The Sea / Marine Life: Outcomes and activities

God is Provider Year 3

God provides through His creation (Creation Day 5)

As God made the living creatures to inhabit the Earth, He first made those that could exist in water and in the air. Some Christians accept the theory of evolution, believing that if each day was millions of years, then the 'lower forms' of life, birds and fish, existed millions of years before 'higher' land animals. However, the Bible speaks of the passing of 'evening and morning', (Genesis 1), before each new day of creation. These passages point to 24-hour days. God said that His creation was good. To believe that birds and fish developed into higher land animals, through evolution, one must believe that there was death and suffering. That is to say, one species died out and gave way to a new species. It is therefore impossible to believe that God created animals over millions of years, involving death and suffering, (fossils), and at the same time, believe that God's creation was 'good'. Death and suffering came into existence because of Adam and Eve's original sin.

Our response to 'God is Provider'
Because God is a provider, I will…

- Trust in a mighty, supernatural God.
- Care for the universe He has created.
- Appreciate the greatness of God and recognize that He is in control of all He has made.
- Recognize that God is Lord and King of the universe and has everything in control.
- Thank God for the things He provides

Key questions
What does it mean to be created 'according to its own kind'?
What does God mean when He said His creation was 'good'?
How can we help to take care of God's creatures?
How does God use the ocean to provide for us?
What is an ecosystem?
Why would we call the ocean an ecosystem?

Activities
- Classify different type of sea creatures e.g. mammals, crustaceans, fish, whales, coral, mollusks.
- Visit a sea shore of possible and observe shore life.
- Compare marine life on rocky shores, sandy shores, coral reefs and in the deep sea.
- Compare differences in sea life between tropical waters and Arctic/Antarctic waters.
- Make a study of whales. Chart their migration.
- List types of sea creatures used for our food.
- Discuss problems of over fishing and impact of pollution on sea life.
- Discuss impact of rising sea temperatures on marine life including coral reefs.
- Discuss near extinction of rare species. What can be done?
- Make a poster to encourage care and protection of marine life.

Values education Year 3
God is Provider
Faith
We can have faith that God will provide all our needs.

Faith is…

- putting our trust in someone
- believing that a person will do as they say
- believing that someone or something will act as they are meant to act
- being confident that someone in trustworthy

Who can we trust?
We can only trust those who have proven themselves trustworthy. God, our Heavenly Father can be trusted more than anyone.

Activities

1. We can say that we trust a chair because it always supports us. We know that it won't collapse under us. Name three other things that you trust and say why you trust them.
2. Name three people who you can trust.
3. Name someone you would not trust.
4. Why can we trust God?
5. Name three Bible characters that had great faith. What did they trust God for?
6. What miracles can God do for His people today when we trust in Him?

What does the Bible say about faith?
Philippians 4:19 God will supply all your needs according to His riches in Christ Jesus.
Hebrews 11:6 Without faith it is impossible to please God.
Matthew 17:20 Faith as a grain of mustard seed.
Matthew 21:21-22 If you have faith, you can say to this mountain, 'move' and it will move.

Practical Science: Finding out about salt water

Make an Egg Float in Salt Water

http://www.sciencekids.co.nz/experiments/floatingeggs.html

An egg sinks to the bottom if you drop it into a glass of ordinary drinking water but what happens if you add salt? The results are very interesting and can teach you some fun facts about density.

What you'll need:

- One egg
- Water
- Salt
- A tall drinking glass

Instructions:

1. Pour water into the glass until it is about half full.
2. Stir in lots of salt (about 6 tablespoons).
3. Carefully pour in plain water until the glass is nearly full (be careful to not disturb or mix the salty water with the plain water).
4. Gently lower the egg into the water and watch what happens.

What's happening?

Salt water is denser than ordinary tap water, the denser the liquid the easier it is for an object to float in it. When you lower the egg into the liquid it drops through the normal tap water until it reaches the salty water, at this point the water is dense enough for the egg to float. If you were careful when you added the tap water to the salt water, they will not have mixed, enabling the egg to amazingly float in the middle of the glass.

