

Sea Life!

TEACHER'S NOTES

What this topic is about

In a nutshell, what lies beneath. The oceans cover over two-thirds of our planet, yet mankind is only starting to explore the world beneath the waves. By re-creating natural habitats, a visit to a Sea Life Centre will take your pupils on a journey through the amazing underwater kingdom. This topic provides a general introduction to a largely unknown world.

Sea Life is committed to:

- promoting education and awareness of our oceans
- only displaying creatures which can flourish in our environment
- pioneering breeding programmes
- rescue and rehabilitation of sea creatures in distress
- exposing global issues of concern via the SOS Conservation and Rescue campaign

Sea Life believe whales, dolphins and certain species of shark should not be kept in captivity. As for the rest – we try and make them feel at home. Water quality, temperature, salinity and oxygen levels are constantly monitored to maintain optimum living conditions. Lighting, plant life and even water movement accurately replicate those found in the wild, offering your pupils a true portrayal of the many types of marine habitat – the only difference being that the creatures in our centres are safe from the dual dangers of pollution and predators.

What will pupils learn?

- How to describe and classify different kinds of sea life, animals and plants
- About different marine habitats
- The differences between invertebrates and vertebrates

Essential information

Two-thirds of the earth is covered by water that is more than 100 metres deep. Until very recently, we knew little about the seas and oceans – and even less about what happens in the deepest sea. We have better maps of the moon surface than we have of the sea floor.

There are several reasons why this part of our planet is so hard to explore.

- The enormous pressure under the water - a pressure that increases with depth. At the bottom of the sea, the water pressure is equivalent to a 100 tonne weight. A tennis ball taken to this depth would be squeezed ten times smaller. Few creatures can survive here.
- The lack of light. For the benefit of plant life, light can only effectively penetrate water to a depth of around 30 metres. The deepest seas - and even quite shallow ones - are pitch dark.
- The geography of the sea bed. While the exact details are unknown, we do know that there are mountains in places as high - and even higher - than those on land. The tallest sea mountain lies near the Tonga Trench between Samoa and New Zealand and is nearly 9,000 metres high - almost as high as Mount Everest.

The sea bed is not a place of stillness and silence, either. There are underwater volcanoes, like the Tonga Trench, and in places on the ridges along the mid-oceans, there are great spouts of extremely hot water called hydrothermal vents.

Many deep sea creatures are so unusual that they are difficult to classify. There are groups of animals living in the sea that are not found in any other habitat; the starfish group, for example, which also includes sea urchins, sea cucumbers and stalked sea lilies.

Sea Life! (continued 1)

TEACHER'S NOTES

By far the largest number of sea animals are the invertebrates - some with a hard outside skeleton, like crabs and lobsters; some with hard shells; and some with no skeleton at all - for example, the jellyfish

Most fish belong to one of two groups - those like the sharks and rays with a cartilaginous skeleton which is rigid but flexible and lightweight, resembling the bendy material in our ears and noses, and the bony fish with hard skeletons which are still rigid and flexible but slightly heavier, similar to our bones.

There are groups of animals that grow and branch like plants; or that live in huge colonies, like corals; and there are creatures like the barnacles that spend the early part of their lives as free-swimming animals, only to find a suitable rock and cement themselves to it, spending the rest of their lives lying on their backs and kicking their food into their mouths.

Then there are sea mammals - seals, whales, dolphins and porpoises among them. Birds and reptiles may also be occasional visitors to the seashore.

Plants growing in the sea range from familiar seashore algae - the seaweeds - to microscopic floating phytoplankton. They play the same role as green plants on land (photosynthesis).

Things your pupils can do:

● *Before their visit*

As this is a general introduction to a series of Sea Life topics, have your pupils design a simple key chart to the animal kingdom - invertebrates (molluscs, worms, snails, spiders, insects) and vertebrates (mammals, fish, reptiles, amphibians, birds). This could be developed to include more specific examples of sea animals and which group they belong to.

● *During their visit*

The different areas at Sea Life Centres are organized in a way that imitates natural habitats rather than scientific or animal groupings. That could mean areas like low tide (seashore) or muddy waters (estuary), or tanks for saltwater fish and freshwater fish that include other animals. Have your pupils make lists of some of the different animals they see in different environments. This could also be extended to a drawing activity.

● *After their visit*

Build on the previous on-site activity. Ask each pupil to prepare half a dozen two-part questions for the rest of the class - a 'where did I see it?' part, and a classification/grouping part.

Eg

I saw a conger eel in the rockpool. True or False?

The conger eel is a freshwater fish. True or False?

Pupil Work Sheet Note

The vocabulary activity can be done in groups, pairs or individually - even as homework. The words your pupils will investigate will depend on Key Stage level, ability and curriculum needs.

The Making Pictures activity for Key Stage 1 pupils can be adapted for use during most of the Sea Life topics or used as an after visit activity.