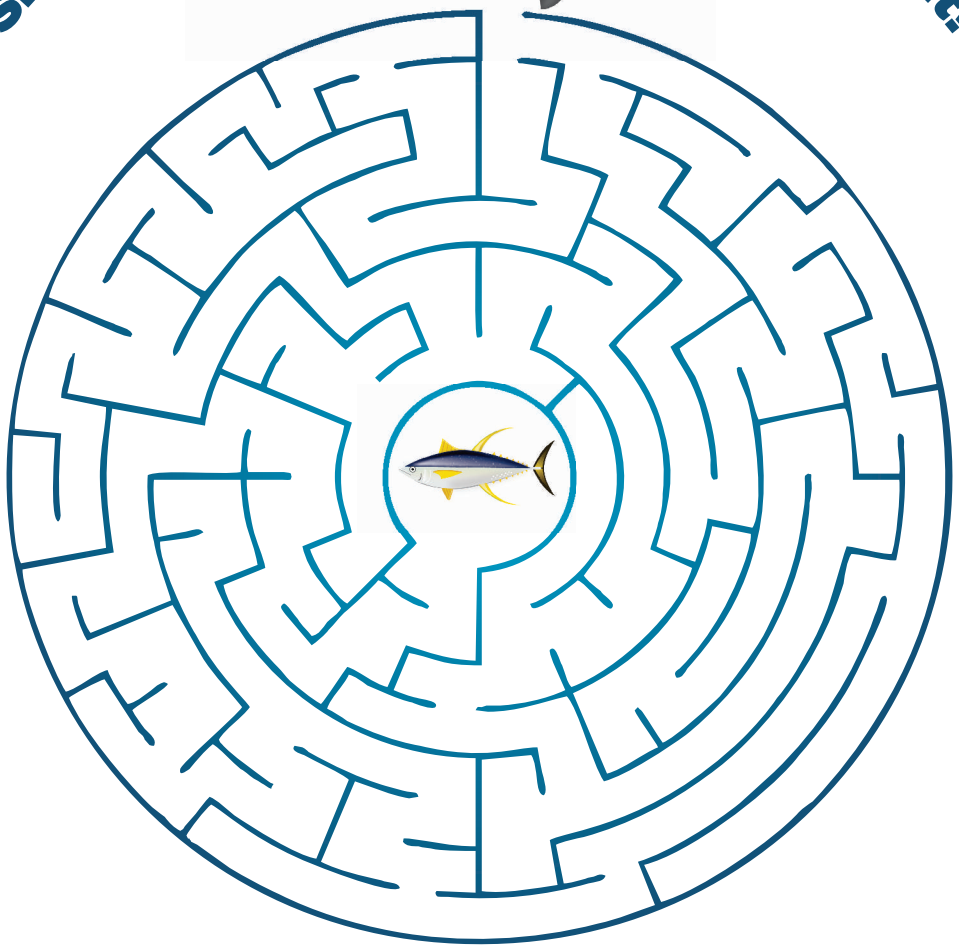
6 Electroreception

Sharks have organs at the **tip of their snout** that can sense **electricity**. They are called the ampullae of Lorenzini. These gel filled pores allow sharks to detect electricity produced by prey and to navigate using the Earth's magnetic field.

Did you know?

All animals, including humans have electricity inside their bodies.

Sharks can easily find food even at night!



Draw a line from the white shark to its prey.