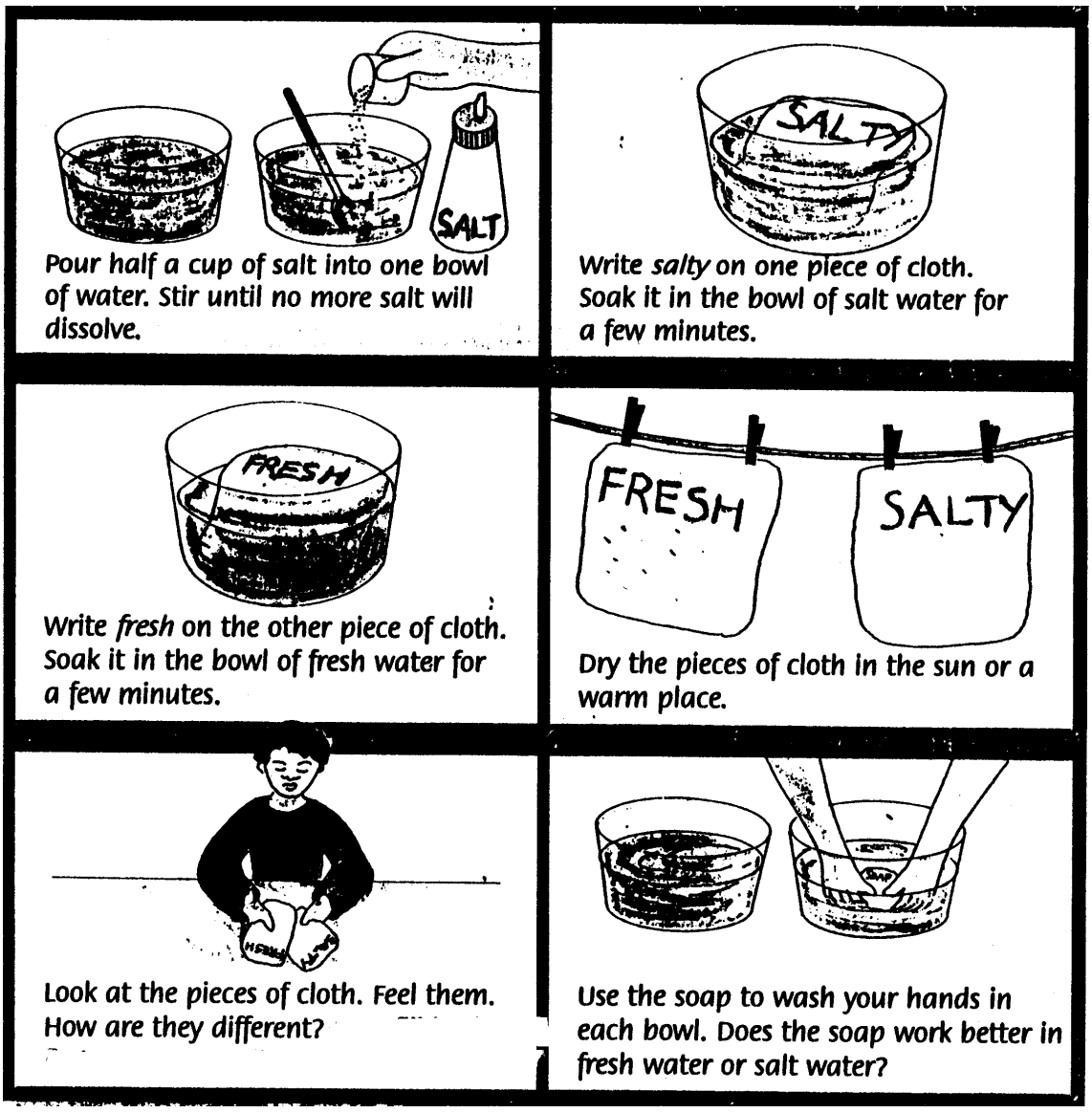
Practical Science: Fresh or salty?

Discussion:

Have you ever tasted sea water? What is it like? What makes it taste the way it does? What do we know about salt? After this experiment write down what you have found out.

What you need:

- Two 1-litre bowls of water.
- Salk
- A spoon
- Two squares of cotton cloth
- Soap
- A water-proof pen



Art Year 3

God is Provider

Topic: The Sea

Biblical connection: God has provided for us through the sea.

Bible art as a wall display: The great catch: Luke 5:1-11: Make a collage of the boat, nets, disciples and fish. Use netting from sacks to represent nets, or if you can't find any, glue string to the page in a crisscross design to look like a net. Draw a boat and cut it out. Children can add paper fish.

