



Why classify?

There is a huge variety of living things. Scientists **classify** them into groups so they can find out more about them. The living things in each group have similar features.

For example:

This gecko is an animal. This sunflower is a plant.



The three main groups

Every living thing is in one of three broad groups. The groups are:

- **animals**, which eat other living things
- **plants**, which make their own food
- **microorganisms**, which are tiny living things that you can only see with a microscope.




Animals

Scientists divide **animals** into two big groups. They are:

- **vertebrates**, which have bony skeletons, including backbones
- **invertebrates**, which do not have backbones.

Each of these groups is sub-divided into smaller groups. The table shows the five groups of **vertebrates**.

Group	Characteristics	Example
amphibians	damp skin, lay eggs in water	
reptiles	dry, scaly skin	
fish	scaly skin, fins, breathe underwater	
birds	feathers, wings, lay eggs	
mammals	hairy, live young, feed their young milk	

The three main groups (continued)

There are several groups of **invertebrates**. These include:

- worms
- animals with shells, such as snails
- arthropods, including insects and spiders.

Plants

Scientists divide **plants** into two big groups. They are:

- **flowering plants**, including grasses
- **non-flowering plants**, such as mosses, ferns and conifer trees.

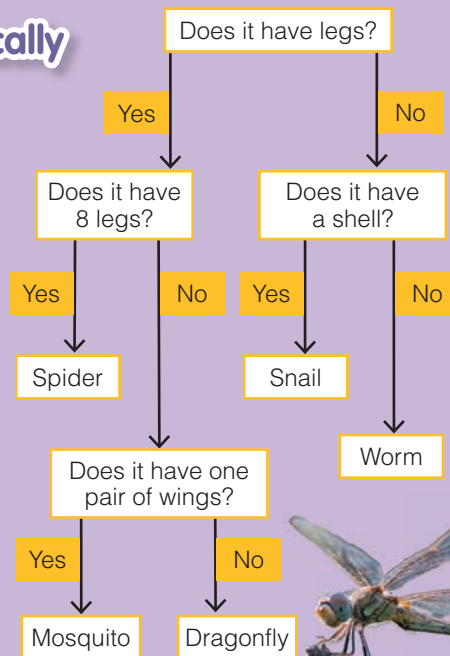


When your child finds an invertebrate, encourage them to observe it closely and to count its legs and wings (if it has any!). Make sure they care for it and return it safely to where it was found, or to a similar place.

Working scientifically

Classification keys

Riana makes a **classification key** to identify five invertebrates. She shows Dan how to use the key to identify an animal he has found at school.



Keywords

- Classify** ➤ To sort living things into groups depending on their similarities and differences
- Vertebrate** ➤ An animal with a bony skeleton and backbone
- Invertebrate** ➤ An animal without a backbone
- Classification key** ➤ A series of questions to help you identify a living thing



Go outside and find as many different types of invertebrate as possible.

- Classify them into groups depending on their number of legs, or whether they have a shell, or how many pairs of wings they have.
- Draw pictures of your invertebrates in their groups.



- 1 What do all plants have in common?
- 2 What is a vertebrate?
- 3 Name the five vertebrate groups.
- 4 Name two types of arthropod.
- 5 Look at the classification key in the Working scientifically box. Use the key to identify Dan's animal if it has eight legs.

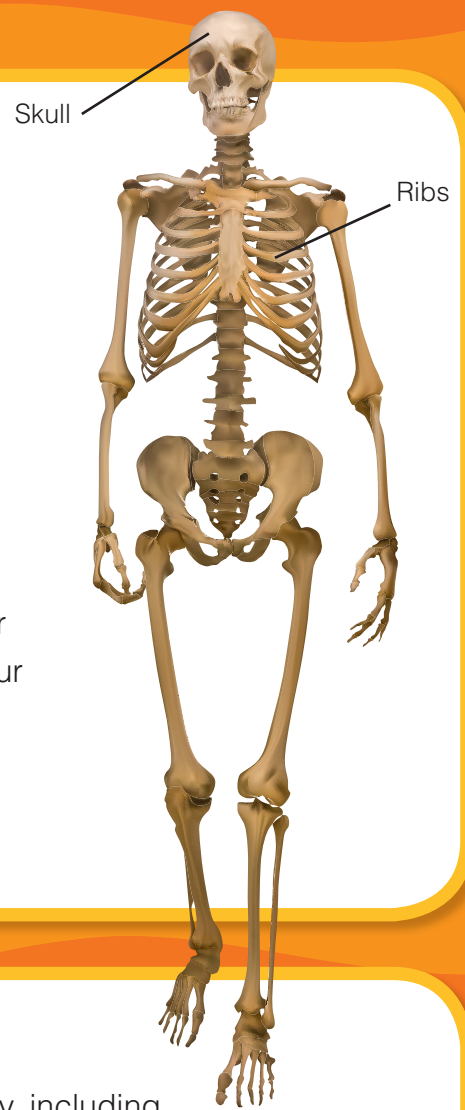
Skeletons

Imagine having no bones. What would your body be like?

Humans have hard **skeletons** inside their bodies. So do all other mammals, as well as birds, fish, amphibians and reptiles. Your skeleton is made up of more than 200 bones.

