Primary
Senior Cycle

Student Workbook

SEA LIFE™

Habitats

Worksheet 1- Creature Quiz

Wow Fact

Roughly 25% of the world's marine life lives on or around coral reefs!

How well do you think you know sea creatures?

- *For each question, your teacher will describe a sea creature.*
- *Look at the sea creatures below for each question.*
- *Decide which of the four creatures the description is about.*

1

Octopus

Mussel

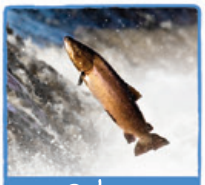
Turtle

Sponge

2

Starfish

Shark

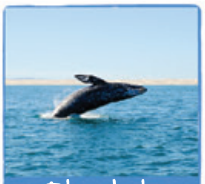

Salmon

Seal

3

Ray

Hermit Crab


Blue Whale

Tuna

4

Anemone

Jellyfish

Lobster

Prawn

From what you have learned about the four animals above, what do you think they have in common? What sort of a habitat do you think they live in?

Habitats

Worksheet 2: Describe the Environment

Wow Fact

Coral reefs are one of the most threatened ecosystems on earth.

Being able to talk about habitats is a big part of being a sea scientist. Write a paragraph to describe the habitat shown in the picture. You could start by labelling the picture. Make sure you mention:

- *The main features of the habitat.*
- *What sort of water you think will be in the habitat (freshwater/saltwater).*
- *The type of cover available for the animals living there.*
- *The different types of food which are available.*

Can you spot these things in the picture?

Clownfish	Starfish	Turtle	Rocks
Anemone	Crab	Sea Snake	Plants
Shark	Jellyfish	Coral	

Wow Fact

An octopus has blue blood, three hearts and can change their skin colour in the blink of an eye!

Movement
Worksheet 3: Guess How They Move

Sea creatures come in all different shapes and sizes; from scuttling and crawling, to swimming and floating, they move in all sorts of ways.

- *Look at the pictures of the animals below.*
- *Think about words which could be used to describe how that animal moves.*
- *Now write a paragraph to explain how you think that animal moves.*

Octopus

Eight arms, Sucker cups, Soft body

Seahorse

Pre-hensile tail, Bony body armour, Dorsal fin

Movement
Worksheet 4: Anatomy of a Fish

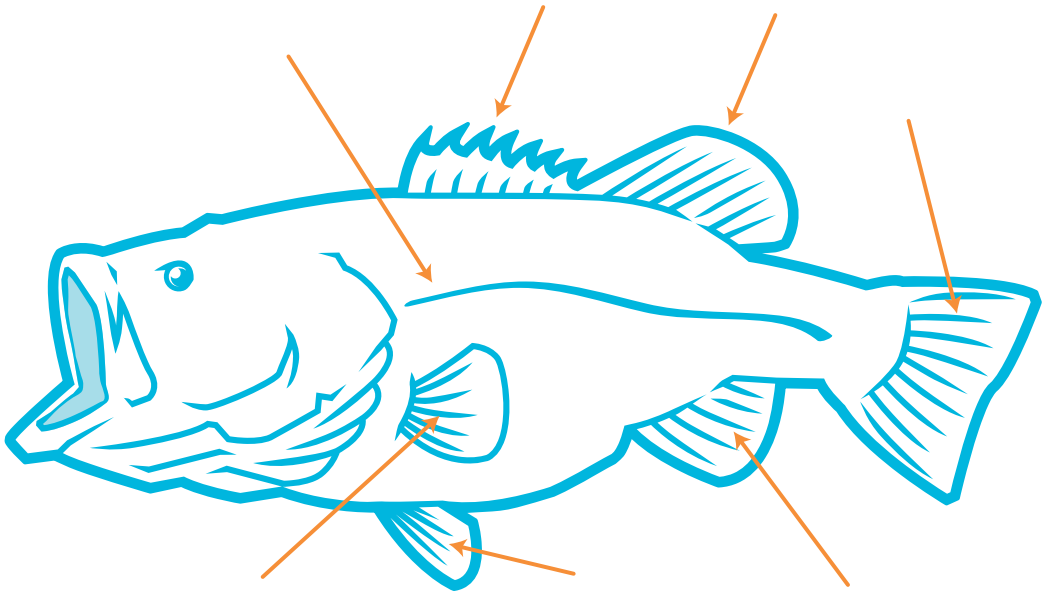
Wow Fact

Most fish swim by moving their tail from side to side. Whales and dolphins, which are mammals, swim by moving their tail up and down.

