

## Science

- 1 Work with a partner. Look at the photos and describe the creatures. What is unusual about their appearance? Where do you think these creatures live?
- 2 In the text you are going to read about the creatures in the photographs. What would you like to know about them? Write two questions for each creature. Then read the text quickly to see if your questions are answered.

## Life at the bottom of the sea



For many years, scientists believed that there was no life in the ocean below 540 m. Conditions in the deepest part of the ocean are very challenging, and it's hard to see how they can support life. There is very little oxygen and light, and that means food is hard to find. And in the 'hadal zone' at 11,000 m, the pressure is one ton per cm<sup>2</sup>. But now, new research is revealing that the deep ocean is actually a world inhabited by amazing creatures. A team of scientists recently investigated the ocean off the coast of Japan. They discovered that there is an incredible range of life in the deepest ocean water. These animals adapted to their habitat over many millions of years, and developed clever ways of surviving in a hostile environment.



### Giant shrimp

Scientists found these huge amphipods in the Kermadec Trench, off the coast of New Zealand. Many animals that live in deep water grow to

a larger size. Shrimps are usually about 2 cm to 3 cm long; the largest of these measured 28 cm!

### Spookfish



Another team of researchers found a spookfish. At first, they thought that this strange-looking animal had four eyes, but it actually has two eyes that have two connected parts. One half of each eye looks up and the other looks down.

But the most amazing thing is that this fish uses mirrors, not lenses, to focus light into the back of its eyes. It's the only vertebrate species on the planet that does this.

### Black dragon fish

Like many of the fish that live in the deeper levels of the sea, the black dragon fish can produce its own light. What makes this fish different from the others is that it makes infrared light, as well as the usual green light. The fish also has a special organ, called a photophore, which allows it to produce light on the surface of its skin when it is frightened or when it wants to attract prey.



### 3 Read the text again. Then read the sentences and choose the correct alternative.

- 1 There isn't much life/light in the deep ocean.
- 2 The oxygen level/pressure is very high in the deep ocean.
- 3 The giant shrimps are ten/two times bigger than a normal shrimp.
- 4 The spookfish's eyes use mirrors/lenses to see.
- 5 Many deep-water fish make infrared/green light.
- 6 The black dragon fish makes light to protect itself/to see food.

### 4 Find words in the text to match the definitions.

- 1 difficult or dangerous  
h.....
- 2 a gas that animals need to breathe  
o.....
- 3 the outer layer of a person's or animal's body  
s.....
- 4 the place where an animal usually lives  
h.....
- 5 an animal that another animal eats  
p.....
- 6 very large  
h.....

### 5 Work with a partner and discuss.

The creatures in the text developed special features to help them survive in their habitat. What other animals can you think of with special features that help them? Describe where the animals live and what the features do.

#### ? DID YOU KNOW?

The Census for Marine Life estimates that there could be a total of between 500,000 and 10 million species in the sea. We don't know much about the deep sea. In fact, we know more about outer space than our own ocean floor.

### PROJECT

- 1 Work in groups. Choose one of these deep-sea creatures:

angler fish • giant spider crab • giant tube worm  
frilled shark • vampire squid

- 2 Find out information about the animal and find photos.

Where does the creature live?  
How big is it?  
What does it eat?  
What special features does it have?  
How do its special features help it to survive?

- 3 In your group, prepare a presentation of your animal for the class.

### VOCABULARY FOCUS

- adapt [v]:** to change to deal with a new situation  
**amphipod [n]:** a crustacean creature, like a shrimp  
**attract [v]:** to make something interested in something so that it comes to see or hear it  
**bottom [n]:** the lowest or deepest part of something  
**challenging [adj]:** difficult to deal with  
**clever [adj]:** effective and intelligent  
**coast [n]:** an area of land beside the sea  
**creature [n]:** anything that lives except plants  
**deep [adj]:** a long way down  
**infrared [adj]:** a type of light that can be felt as heat, but cannot be seen  
**inhabit [v]:** to live in a particular place  
**investigate [v]:** to try to find out the facts about something  
**lens [n]:** the part of the eye behind the pupil that bends light to produce an image on the retina  
**mirror [n]:** glass covered in metal in which you can see yourself or see what is behind you  
**organ [n]:** a part of your body that does a specific job  
**pressure [n]:** the amount of force that a gas or liquid produces in an area  
**range [n]:** a number of different things that are of the same general type  
**research [n]:** the detailed study of something in order to discover new facts  
**reveal [v]:** tell/show  
**species [n]:** a plant or animal group whose members all have similar general features  
**support [v]:** to help something to live  
**survive [v]:** to stay alive  
**vertebrate [n]:** an animal with a backbone