Your skeleton has three main jobs:

- **It supports you** – it holds you upright.
- **It protects you** – e.g. your ribs protect your heart and lungs, and your skull protects your brain.
- **It helps you to move** – e.g. your skeleton bends at your knees and elbows, where bones meet and join.

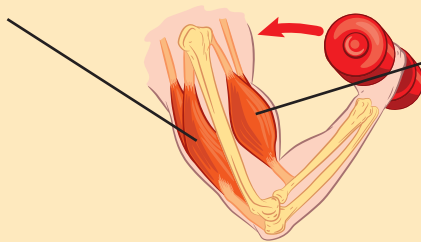


Muscles

You have more than 350 **muscles** in your body, including your heart. Your muscles work with your skeleton to help you move.

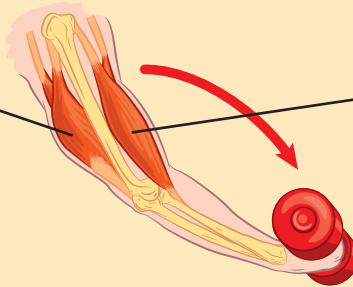
Muscles are joined to bones. When a muscle **contracts**, it gets shorter and fatter. It pulls up the bone it is joined to. When the muscle **relaxes**, it goes back to its original shape.

This muscle is relaxed



This muscle (the biceps) contracts. It pulls up the bone it is joined to at the bottom of the arm

This muscle contracts to pull down the bone it is joined to at the bottom of the arm



This muscle is now relaxed



Working scientifically

Comparing skeletons

Emma has two X-ray images. They show cat and snake bones. She compares the X-rays and writes down her observations.



Both animals have a backbone and ribs.

The snake has more ribs.



Ask your child to tell you why their skeleton is important.

Keywords

Skeleton ➤ The structure of bones in your body

Muscles ➤ Muscles help you to move

Contract ➤ When a muscle contracts, it becomes short and fat

Relax ➤ When a muscle relaxes, it returns to its original shape



Bend your arm, then straighten it. Can you feel your biceps contract and relax?



- 1 What is a skeleton?
- 2 A skeleton has three main jobs – what are they?
- 3 Name five animals that have skeletons inside their bodies.
- 4 Explain how your muscles help your arm to bend.



Healthy living

- 1 Draw lines to match each food to its main nutrient.

(4 marks)

Food

pasta
chicken
butter
fruit

Nutrient

fat
carbohydrate
vitamins and minerals
protein



When you are eating with your child, discuss the main nutrients in different foods.

- 2 Circle the correct **bold** word in each pair.

(5 marks)

The two nutrients whose main job is to provide you with energy are **carbohydrates** / **proteins** and **vitamins** / **fats**. The nutrients whose main job is to keep everything working properly are **vitamins** / **fat** and **carbohydrates** / **minerals**. The main nutrient that your body uses to repair damage is **protein** / **fat**.

- 3 What is a drug?

Tick the best answer.

(1 mark)

A substance that affects how your body works.

☐

A substance that harms your body.

☐

A substance that makes you behave strangely.

☐

A substance that makes you better if you are ill.

☐

- 4 Alcohol is a drug. What effects can it have on a person?

Tick the **three** correct answers.

(3 marks)

It can damage their heart.

☐

It might make them sick.

☐

It can damage their brain.

☐

It makes them drive more safely.

☐

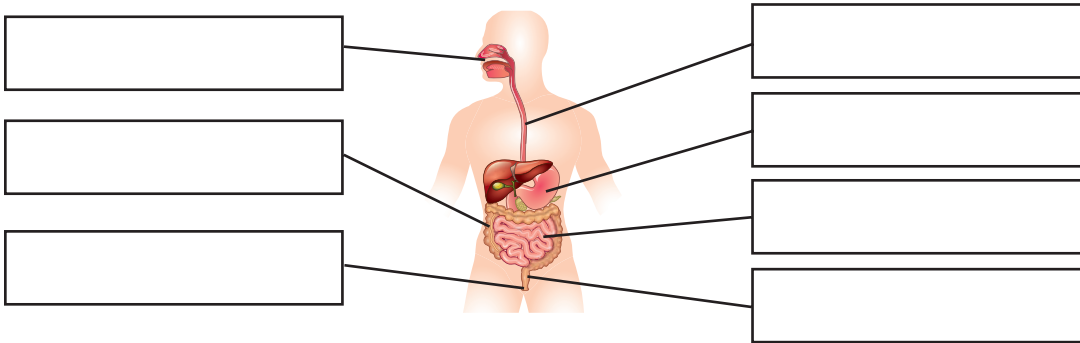
Total

13

Digestion

- 1** Fill in the missing labels using the correct words. **(7 marks)**

large intestine stomach small intestine
oesophagus mouth anus rectum



- 2** What happens in each of these parts of the digestive system? **(3 marks)**

a. Mouth

.....

b. Stomach

.....

c. Anus

.....

- 3** Draw lines to match each type of tooth to its job. **(3 marks)**

Type of tooth

Job

incisors

tear food such as meat

canines

grind and chew food

molars

bite off pieces of food

- 4** Look at the skull in the picture. Do you think the animal ate mainly meat or mainly plants? Give a reason for your decision. **(2 marks)**

Answer:

Reason:

.....
.....



Total 15