Put your learning to the test! Look at the diagram of the fish below and label it using these words.

Lateral line | Dorsal fin | Soft dorsal | Pectoral fin

Caudal fin | Pelvic fin | Anal fin



Movement

Worksheet 5: How Fast Can a Fish Swim?

Wow Fact

Flying Fish can leap out of the water, jumping up to 10 metres to escape their predator. Their tail can move 50 beats per second to get the speed they need to jump.

Some fish can swim really fast for a very long time, helping them cover huge distances in search of food. Read the information below, which explains how far each type of fish can swim. Now work out the answers to the questions.

At top speed a mackerel can swim 30km in one hour.

At top speed a Blue Fin Tuna can swim 100km in one hour.

At top speed a sailfish can swim 115km in one hour.

At top speed a Flying Fish can swim 60km in one hour.

Questions:

1. **Q:** *How far could a sailfish swim in five hours?*

   A: .....

2. **Q:** *A swordfish can swim three times as fast as a mackerel; how far can a swordfish swim in one hour?*

   A: .....

3. **Q:** *How long would it take a Blue Fin Tuna to swim 350 miles?*

   A: .....

4. **Q:** *How long would it take for a mackerel to swim as far as a Flying Fish can in three hours?*

   A: .....

5. **Q:** *How far can a Blue Fin Tuna swim in 45 minutes?*

   A: .....

Movement
Worksheet 6: Alive or Not

Wow Fact
Turtles are ancient reptiles - they've been around for 200 million years and can live to be 100 years old!

Every living thing uses the seven life processes. So, can you figure out which of the following are living things?

- *For each thing listed in the left hand column, work through the table, placing a tick or a cross in each box to show whether it is capable of that life process.*
- *If an item receives a tick in every box then it is capable of all the life processes and therefore is alive.*
- *Place a tick in the final column for any of the things which you think are living.*

	Movement	Reproduction	Sensitivity	Nutrition	Excretion	Respiration	Grow	Living
Speedboat								
Bumble bee								
Crab								
Human								
Chocolate								
Shark								
Fire								

SEA LIFE

Classification & Variation

Worksheet 7: Guess Who

Wow Fact

There are over 31,500 different species of fish in the world's oceans, rivers and lakes

Think you know enough to work out which creature is which?

Name: Sea Turtle
Shell: Yes
Number of Legs/Flippers: 4
Warm or Cold Blooded: Cold
What Does it Eat: Small fish and jellyfish

Name: Octopus
Shell: No
Number of Legs/Flippers: 8
Warm or Cold Blooded: Cold
What Does it Eat: Crabs, lobsters and other shellfish

Name: Crab
Shell: Yes
Number of Legs/Flippers: 8
Warm or Cold Blooded: Cold
What Does it Eat: Plants and dead animals

Name: Salmon
Shell: No
Number of Legs/Flippers: 0
Warm or Cold Blooded: Cold
What Does it Eat: Small fish and plankton

Name: Grey Seal
Shell: No
Number of Legs/Flippers: 4
Warm or Cold Blooded: Warm
What Does it Eat: Cod and other fish

Name: Blue Whale
Shell: No
Number of Legs/Flippers: 2
Warm or Cold Blooded: Warm
What Does it Eat: Krill

Name: Blacktip Reef Shark
Shell: No
Number of Legs/Flippers: 0
Warm or Cold Blooded: Cold
What Does it Eat: Big fish like surgeonfish or rays

Name: Moon Jellyfish
Shell: No
Number of Legs/Flippers: 0 (but lots of tentacles)
Warm or Cold Blooded: Cold
What Does it Eat: Plankton & small fish

Classification & Variation

Worksheet 7: Guess Who

Wow Fact

There are over 31,500 different species of fish in the world's oceans, rivers and lakes

Think you know enough to work out which creature is which?

