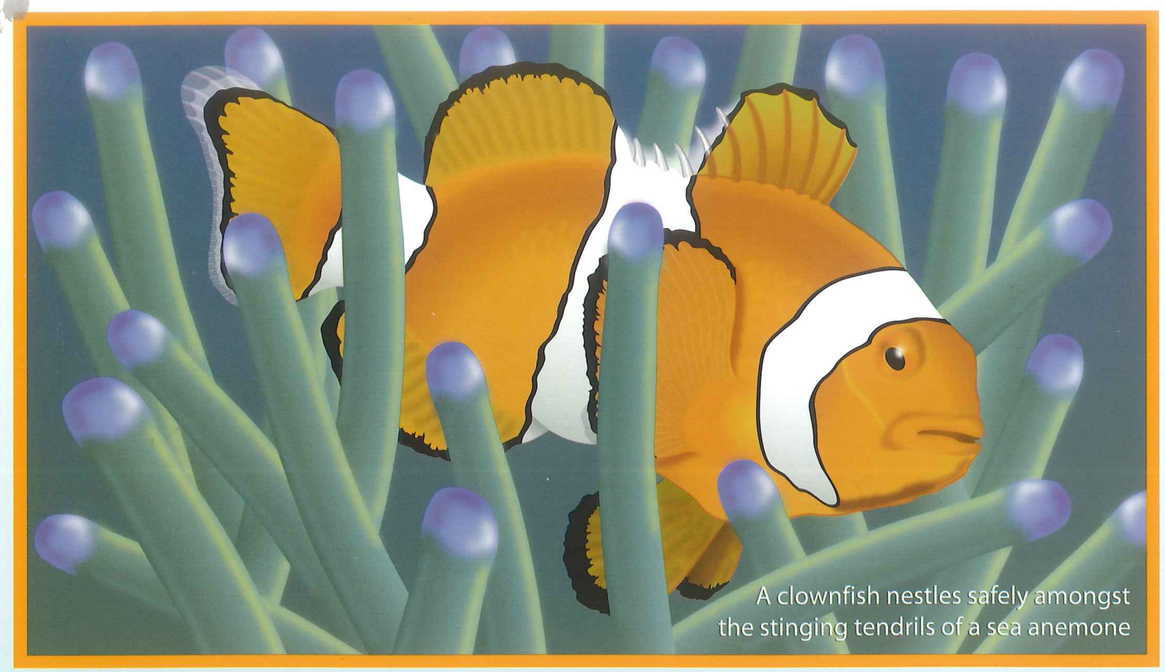

A clownfish nestles safely amongst the stinging tendrils of a sea anemone

Symbiotic Relationships

1 *Symbiotic* is a word that can be used to describe some relationships between living things. If a relationship is symbiotic, it means the beings in that relationship do special jobs for each other to help them both survive.

One example of a symbiotic relationship is the relationship between sea anemones and anemone clownfish. Sea anemones are found in coral reefs all over the world. They can be as small as a twenty-cent piece or as big as a beanbag. They have lots of tentacles covered with thousands of tiny stinging cells. When touched by fish, the cells shoot out poisonous harpoons. If a fish is stung, it is paralysed. The anemone then eats the fish. It spits out any pieces that it cannot break down and swallow.

2 Clownfish have a slimy coating of mucus, which is like the mucus you sneeze out of your nose. This makes them immune to the poison from the anemone. They live happily in between the tentacles where other fish will not dare to attack them. In return for a safe home, clownfish chase away any fish that try to eat the anemone's tentacles. Clownfish also keep the anemone clean by eating the food it spits out.

3 Another example of a symbiotic relationship occurs between a goby and a shrimp. The watchman goby is a type of tiny fish, about the size of a person's thumb. It lives on the bottom of the ocean. There are many bigger fish that would like to eat it. The ocean's currents constantly move the sand, which makes it hard for the goby to stay hidden.

The blind snapping shrimp, which is only half the size of the goby, also lives on the ocean floor. It is an expert at digging really fast. It spends most of its time shovelling sand to make a den.

The goby keeps watch while the shrimp searches for food

4 The shrimp and the goby both live in the den. The goby takes the blind shrimp out to look for food. The shrimp uses antennae to feel the goby's tail and sticks close to it. If there is danger, the goby warns the shrimp by wiggling its tail. They race back home together.