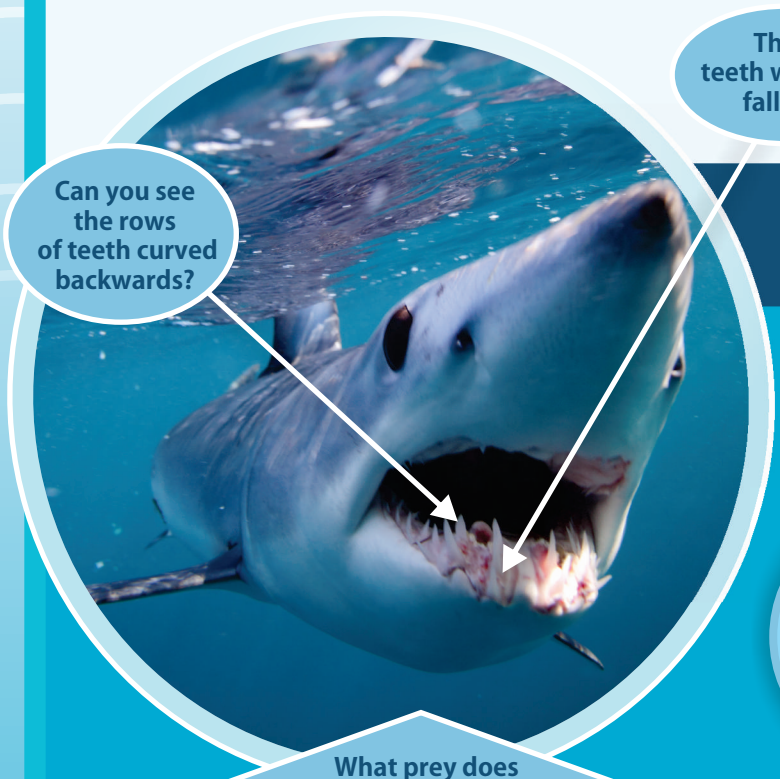
Shark teeth

This picture shows the bottom jaw and teeth of a mako shark.

Sharks have many rows of teeth that gradually move forwards in the jaw, when one falls out.

It is quite normal for outer teeth to break when a shark is feeding.

They are replaced over a few days by new ones folding out from inside!

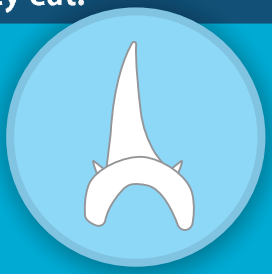


What prey does the mako shark in the picture above eat?

.....

Different sharks eat different prey. The shape of their teeth tells us what prey they eat.

Long, thin and shaped like a hook for gripping slippery fish.



Large, wide and serrated for tearing the flesh of seals.

Short and powerful for crushing the shells of snails and crabs.

What does this shark eat?

.....

What does this shark eat?

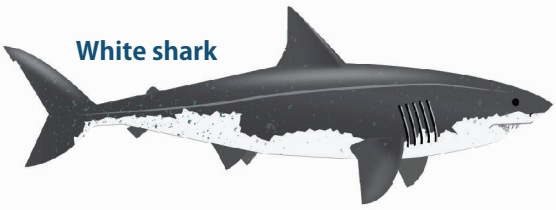
.....

Favourite shark food

Use four different coloured lines to join each shark with its favourite food.