Name: Seahorse
Shell: No
Number of Legs/Flippers: 0
Warm or Cold Blooded: Cold
What Does it Eat: Plankton

Name: Otter
Shell: No
Number of Legs/Flippers: 4
Warm or Cold Blooded: Warm
What Does it Eat: Sea Urchins, crabs and mussels

Name: King Penguin
Shell: No
Number of Legs/Flippers: 4
Warm or Cold Blooded: Warm
What Does it Eat: Small fish and squid

Name: Starfish
Shell: No
Number of Legs/Flippers: 5
Warm or Cold Blooded: Cold
What Does it Eat: Mussels

Name: Barnacles
Shell: Yes
Number of Legs/Flippers: 12
Warm or Cold Blooded: Cold
What Does it Eat: Plankton

Name: Mackerel
Shell: No
Number of Legs/Flippers: 0
Warm or Cold Blooded: Cold
What Does it Eat: Small fish

Name: Giant Moray Eel
Shell: No
Number of Legs/Flippers: 0
Warm or Cold Blooded: Cold
What Does it Eat: Crabs, lobster and shrimp

Name: Sea Anemone
Shell: No
Number of Legs/Flippers: 0 (but lots of tentacles)
Warm or Cold Blooded: Cold
What Does it Eat: Shrimp

Wow Fact

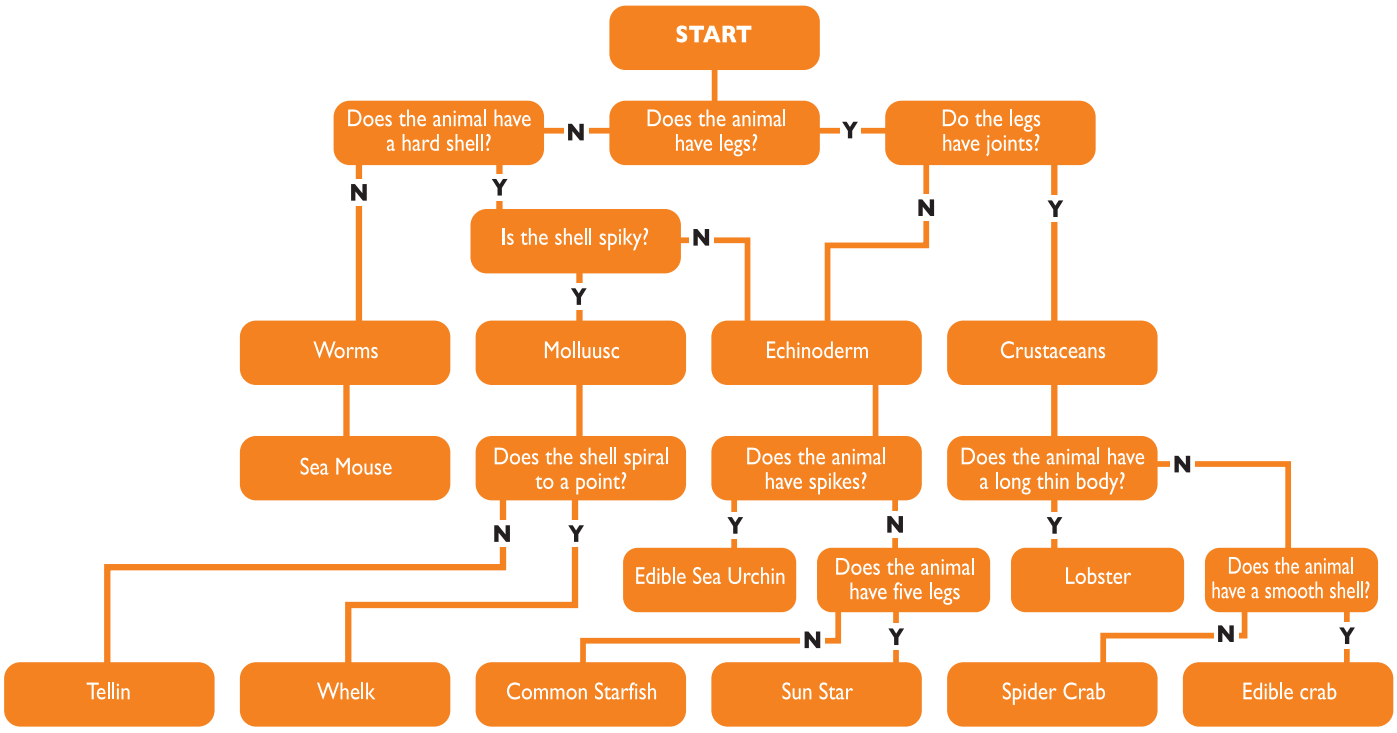
Sharks skeletons are not made out of bone, they are made out of cartilidge, like the bendy bit in your nose!