5 Some symbiotic relationships have nothing to do with sharing a home. In East Africa, yellow-billed hornbills live in trees and dwarf mongooses live in dens in the ground. They do, however, help each other out. The mongooses hunt in a large group. They race through the undergrowth searching for insects and small mammals. The hornbills fly above them in a flock and eat the insects that are disturbed by the mongooses.

6 While the hornbills fly they keep an eye out for enemies. If there are signs of danger, the harsh cry of the hornbill warns the mongooses to retreat. This unusual group hunts together every morning. If the mongooses are not out of their dens when the hornbills are ready, the hornbills call out to wake them up. If the mongooses are ready first they wait outside their dens, knowing the hornbills will turn up soon.

7 Symbiotic relationships do not only exist between animals. In Australia, ant-house plants grow from the tops of paperbark trees. The plant does not get food through its roots like most other plants do. Its roots are bare. Their only job is to cling to the tree. The plant survives because the ants serve up all its meals.

8 The plant is covered in spines that protect the ants from predators. The plant also provides

a ready-made ant nest inside the stem. There are walkways, nesting chambers, waste chambers and airshafts for ventilation. Leftover ant food and dung goes into waste chambers. There, it breaks down into compost and becomes food for the plant. Without this, the plant would die. Without the plant, the ants would have nowhere to live.

9 An Aspen sunflower would not be able to live without the help of ants either. The sunflower is very attractive to a certain breed of fly. The fly lays its eggs in the bud of the sunflower. When the larvae hatch they eat the flower and its seeds. With no seeds left to drop to the ground the plant cannot reproduce. Although the ants cannot catch or eat the flies, they can make life hard for them. They scurry back and forth across the sunflower and the flies cannot land long enough to lay their eggs. In return for their hard work the ants are rewarded with luscious food - rich nectar from the sunflower plant.

10 Symbiosis is an example of a good relationship between living things. Sometimes one animal or plant will use another living thing, without giving anything in return. Such a being is called a *parasite*, and is certainly not a nice, friendly symbiont.

Questions

1 A sea anemone catches its food by
- a making fish stick to its tentacles.
- b paralysing fish with its tentacles.
- c swimming after its prey.

2 What is not part of the symbiotic relationship between sea anemone and clownfish?
- a The clownfish move the anemone.
- b The clownfish clean the anemone.
- c The anemone protects the clownfish.

3 Why is it hard for the watchman goby to hide?
- a The watchman goby is as big as a person's thumb.
- b The watchman goby is blind.
- c Sea currents keep moving sand on the sea floor.

4 The yellow-billed hornbill eats
- a insects.
- b mongooses.
- c small mammals.

5 How do ants protect the Aspen sunflower from flies?
- a They eat the flies.
- b They scurry back and forth on the flower.
- c They take all the sunflower's nectar.

6 What is not an attribute of a symbiotic relationship?
- a protection
- b reliance
- c being a parasite

Vocabulary

Find words in the text that match the meanings below. The word is in the section shown in brackets.

7 Unable to move (1)
8 Long heavy spears (1)
9 A small home for an animal (4)
10 Small compartments (8)
11 Delicious and succulent to eat (9)

Grammar

*Find a **verb** (an action word) in these sentences.*

12 The shrimp dug expertly.
13 They race back home together.
14 The fly lays its eggs.
15 They only cling to the trees.

Back To The Text...

16 Symbionts help each other to survive.
- a true
- b false

17 Symbiotic relationships only exist between animals of the same species.
- a true
- b false

18 In which part of the library would you find this text?
- a fiction
- b non-fiction

Cloze

Cuckoos – Parasite not Symbiont

Choose from the following words to complete this cloze passage.

kick bird Cuckoo hatch nests

Cuckoo birds, unlike the hornbill, do nothing in return for the birds that help them. The Common ___19___ is a brood parasite and lays its own eggs in the nests of other birds. The clever cuckoo only chooses ___20___ with eggs that look like the cuckoo's eggs. In this way the other ___21___ doesn't realise it is raising another bird's chicks. Cuckoo chicks usually ___22___ before the host's eggs do. They then often ___23___ the other eggs out of the nest. Not very nice!

Challenge Option

Vocabulary: How many words can you make from the word SYMBIOTIC?