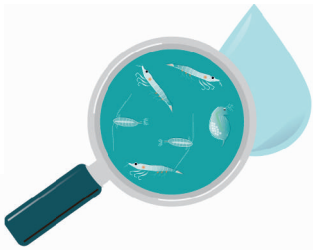
Basking shark

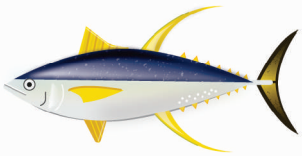
White shark



Blue shark

Pyjama catshark



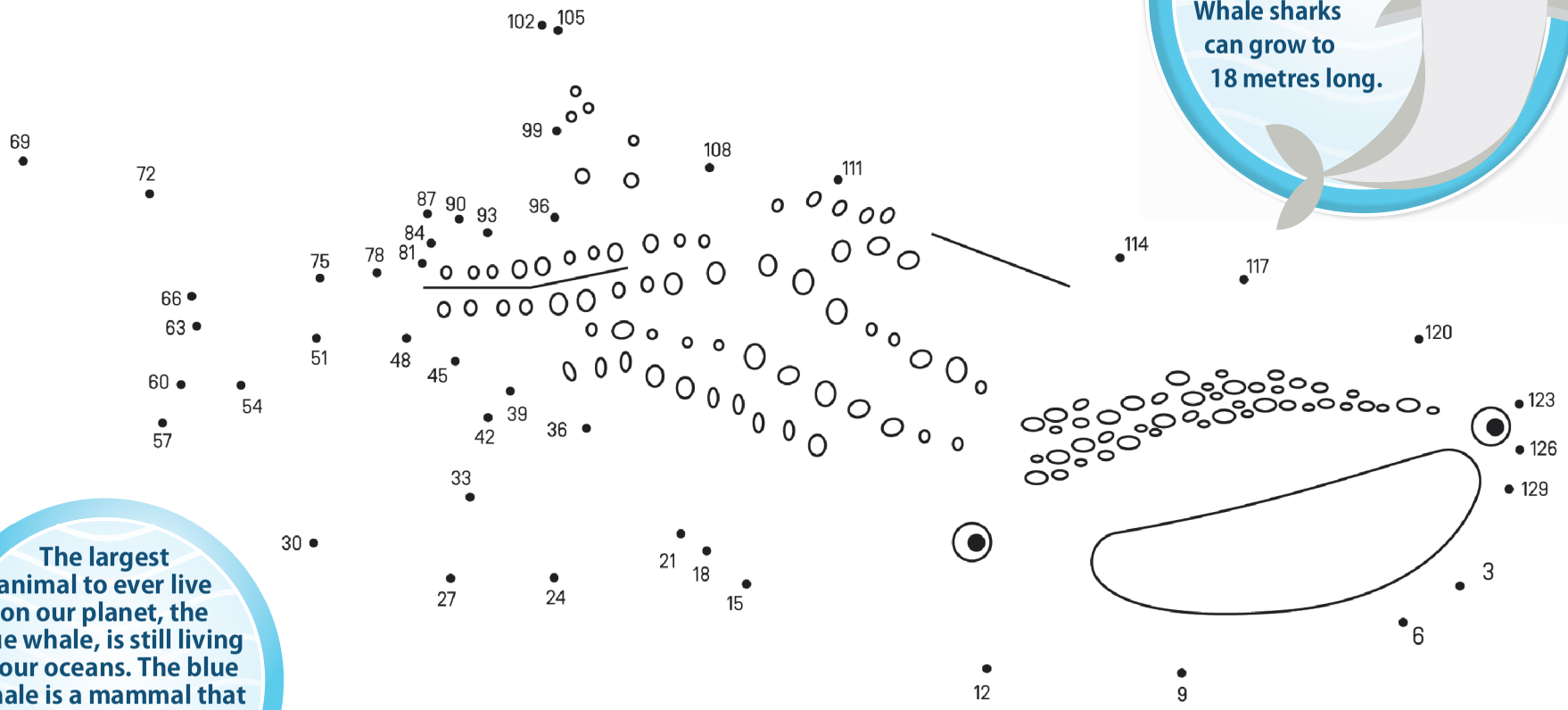


Now it's your turn to draw a picture of a shark below.
What do you think it eats? Write your answer next to the shark.

Can you connect the dots to complete the whale shark drawing?

Did you know?

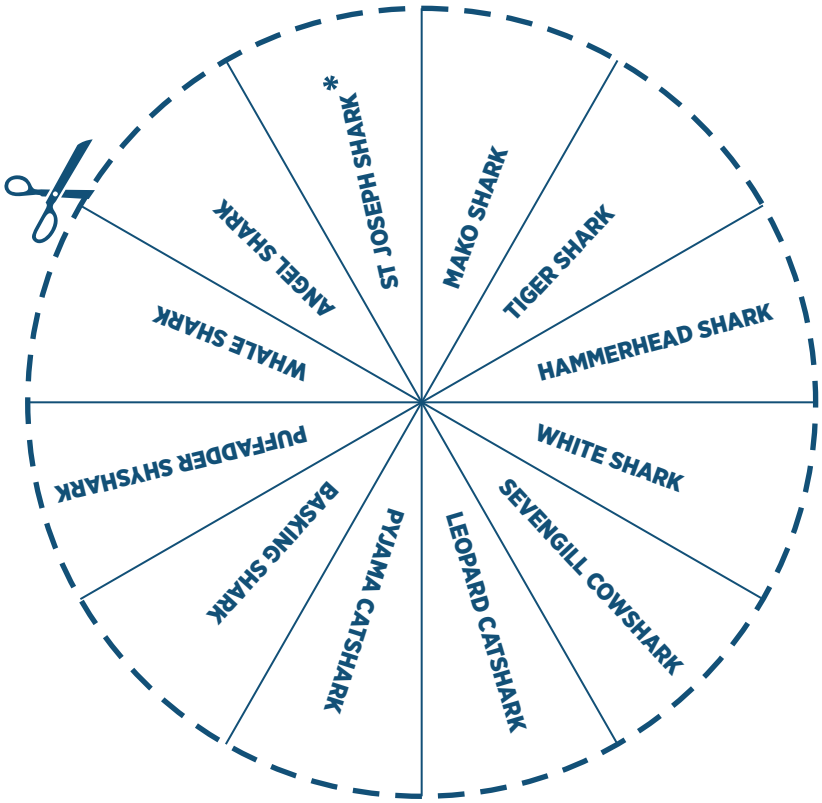
The whale shark is not a whale, it's a shark. It is the largest fish in the sea. Whale sharks can grow to 18 metres long.