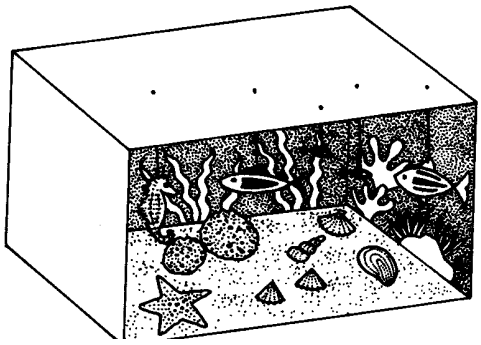
1. **Drawing, painting and collage**

Ask students to:

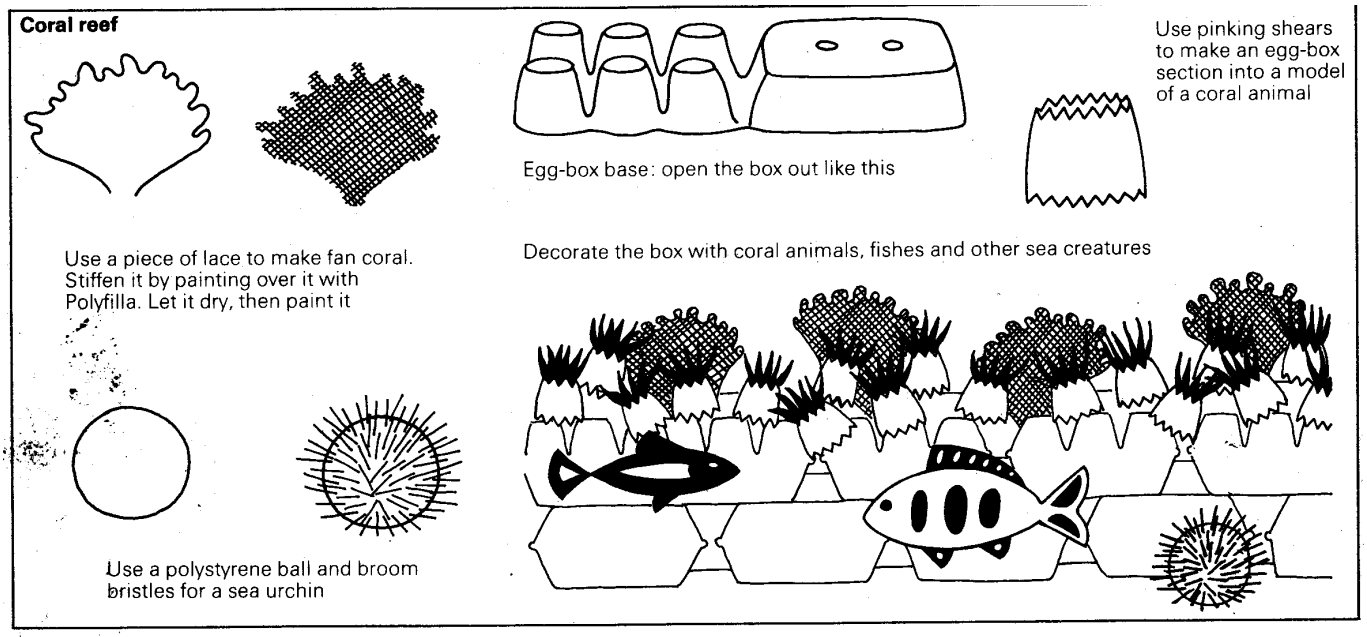
- Create a sea with thin paint, Draw colourful fish and sea creatures. Cut them out and stick them on the painted sea background.
- Make a line drawing showing a stormy sea

2. **Construction**

- Make mobiles of sea creatures, e.g. a matching pair of fish shapes can be placed back-to-back, glued or stapled half way around, stuffed with shredded paper, then gluing/stapling is completed to make a 3D fish which can be hung from the ceiling.
- Make a seashore scene in a sand tray or in a cardboard box. Crabs can have concertina folded legs. Add sea shells and smooth stones. Make sea weed from paper.



Make an underwater coral reef scene from egg cartons.



Thinking Skills

The sea 1 List 5 things that could never be placed in water.	**The sea 2** What if: All fish disappeared
The sea 3 List the disadvantages of, and make improvements to: A fishing rod and reel	**The sea 4** Draw a row boat. Now make it: **B**igger **A**dd something to it **R**eplace something
The sea 5 How many ways can you: catch a fish?	**The sea 6** Find 10 different uses for: A fishing net

The sea 7 "People should not be allowed to go swimming at the beach." Why might someone say this?	**The sea 8** Think of things that are the same: A wave A plastic drink bottle
The sea 9 "coral" is the answer. Make up 5 questions.	**The sea 10** Brainstorm solutions for: How to encourage people not to litter on beaches.
The sea 11 Design a machine for: Digging worms out of the sand	**The sea 12** Design a crab catcher using: String A plastic container Seaweed A rock

Fish

Draw a picture in each box.

