What are kingdoms?

To help us understand the number of living things on the planet, scientists organise them into groups, like 'the animals' or 'the plants'. This is called classification.

**To start with, all living things are divided into large groups called 'kingdoms'.**Scientists haven't quite agreed how many kingdoms there are, but many think that there are five: the monera, the protoctista, the plants, the fungi and the animals.

You probably know about the plants, animals and fungi (like mushrooms and yeast), but the monera and the protoctista may be new to you.



# BacteriaKingdom Monera

**Fact file**

**Name:** Kingdom Monera
**Type of organism:** Bacteria
**Numbers of species:** We cannot begin to estimate
**Where they are found:** Everywhere - all imaginable habitats

**Description:** Bacteria are single celled organisms. Their cells have no nucleus. It is this characteristic that makes them different from any other form of life. They can be rod shaped, spiral shaped or round, with hairs (cilia) or tails (flagella) that let them move around. They reproduce by dividing - populations of bacteria can grow very quickly.

**Need to know:** Bacteria can live everywhere - deep in the ocean in complete darkness, in acid pools, in alkali lakes and even deep within the Earth's crust where no other life exists.

# Kingdom Protoctista

**Fact file**

**Name:** Kingdom Protoctista
**Type of organism:** Protists including single celled algae, slime moulds and amoeba
**Numbers of species:** Tens of thousands - but probably many more
**Where they are found:** Almost everywhere - in the sea, in freshwater, and on land

**Description:** Protists are single celled organisms, and like animal and plant cells they have a nucleus. There are many different types of protists - some that act like plants and make their own food, and some that are more like animal or fungal cells.

**Need to know:** Some protists cause disease. One protist, called *Plasmodium*, causes Malaria - a disease that causes thousands of deaths each year.

# FungiKingdom Fungi

**Fact file**

**Name:** Kingdom Fungi
**Type of organism:** Fungi including mushrooms, toadstools and yeasts
**Numbers of species:** About 70,000
**Where they are found:** Almost everywhere - in the sea, in freshwater, and on land

**Description:** Fungi can be single celled organisms like yeasts, or multicellular (many celled), like toadstools mushrooms and moulds. Although they often look like plants, fungi do not produce their own food as plants do. Instead they live off dead or decaying plant or animal material.

**Need to know:** Fungi can be very useful - penicillin is made from moulds, yeast is used in baking and brewing, and we eat mushrooms on toast for breakfast!

# Kingdom Plantae

**Fact file**

**Name:** Kingdom Plantae
**Type of organism:** All plants, except for the simplest single-celled algae
**Numbers of species:** Around 400,000
**Where they are found:** Almost everywhere - in the sea, in freshwater, and on land

**Description:** Plants are multicellular (many celled) organisms. Their cells usually have thick cell walls, and they all have a pigment called chlorophyll that they use to produce their own food in a process called photosynthesis.

**Need to know:** There are many different groups of plants. Algae (like seaweed), mosses, ferns, pine trees, and flowering plants are different groups of plants, with different ways of living and reproducing.

# AnimalsKingdom Animalia

**Fact file**

**Name:** Kingdom Animalia
**Type of organism:** All animals, including you!
**Numbers of species:** 1,500,000 - but this is only a rough guess
**Where they are found:** Almost everywhere - in the sea, in freshwater, and on land

**Description:** Animals are multicellular (many celled) organisms. Their cells have no cell walls, and they do not produce their own food (as plants do).

**Need to know:** There are many different groups of animals, all living in different ways. Sponges, corals, worms, insects, crabs, snails, starfish, birds, mammals, reptiles, fish and amphibians are all animals. Explore Animal I.D. a bit more to find out how we classify animals.

SUPER SEARCHERS

Be a Super Searcher and see if you can find the answers to these ten questions in the section "Five Kingdoms of Living Things ".

Write your answers in the space provided.: When you have finished pass it to your teacher.

Question 1:

Living things are classified into 5 kingdoms. Can you name them?

We have started you off with the first letter.

 A\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

P \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

F \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

P \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Question 2: Can you complete this sentence?

The A\_\_\_\_\_\_\_\_\_\_\_ K\_\_\_\_\_\_\_\_\_\_\_ has animals with backbones: these are called v\_\_\_\_\_\_\_\_\_\_\_\_\_; and animals without backbones: these are called i\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Question 3:

Write down below 4 types of v\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ animals.

1.

2.

3.

4.

Question 4:

Now write down 4 i\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ animals.

1.

2.

3.

4.

Question 5: Now try this one!

The plant kingdom is divided into 2 subgroups. See if you can complete the words below to show each subgroup.

1. F\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ P\_\_\_\_\_\_\_\_\_\_\_\_.

2. N\_\_\_ - F\_\_\_\_\_\_\_\_\_\_\_\_\_\_ P\_\_\_\_\_\_\_.

6: Green plants contain c\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ so they can make their own food.

Question 7: This is quite difficult!

The green colour called c\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ found in a plant's leaf, together with sunlight allows carbon-dioxide and water to be combined to make food.

This process is called p\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Question 8: Now see if you can make up these sentences.

Fungi are not green because they do not contain c\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Fungi do not make their own food, they feed on v\_\_\_\_\_\_\_\_\_\_\_\_\_ and a\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ matter.

Question 9:

Protists are simple animals and are made up of o\_\_\_\_\_ c\_\_\_\_\_\_\_\_\_.

Question 10: Last one!!

Write down below an example of a protist.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_