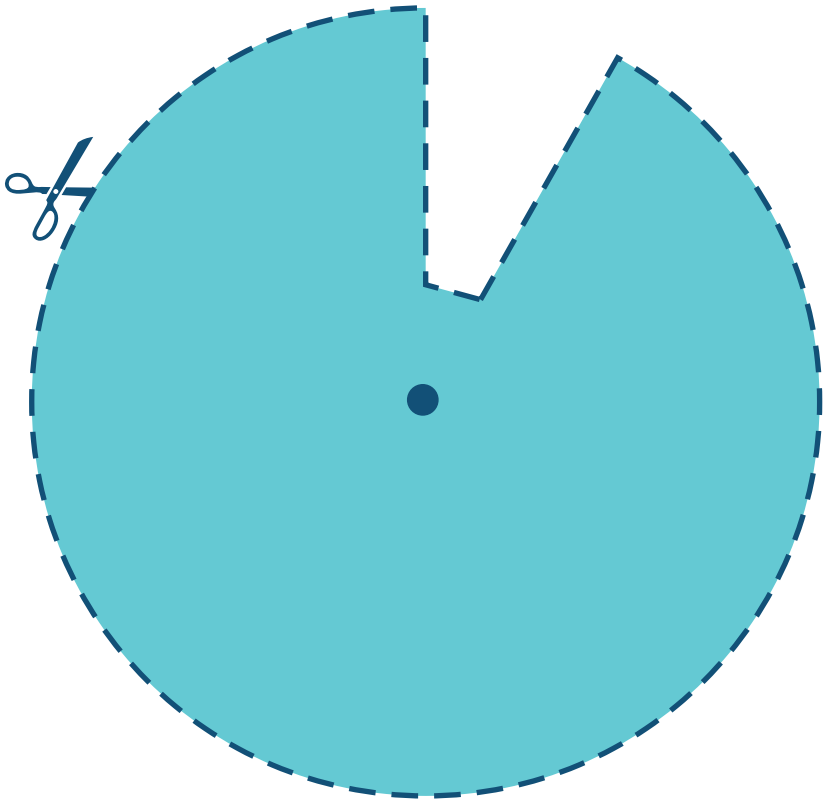


The largest animal to ever live on our planet, the blue whale, is still living in our oceans. The blue whale is a mammal that can grow up to 30 metres long and weigh 190 tonnes.

Counting upwards in multiples of three, connect the dots to reveal the shark.
Colour in the drawing once you have drawn the outline.