1

A fish has gills to breathe with.

2

People cannot breathe in water. We have no gills.

3

Scales are hard. Scales give a fish a hard coat.

4

When the water is warm, the fish's blood is warm. A fish is as warm as the water it swims in.

9

When the water gets cold, the fish's blood gets cold.

10

Because a fish's blood can get cold fish are called cold blooded animals.

11

Fish have bones.

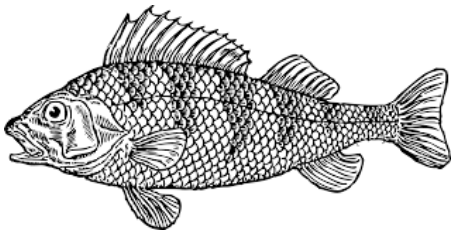
12

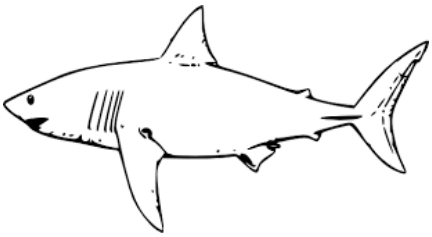
Some fish are narrow. They can swim fast in the water. 5

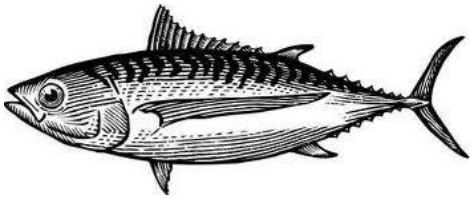
A fish has fins and a tail to swim with, and steer with. 6

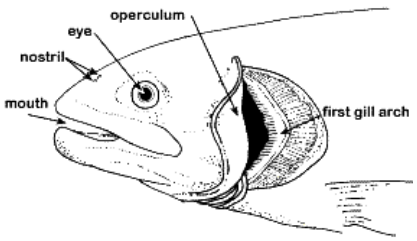
Some fish eat seaweed. Some fish eat insects. 7

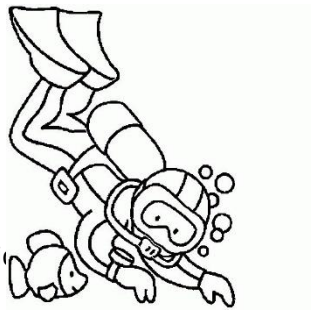
Some fish eat other fish. 8

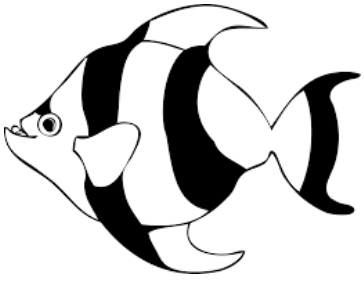












Oceans of Fun

Welcome to our island home,
I love the world beneath the sea.

Our beach has lots of soft smooth sand,
with pretty shells to hold in your hand.

Under the ocean waves we will see,
Beautiful corals and fishes free.

Sea stars watch fish playing in schools,

darting in and out, while we are cool.

Graceful manta-rays float by,
with flippers like wings,
they seem to fly.

They pass pretty pearls in oyster shells,
sparkly treasures we love so well.

Beyond the shore in the deep blue sea, the turtles swim so peacefully.

Shellfish

Draw a picture in each box.

1

Some shellfish have only one shell.

2

Some shellfish have two shells. These shellfish can open and close their shells.

3

Most shellfish with one shell live on rocks. These shellfish have a large foot to help it cling to the rocks.

4

The shellfish also uses its foot to move with.

5

Most shellfish with two shells live in the sand or the mud.

6

These shellfish use their large foot to dig in the sand.

7

A clam hides from other animals by doing this.

8

Some shellfish eat tiny plants and animals that float about in the water.

9

Most shellfish live in the sea.

10

Some shellfish live in rivers or lakes.

11

Shellfish belong to the snail family. Snails live on land.

12

Many shellfish are good to eat. Some people eat snails too.

13

Fish like to eat shellfish too.

