

Where Fish Live

TEACHER'S NOTES

What this topic is about

Adaptation. Not all fish can live in the same kind of waters. Fish can tolerate different environmental conditions. The key factors they have to adapt to are:

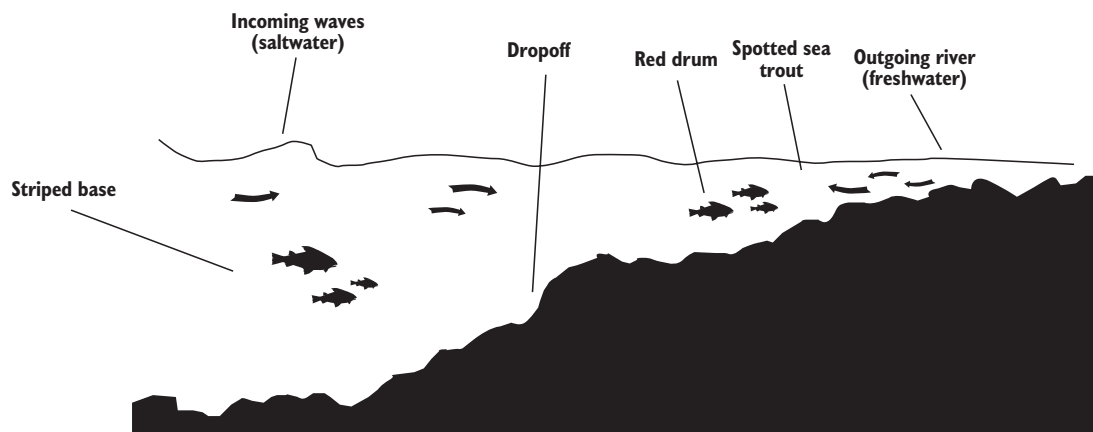
- Amounts of salt
- Amounts of oxygen
- Types and amounts of food
- Water temperature
- Hiding areas
- Breeding areas

What will pupils learn?

- About how different fish live in different habitats
- The way certain fish adapt and survive in different environments

Essential information

One major factor that separates fish is salt. Some fish cannot live in areas where there is much salt and others need salt in the water to live. However, some fish can live in both saltwater and freshwater.



Freshwater

Freshwater contains much less salt than the ocean. Most ponds, reservoirs, and rivers are freshwater.

Saltwater

Many kinds of fish live in the salty water of the oceans. A fish's kidney keeps the proper balance of salt in its body.

Brackish water

An estuary is where fresh water streams and rivers meet the salt water from the ocean. The salinity levels change daily with the flow of tides, rain, or drought. This water is termed "brackish". Changes in the amount of salinity determine which fish can live in the area.

Some fish live in saltwater, but swim up streams and rivers to spawn. These fish are called anadromous fish.

Where Fish Live (continued 1)

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Oxygen

Without an adequate supply of oxygen in the water, fish cannot survive. Fish such as carp can live on less oxygen than fish like trout. Living plants within a lake or stream add oxygen to the water through photosynthesis - the process of using sunlight to make food. Oxygen can also enter water from the surrounding air. In a stream, moving water tumbling over rocks picks up oxygen from the air.

Decaying plants use oxygen from the water to decompose. Pollution of many kinds reduces oxygen in water. Chemicals dumped into water trap oxygen and take it out of the natural system. Thermal pollution, the heating of water through industrial use, reduces the amount of oxygen water can hold. Colder water can hold more oxygen molecules than warm water. Oxygen levels can change from one location to another in the same body of water.

Food

The amount and type of food available plays an important role in which fish will be present in a body of water. The amount of competition with other fish is also a factor.

Water temperatures

Each fish has a different range of water temperature in which it can survive. Although fish cannot always find the exact temperature they prefer, they are usually found in water close to that temperature.

Water quality

Fish must have water with adequate oxygen in which to live. Good-quality water will support more species of fish and greater populations of fish than polluted water. Water that is stagnant, polluted, or lacking adequate oxygen will not support large numbers of fish. Water quality affects fish species differently. Some fish can live in poorer water conditions than others. For example, carp can live in water that trout could not tolerate.