Know your sharks spinner game

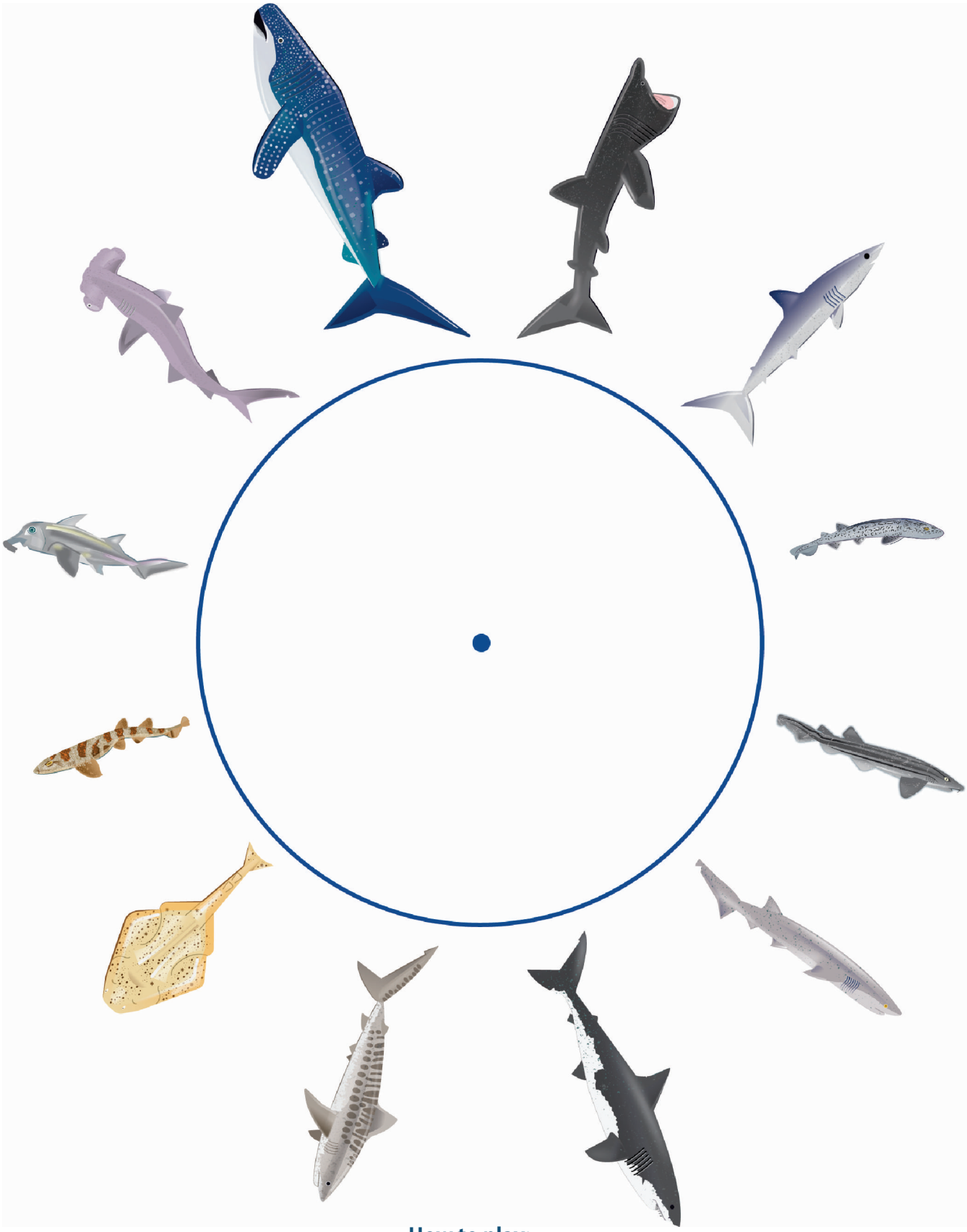




Cut out the two circles on the dotted lines. Place the circle with shark names on top of the circle on the top of page 13 and the circle with a piece missing on top of both. Make a hole through the centre of all three with a sharp pencil point. Fasten the three together with a split pin so the top two circles can be turned.

* The St Joseph shark is actually a chimaera (a close relative) and not a shark as its common name suggests.

Know your sharks spinner game



How to play:

Dial the top circle to any name. Then challenge a friend to turn both circles to the correct shark drawing.

Can you identify these animals?

Animals which live in the sea are called **marine animals.**

One animal above is NOT a marine animal. Which one? .....

What group does this animal belong to? .....

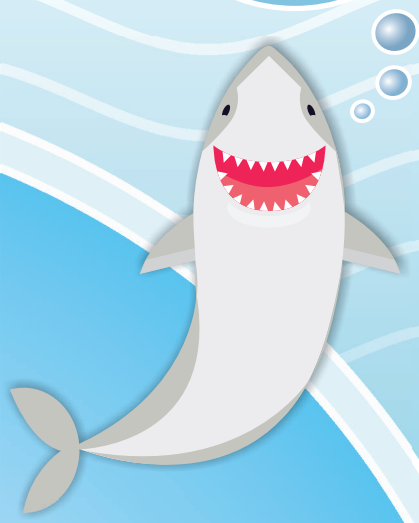
Draw a (circle) around the animals that move using fins.

Rocky shore animals

They like to live at the shore because there is plenty of sunshine, moisture and food.

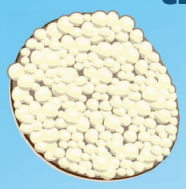
Some left-over animal parts we find on beaches are shown below:

Have you noticed how many shells there always seem to be washed up on the shore?



Draw lines to connect the animal names to the correct drawings.

(One has been done for you)



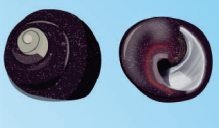
Cuttlefish bone

Black mussel

White mussel

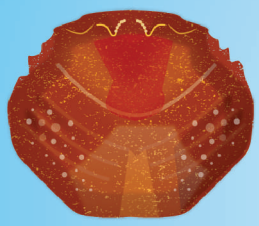
Ribbed white mussel

Dog whelk

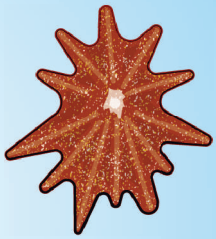


Plough shell

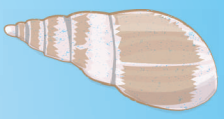
Winkle



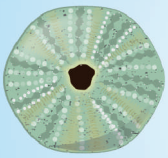
Crab carapace



Shark egg case



Alikreukel lid



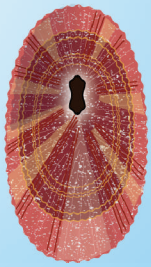
Sea urchin

Venus ear

Slipper limpet

Keyhole limpet

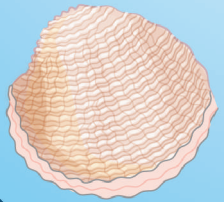
Duck's foot limpet



Pear limpet

Pink-rayed limpet

Granite limpet



Did you know?

Beach sand is made of millions of tiny pieces of shell.

The tide changes four times a day as the Earth rotates

HIGH TIDE

LOW TIDE

What differences can you see between high tide and low tide?
Which statement belongs to high tide and which belongs to low tide?

Draw an arrow to the left or the right. One has been done for you.