14

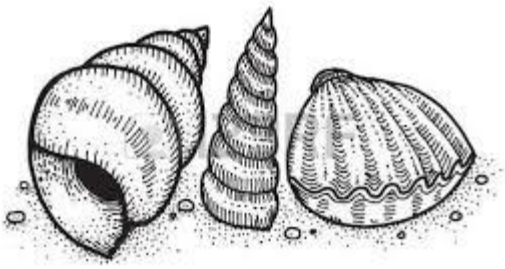
The shell of a shellfish <u>protects</u> it from small fish.

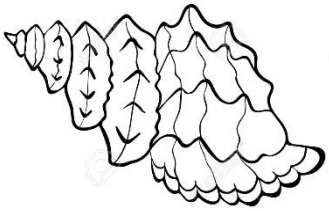
15

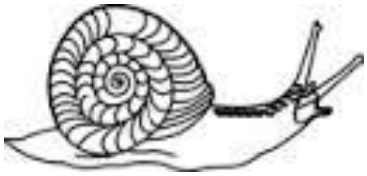
A shellfish does not have a backbone. It has a shell instead.

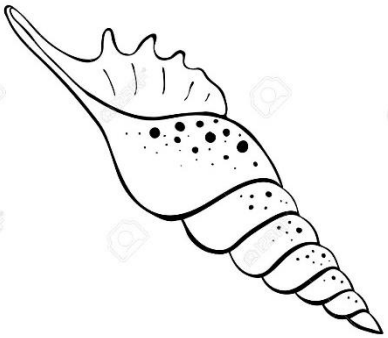
16

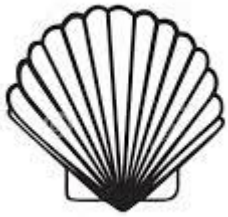
Shellfish picture collection

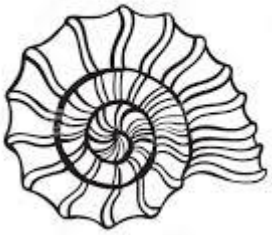








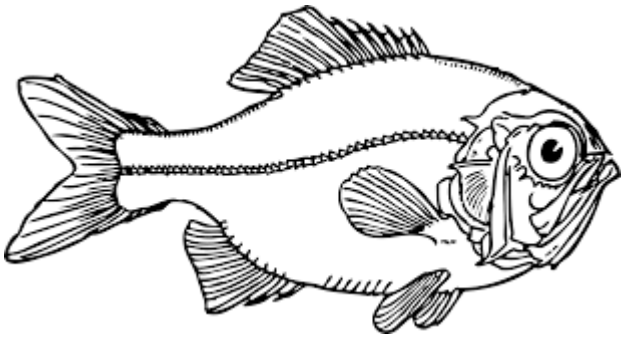




Work sheet 1

Fish are vertebrates

This means that they have backbones.
A Fish's skeleton is joined to its backbone.
Most fish have skeletons made of bone.
But sharks and stingrays have a skeleton made of cartilage.
Cartilage is softer than bone. It can bend, but it is very strong.

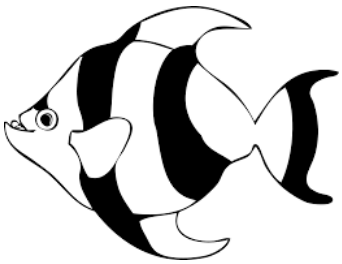


1. Draw a fish with a backbone.
2. What do sharks and stingrays have instead of bones?

Fish are cold blooded

Their body temperatures change with the water around them. Fish swim to a new area when the water temperature changes.

Fish that live in lakes will swim at the bottom of the lake in winter because the water is warmer there. Then they will swim to the surface of the lake in summer because the water is no warmer there.



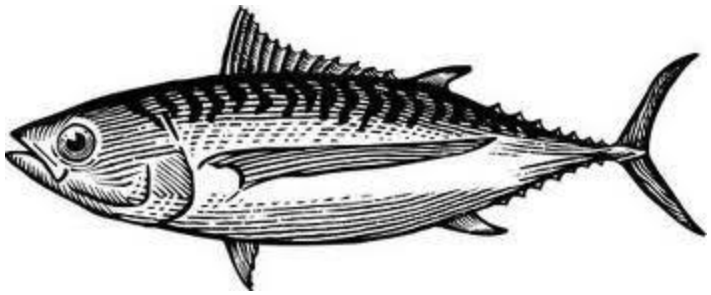
1. Why do fish swim to a new area when the water temperature changes?
2. What other animals do you know of that are cold blooded?