Classification & Variation

Worksheet 8: Name the Animal

Here are a few of the weirder looking creatures under the sea.
Can you work out what they are? Look at the pictures of the animals below.

- *Use the key provided to find out what they are.*
- *Start at the beginning and answer each question until you reach the name of an animal.*
- *Put the correct name in the box under each animal.*



Classification & Variation

Worksheet 9: Count the Species

Wow Fact

The Horseshoe Crab is more closely realted to a spider than a crab!

Look at the picture below and see how many different types of animals you can see. Make a list of all of the animals names which you know.

List:

Imagine the animal which...

So, you can spot a sea creature by its picture. But can you figure it out by words alone? Read the description below and then draw a picture of how you think that animal should look. You could also give your animal a name.

Description

This animal has short fur all over its body. It has a long flat beak which it uses for digging in the mud and a poisonous spike on one of its feet. This animal is an excellent swimmer which can use flaps to cover its eyes and nostrils while it is underwater. It uses an electrical field to help it find its food. It has a big tail which it uses to store fat.

Food Chains
Worksheet 10: Connecting the Food Chain

THE SUN

The sun's light provides energy for plants to grow.

Consumed by:
Phytoplankton

PHYTOPLANKTON
(Plant Plankton)

These are tiny plants which live in the water.

Consumes:
Sunlight

Consumed by:
Zooplankton

BLUE WHALE

These are the biggest animals in the sea. Nothing consumes Blue Whales so they are top of their food chain.

Consumes:
Zooplankton

ZOOPLANKTON
(Animal Plankton)

These are the smallest animals which live in the sea.

Consumes:
Phytoplankton

Consumed by:
Blue Whale

Food Chains
Worksheet 10: Connecting the Food Chain

THE SUN
The sun's light provides energy for plants to grow.

Consumed by:
Phytoplankton

PHYTOPLANKTON
(Plant Plankton)

These are tiny plants which live in the water.

Consumes:
Sunlight

Consumed by:
Zooplankton

ZOOPLANKTON
(Animal Plankton)

These are the smallest animals which live in the sea.

Consumes:
Phytoplankton

Consumed by:
Jellyfish

JELLYFISH
Jellyfish can be found in every ocean in the world. Their bodies are made of more than 90% water.

Consumes:
Phytoplankton

Consumed by:
Loggerhead Turtle

LOGGERHEAD TURTLE
The Loggerhead Turtle is a large yellow shelled turtle which lives in oceans around the world.

Consumes:
Jellyfish

Consumed by:
Tiger Shark

TIGER SHARK
Tiger Sharks are ferocious predators which live in warm waters around the tropics.

Consumes:
Loggerhead Turtles

Food Chains
Worksheet 10: Connecting the Food Chain

THE SUN

The sun's light provides energy for plants to grow.

Consumed by:
Phytoplankton

PHYTOPLANKTON
(Plant Plankton)

These are tiny plants which live in the water.

Consumes:
Sunlight

Consumed by:
Zooplankton

ZOOPLANKTON
(Animal Plankton)

These are the smallest animals which live in the sea.

Consumes:
Phytoplankton

Consumed by:
Herring

HERRING

Herring is a small oily fish which lives in Northern waters

Consumes:
Zooplankton

Consumed by:
Seals

SEALS

Seals are large animals with flippers. They live in cold water and give birth to their babies in ice shelves.

Consumes:
Herring

Food Chains
Worksheet 10: Connecting the Food Chain

THE SUN

The sun's light provides energy for plants to grow.

Consumed by:
Phytoplankton

PHYTOPLANKTON
(Plant Plankton)

These are tiny plants which live in the water.