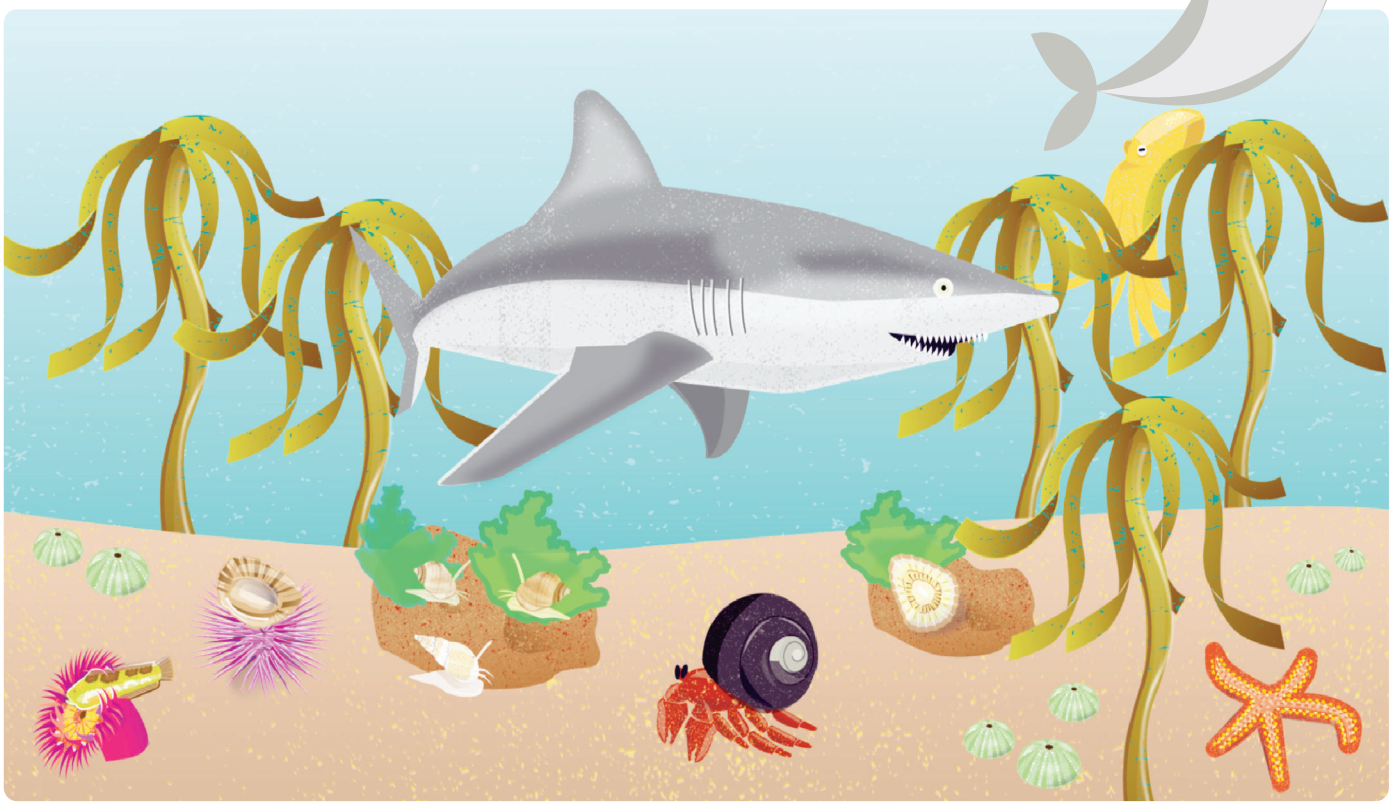
HIGH TIDE

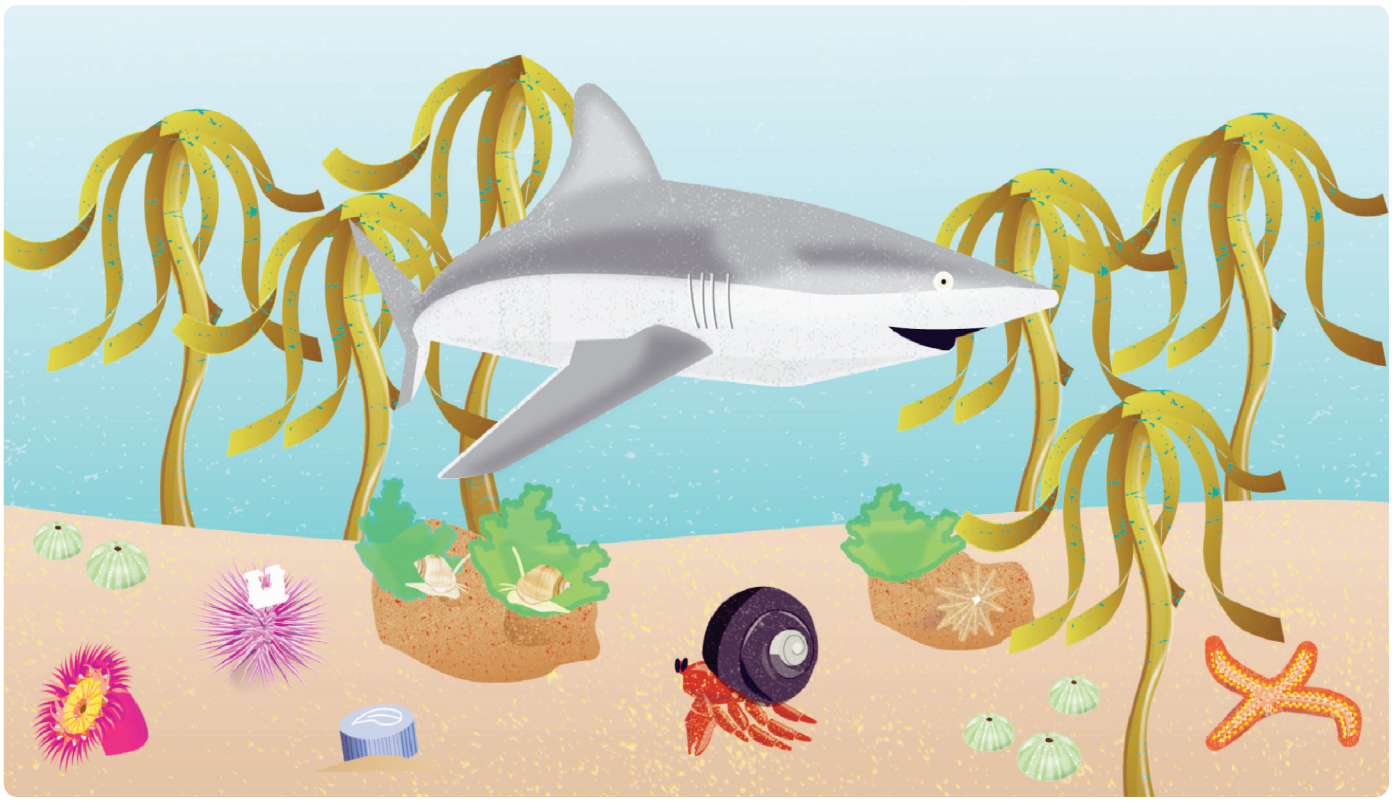
- Rockpools full of cool water
- Rock lobster comes out of hole
- Sea anemones closed →
- Seaweeds dry out
- Barnacles stick feet out to feed
- Oystercatcher feeds on limpets
- Limpets glide around
- Fish feed on mussels
- Winkles trap water in shells
- Octopus hides

LOW TIDE

Spot the difference