Cover

Aquatic plants, rocks, logs, or any other type of cover is a requirement for many fish. Fish choose certain types of cover for two main reasons. First, it provides them with protection from enemies. Second, it puts them in the best possible position from which to catch an unsuspecting meal that is drifting or swimming by.

Things your pupils can do:

● *Before their visit*

Use books, magazines, CD-ROMs and the Internet to find out all they can about different species of fish and their habitats.

● *During their visit*

Find out how many animals from the different groups covered by this topic they can find in the Sea Life Centre you visit. For example:

- Number of fresh water fish
- Number of fresh water animals without backbones
- Number of sea fish
- Number of sea animals without backbones

Where Fish Live (continued 2)

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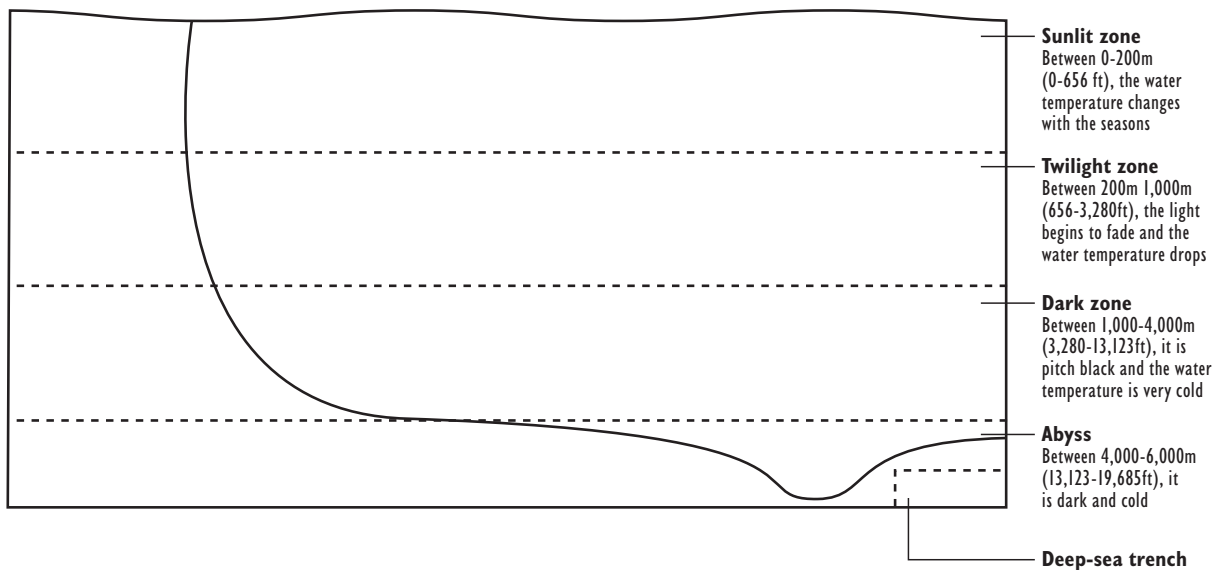
● After their visit

Key Stage 1

Remind your pupils that where different species of fish live depends on their ability to adapt to various conditions: amounts of salt and oxygen, types and amounts of food, water temperature, the level of competition from other fish, available hiding and breeding areas. In groups or individually, their task will be to investigate where certain fish live and why.

Key Stage 2

use books, CD-ROMs and the internet to find out what lives at different levels. Draw different sea life on top of the background chart of empty ocean, split into different levels/depths.



Answers to Pupil Worksheet activities

Key Stage 1 activity

- 20 Wrasse
- 30 Butterfly blenny
- 10 Tompot blenny
- 40 Bib
- 24 Pipefish
- 8 Atlantic seahorses

Key Stage 2 activity

- A. 800
- B. 1,000
- C. 3,800
- D. 5,000
- E. 2,500
- F. 600
- G. 11,000
- H. 10,911