Work sheet 2
The body of a fish

All fish have a body, a head and a tail.
Some fish like tuna have a torpedo shaped body. This is a long, narrow shape which helps them swim quickly through the water.

Fish have fins. Fins help a fish move through the water. Angelfish use their fins to swim between rocks.

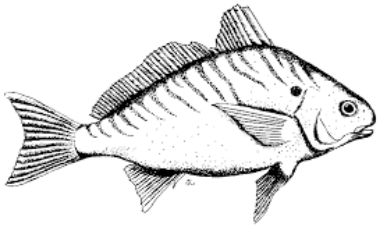
Fish have scales. Their skin is covered with scales. Some fish have scales that are smooth. Others have rough scales that look like tiny teeth. Scales help protect fish from predators. (Predators are other animals that want to eat the fish.)



1. What is a torpedo shape?
2. How does a torpedo shape help some fish?
3. How do fins help fish?
4. How do scales help fish?

Work sheet 3
How fish breathe

All living things need air to stay alive. We breathe air through our lungs. Air is made up of several gases including oxygen. The main gas that we need to breathe is oxygen.
Sharks and other fish breathe the air that is in the water. Water moves through a fish's mouth and over its gills.

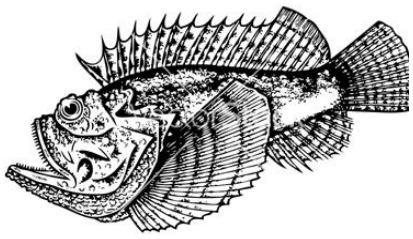


The gills take oxygen from the water. The oxygen enters the fish's blood. Animals need oxygen in their blood to live.

1. Draw a fish and label the gills.
2. What do fish use their gills for?
3. What is oxygen?
4. Where do we find oxygen?

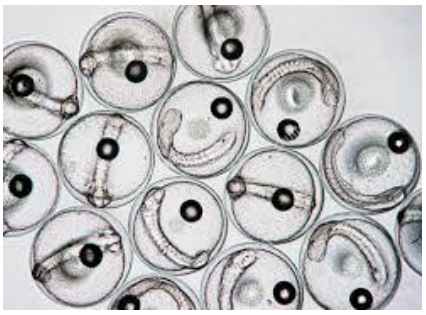
What fish eat
Fish eat many kinds of food. Most fish eat other animals including other fish. Some fish eat plants.

Poisonous fish
Some fish are poisonous to eat.
Some have a poisonous sting when you step on them. The stone fish has spines along its back which are attached to sacs of venom. Stone fish live in tropical coral reefs.



1. What do fish eat?
2. What might happen if you stand on a stone fish?
3. Where do stone fish live?

Worksheet 4
Eggs and young



Most fish hatch from eggs. Female fish usually lay many eggs at one time. Other fish eat many of the eggs before they can hatch.

Some fish, like sharks, give birth to baby sharks. The baby shark grows inside the mother shark's body until it is born.

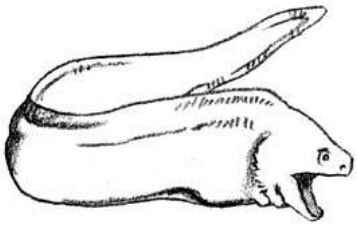
1. How are most baby fish born?
2. How are baby sharks born?

Some fish do not look like fish

Is a seahorse a fish?
Yes! Even though it may not look like one, a seahorse is a type of fish.

A seahorse can twist its curly tail around things to stop it from being washed away in the sea's current.

Is an eel a fish?
Yes! Although it looks like a snake, an eel is a type of fish.



One type of eel is a moray eel. It has a flat body like a ribbon with fins along the top and bottom to help it swim.

1. Draw a seahorse using its tail.
2. Moray eels have f___ like other fish.

Work sheet 5

How fish protect themselves

Schools of fish

Some fish swim in schools because they are much safer from predators than if they were swimming alone.

Fish swimming together in one group look like a big cloud. This scares away hungry predators.

Fish can change colour.

Some fish are pale and striped during the day but at night the stripes disappear and the body turns red.

Red cannot be seen in the dark, so at night the colour red keeps the fish safe from predators.

1. What is a predator?
2. Why is it good for a fish to swim in schools?
3. Why are red fish safer at night?