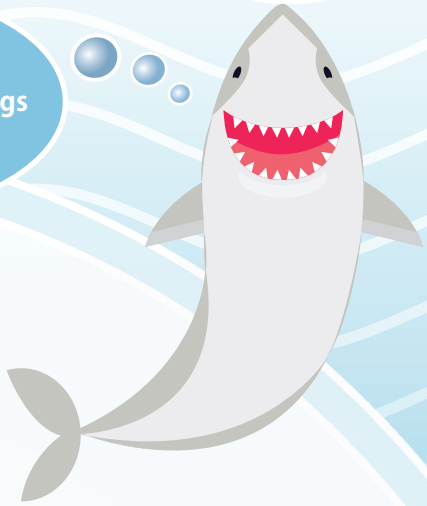
Have a look at these two images below. Draw circles around the 13 differences you see in the top picture.

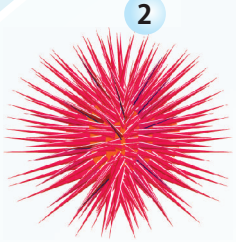


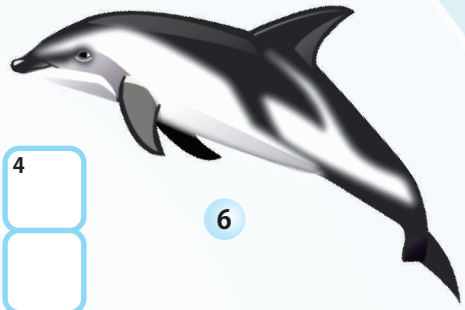


Puzzle time

Fill in the crossword puzzle. The numbered drawings of sea animals are your clues.







Let's sort and reduce our rubbish

What can we do to help?