Consumes:
Sunlight

Consumed by:
Zooplankton

ZOOPLANKTON
(Animal Plankton)

These are the smallest animals which live in the sea.

Consumes:
Phytoplankton

Consumed by:
Mackerel

MACKEREL

Mackerel are a small, oily fish which live throughout the world's oceans. They often live in huge groups called shoals.

Consumes:
Zooplankton

Consumed by:
Seals

SEALS

Seals are large animals with flippers. They live in cold water and give birth to their babies in ice shelves.

Consumes:
Mackerel

Consumed by:
Sharks

SHARK

Sharks are large fast predators which live in coastal areas around the world.

Consumes:
Seals

Food Chains
Worksheet 10: Connecting the Food Chain

THE SUN

The sun's light provides energy for plants to grow.

Consumed by:
Phytoplankton

PHYTOPLANKTON
(Plant Plankton)

These are tiny plants which live in the water.

Consumes:
Sunlight

Consumed by:
Zooplankton

ZOOPLANKTON
(Animal Plankton)

These are the smallest animals which live in the sea.

Consumes:
Phytoplankton

Consumed by:
Crabs

CRABS

Crabs live on the bottom of the ocean.

Consumes:
Zooplankton

Consumed by:
Octopus

OCTOPUS

Octopus have four pairs of arms and three hearts. They move around by walking on their arms or by blowing out jets of water to swim.

Consumes:
Crabs

Consumed by:
Sea Otters

SEA OTTERS

Sea otters are the smallest mammals which live in the sea. They are an endangered species.

Consumes:
Octopus

Food Chains

Worksheet 11- Your Food Chain

Wow Fact

To feed all of the 6,500 creatures in a Sealife Centre for one day it takes: 6kg mackerel, 50kg squid, 3kg frozen mysis, 3kg frozen krill, 1kg Sand Eel and 1kg crab.

What about the food chains in your life, as well as the ones under the sea?

- *Look at the three foods shown below.*
- *Using the words listed in the box, complete the food chain for each of these foods.*
- *Remember to include humans in the food chain.*

Hamburger

Sunlight → ☐ → ☐ → ☐

Tuna Steak

Sunlight → ☐ → ☐ → ☐ → ☐

Salmon

Sunlight → ☐ → ☐ → ☐ → ☐

Grass	Cow	Human	Cod	Squid	Tuna	Plankton	Small Fish	Salmon

Now think of a meal which you have eaten recently and make a food chain for one of the ingredients.

Food Chains

Worksheet 12- What's in the Web?

Wow Fact

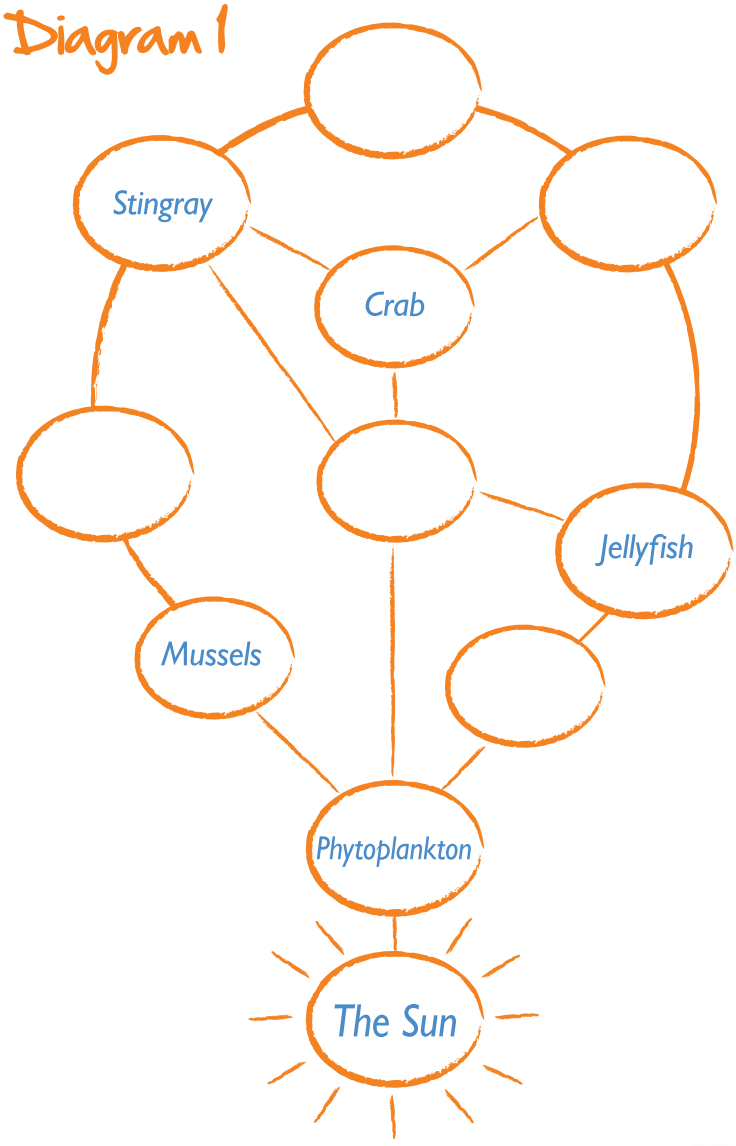
The Blue Whale, which is the largest animal on Earth, survives by eating some of the smallest creatures on Earth, plankton

