FISHY WORKSHEET

About fish

There are many different types of fishes. Fishes are grouped [classified] into three groups: (1) Jawless fish, (2) Bony fish, and (3) Cartiligenous fish (sharks and rays).

How do fish breathe?

Fish have adapted [changed] to live in aquatic [watery] places. Instead of lungs they have gills for breathing. Fish take water through their mouths and their gills extract oxygen from the water around them.

Micromesistius Australis / Southern blue whiting

What are fish made of?

Fish are vertebrates which means they are animals with backbones. Fish skeletons are made mostly from bone (so they are often called the bony fishes). Sharks and rays have cartiliginous skeletons made of calcium phosphate and other minerals. Fish are usually covered in scales that have a layer of slime over them. This helps their movement through the water.

Fish mouths

The mouth of a fish gives us some clues about how the fish captures its food. For example, fish with long skinny snouts hunt for food in cracks and crevices. Some fish have wide mouths for gulping and others have tiny teeth for nibbling. Other fish have larger sharp and pointy teeth for ripping and tearing in to their prey.

Fish eyes

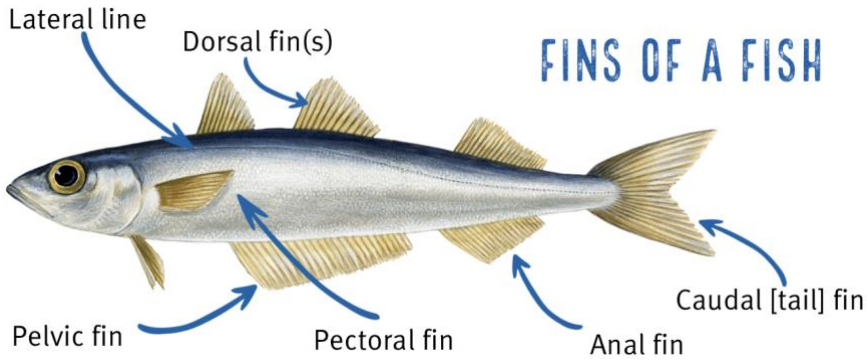
Some fish have eyes on the top of their heads. These fish spend more time looking up for prey and are most likely bottom dwellers [fish that spend time on the bottom of the sea]. Eyes on either side of the head suggest a fish spends time swimming above the bottom.

Colour and camouflage

Another adaptation that helps with survival is camouflage. The colours and patterns on a fish help it to blend in with its surroundings. Many fish are lightly coloured on their underside and darker in colour on their topside. This makes the fish less obvious to predators looking from above (into the darker depths) or below (looking up towards the lighter surface).

Why does a fish have fins?

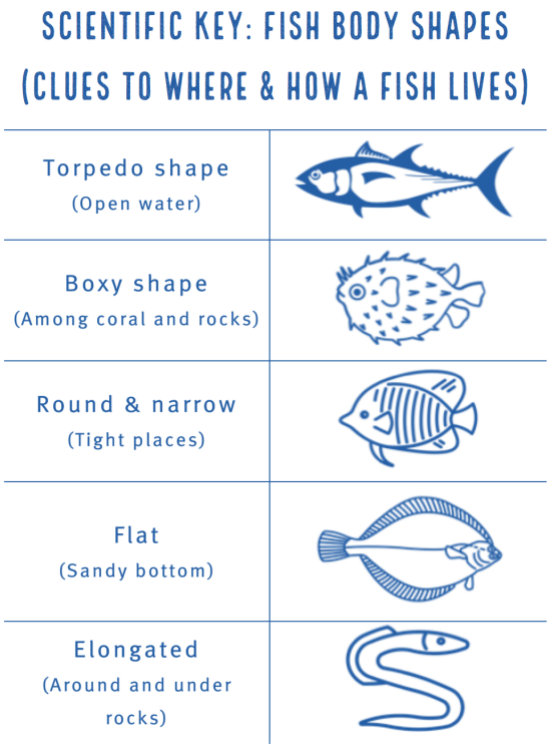
Fish have several different fins [see picture]. The dorsal fin



[on their back] helps the fish to stay stable. The caudal or tail fin helps the fish move through the water. Pectoral and pelvic fins are for steering, balance and braking.

Fish shapes

Fish come in a big variety of shapes and sizes. Fish shapes have adapted to suit their habitat and how they hunt (and are hunted). Most torpedo shape fish live in open water and are excellent swimmers. There are no rocks or reefs to hide under or behind in the open water, so fast swimming is a good strategy for survival! Some fish have flattened bodies and lie on the seafloor waiting for prey to swim by. A scientific key like this one helps us figure out what the shape of a fish might mean.



Read more: Visit DK findout to explore more about fish, fish insides and skeletons.

Read more: Visit DK findout to learn more about the skin and scales of a fish.

QUESTIONS

How well did you read?

(1) Fish take water through their mouths and their _____ extract oxygen from the water around them.

a. Gills
b. Lungs
c. Legs
d. Eyes

(2) Fish are usually covered in _____ that have a layer of slime over them. This helps their movement through the water..

a. Skin
b. Furry flaps
c. Scales
d. Feathers

(3) _____ fins are for steering, balance and braking.

a. Caudal or tail
b. Pectoral and pelvic
c. Dorsal
d. Upper

(4) Most _____shaped fish live in the open water and are excellent swimmers.

a. Square
b. Flat
c. Long and thin
d. Torpedo

(5) The _____ on a fish help it to blend in with its surroundings.
Square

a. Fins
b. Colours and patterns
c. Eyes
d. Mouth

Test your knowledge further: Take the DK findout True False quiz about fish.

Extension: Select a species of fish to research and create your own factsheet

OBSERVE AND 'DECODE' A FISH

[NOTE: This could be completed during the field trip (2.4) or when visiting your local aquarium or virtual aquarium or in the classroom whilst observing a fish]

PREPARATION [estimated time to complete 30+ minutes]

Read the fishy fact sheet.

IN THE PRESENCE OF A FISH (ideally a live one!) [60+ minutes]

Question 1. Observation is an important part of being a scientist. Draw a fish and label its body parts. Record your observations.

Question 2. Observe a fish and record your answers [using pictures and words] to the following:

a. What do you notice about the shape and size of the fish body?

b. Use the scientific keys to help you determine the shape is the fish?

c. How does this fish move?

d. How many fins does the fish have and which ones?

e. What shape is the caudal fin? Use the scientific keys to help you work out what this might mean about the way it swims?

f. Where is the mouth?

g. How does the fish breathe?

h. Where are the eyes?

i. Can you see if the fish has teeth? What kind of teeth? Can you find any clues to how and what it might eat?

AFTER

Question 3: Investigate the fish's habitat, predators, prey and lifestyle. Write a paragraph detailing findings[1].

Question 4: Compare and contrast your fish drawing with those of your classmates (from 2 above). What did you learn about scientific observation and drawing?

Question 5: Review and evaluation. What did you learn? What more do we want to learn?

[1] **Useful resources:** Dr Malcolm Francis about the Ubiquitous Spotty and Allan Burgess how easy Spotties are to catch.

ANSWERS

(1) ANSWER: a.

(2) ANSWER: c.

(3) ANSWER: b.

(4) ANSWER: d.

(5) ANSWER: b.