We will send much less rubbish to landfills if:

1. **We sort our home rubbish and take recyclable goods to a collection centre.**
2. **We re-use items instead of buying single-use items. Don't use straws, paper cups, plastic cutlery, polystyrene containers, plastic shopping bags.**
3. **Start making compost from kitchen scraps.**

- Ask your parents to buy large, clear plastic bags or an extra bin for recyclable waste.
- Find out where the nearest place is to drop off your recyclable waste and what products they will recycle.
- Find items in your waste that are only used once before being thrown away. Are there other options in stores that can be used multiple times or can these items be replaced altogether?

Seashore pollution

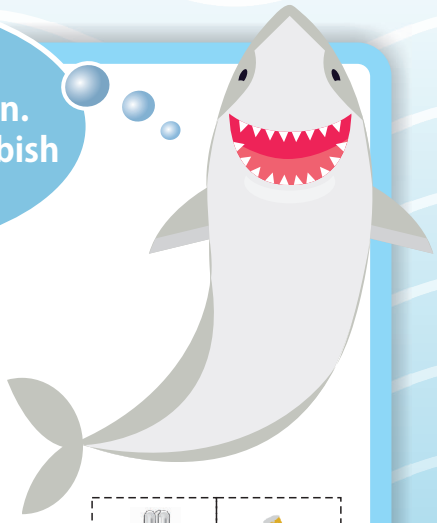
Some people throw litter down carelessly. It blows away in the wind and harms animals and plants on land and in the sea.

Rubbish that doesn't sink, can drift around at sea for months or years before washing ashore. To marine animals, some items can look like food, but if we eat them they could kill us.

Circle the things that do not belong in this rockpool drawing.

Cut out the square for each piece of rubbish and stick it in any space on the correct bin.

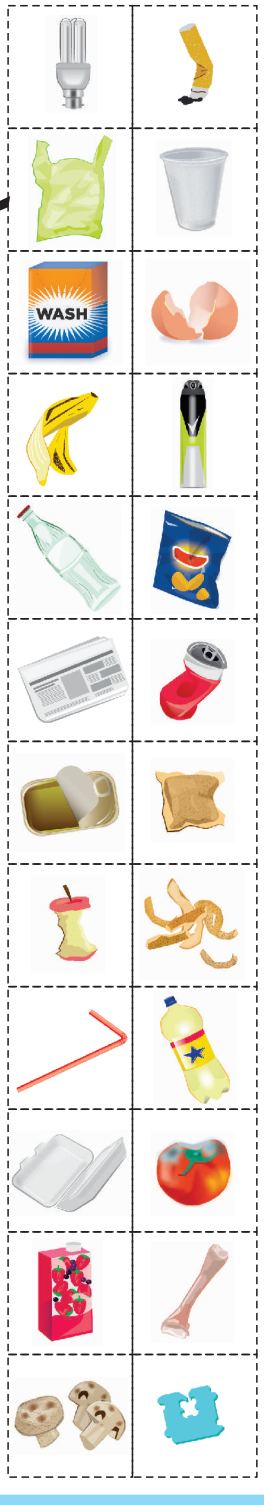
Let's help reduce waste and pollution. Can you sort the rubbish correctly?



Compost

Recycle

Rubbish



MY PLANET

Humans need to take care of the Earth. It is our home to share with all living things. What can you do to help the Earth be a cleaner place for all?

Write down 5 ideas of how YOU can help the planet.

1. .....
2. .....
3. .....
4. .....
5. .....

It is time for me to say goodbye. I hope you have enjoyed this book. Find out how to contact or visit us on the next page.

save our seas
shark education centre

Come and visit us to learn all about sharks, the ocean and the local False Bay environment. We offer:

- School/group outings and programmes
- Public visits to explore the interactive exhibits and displays

Ask your teacher to book an outing by e-mailing us at bookings@saveourseas.com.

Ask your parents to follow us on social media, where we advertise when we are open for public visits.

All our programmes and public visits are free.

For further details:

https://saveourseas.com/sosf-shark-education-centre

https://www.facebook.com/sharkcentre

https://www.instagram.com/sharkcentre

28 Main Road, Kalk Bay, Cape Town

021 788 6694

Image credits

6.1 Guido Montald | Shutterstock; 6.2 Andrea Izzotti | Shutterstock; 6.3 Willyam Bradberry | Shutterstock; 6.4 RW Brooks | Shutterstock; 20.1 Maljuk | Shutterstock; 20.2 Bolshie Bufera | Shutterstock; 21.1 Tatiana Dyuvbanova | Shutterstock; 21.2 Rich Carey | Shutterstock; 21.3 Silvia Truessel | Shutterstock; 22.1 Goncharov Artem | Shutterstock; 22.2 Nigel Wallace | Shutterstock.

Illustrations by Jamy Silver | Layout by Sarah Buchanan

This book is printed on 100% recycled paper.