Most animals have more than one thing they like to eat – and more than one thing that likes to eat them too.

- *Food webs can be used to show more complicated food chains.*
- *They can show that most animals eat more than one type of food and that some can have more than one predator.*
- *Look at the information below and complete the food web template in Diagram 1.*

Tiger Sharks eat stingrays and Sea Turtles
Sea Turtles eat jellyfish and crab
Stingrays eat starfish, shrimp and crabs
Crabs eat shrimp
Jellyfish eat shrimp and zooplankton
Starfish eat mussels
Mussels eat phytoplankton
Zooplankton eat phytoplankton
Shrimps eat phytoplankton
Phytoplankton consumes sunlight

Diagram 1



Adaptation
Worksheet 13- Where do I Live?

Wow Fact

A seal can have a layer of blubber up to two inches thick to help protect it from the cold conditions in which it lives.

Look at the pictures of animals and environments below.

- *Decide which environment you think each animal lives in and draw a line to connect it to that environment.*
- *Write underneath why you think that animal is especially suited to that environment. Remember to look carefully!*

Common Seal

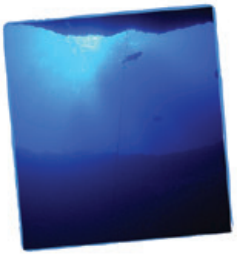
Clownfish

Tuna

Starfish

Anglerfish

Crab



Open Ocean

Coral Reef

Mussel Beds

Rocky Shore

Seabed

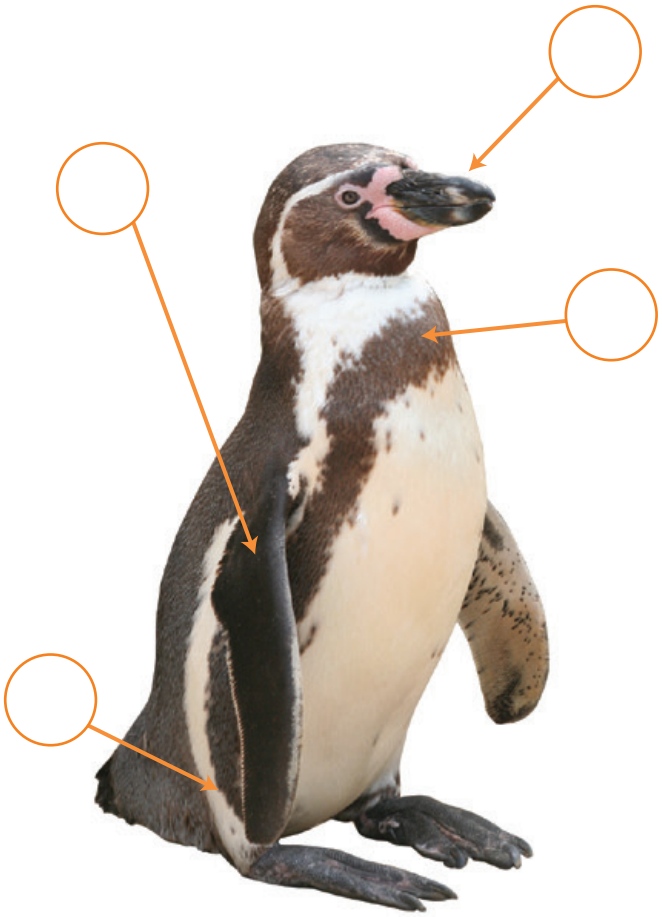
Sand Bank

Adaptation
Worksheet 14: The Humbolt Penguin

Conservation Fact
There are fewer than 10,000 pairs of Humbolt Penguins in the world.

The Humboldt Penguin lives mostly on rocky shores near cliffs or on islands along the coasts of Chile and Peru. Chile and Peru are countries in South America. Although Humboldt Penguins live in fairly warm regions, the ocean waters can get very cold indeed!

- *Look at Diagram 1 which shows a Humboldt Penguin.*
- *Read the explanations of each of the penguin's adaptations.*
- *Work out which body part is being described and write the correct letter next to each of the labels on the diagram.*



A - Wings
Penguins don't fly. However, these are strong and stiff and have adapted to help the penguin swim underwater. When they are standing on land, on a hot day, they may even spread them away from their body to help them cool down.

B - Feathers
These are wind and water-proof and are made up of two parts. The soft and fluffy part traps air to help keep the penguin warm. But, on a hot day they might ruffle these to cool down. The ones that can be seen from the outside are stiff, small and packed closely together.

E - Beak
This is mainly used to catch food but is also used to groom feathers and as a weapon in penguin fights. Inside there are spiky spines pointed towards the throat that help in swallowing living food such as small fish.

F - Legs
Penguins have very short ones, which are used underwater for steering. On land, waddling seems to be the easiest way to walk.

Adaptation
Worksheet 15: A Day in the Life of...

Wow Fact

Seahorses can move each of their eyes independently so they can look forwards and backwards at the same time!

Can you imagine what it's like to be a completely different creature, in a completely different habitat?

- *Choose one of the animals listed below.*
- *Write a short piece of imaginative writing about a day in that animal's life. You should explain how it makes good use of the adaptations listed.*

Blacktip Reef Shark

The Blacktip Reef Shark has several rows of razor sharp teeth which they use to catch their prey.

Clownfish

The clownfish is immune to the poison of the sea anemone which it lives in. This helps them to avoid their predators.

Octopus

The octopus has eight legs with suckers on the underside. They use these suckers to help them walk around and to catch their food.

Adaptation
Worksheet 16: Save the Hammerhead

Wow Fact
More humans are likely to die from an encounter with a toaster than with a shark, yet 100 million sharks are killed by people every year!

Even scary sea creatures can come under threat – so we must all do our bit to protect them.

- *Read the article below.*
- *As a class discuss what should be done to protect Hammerhead Sharks.*
- *Design a poster to persuade people to help protect the Hammerhead Shark and its environment.*

Shark News

SEA LIFE

Monthly News

Save the Hammerhead

The smooth Hammerhead Shark has adapted over millions of years to become incredibly efficient. It has a long flattened head which mean its eyes are a long way apart. This allows it to keep a good look out for prey. The flattened head is also extremely streamlined and allows the shark to move through the water easily. They have many rows of teeth and once one row fall out the next row will move forward. This supply of teeth is never ending and ensures the Hammerhead can catch and eat its prey.

But this amazing animal has come under increasing threat from human activity and its numbers are getting lower and lower. Shark fin soup is a delicacy in Japan and China and more sharks are being hunted to meet the demand for this soup. Often the rest of the body is thrown away and just the fin (which is tasteless) is kept for food. Industrial fishing with big nets also has a damaging effect on sharks, with many being caught and killed by mistake while ships are fishing for other animals.

Humans are also damaging the Hammerhead Shark's environment through global warming. The shark has adapted over millions of years to live in waters of a specific temperature. Human's over use of fossil fuels and destruction of forests has meant that the world, and the oceans, are starting to become warmer very quickly. This quick change in the shark's habitat could have very serious consequences for Hammerhead Sharks as their prey may start to die off or move to different areas.