THE HUMAN BODY

STORY TIME

Read and listen to part 2 of the story *Care for the planet*.

ABOUT THE STORY

Ask and answer.

1. How does Olivia express interest in Matt's ideas? Is she listening actively?
2. How do you feel when a friend doesn't listen to you?
3. What can you say and do to show that you are actively listening to someone?

READ THE WORLD

Read some fun facts about the human body.

The human body is a living machine. It is made up of different systems which work together.

Our skeleton is part of this living machine. When we are born, we have about 300 bones in our bodies. When we are adults, we have only 206 bones! So what happens? Well, our bones fuse together as we grow so we have fewer bones as adults. More than half of all our bones are in our hands and feet - a total of 106!

You know that our immune system protects us from illnesses, don't you? But, did you know that our immune system starts with our stomach? Yes, our stomach ... It contains hydrochloric acid, which kills bacteria and viruses that can enter with food. You can also help your immune system by washing your hands before you eat!

Our heart is a strong muscle that works hard all the time to pump blood around our body. Did you know that during a lifetime, our heart has the power to produce enough energy to power a lorry to the Moon and back? That shows how strong our hearts are!

1 Read and answer the questions.

a Why do you think the human body is a living machine?

b Why do we have fewer bones as adults than as babies?

2 Look at the picture. What are the children doing? Take turns with a partner to guess the body function.

3 How do humans change over time? Discuss with your partner.

DISCUSS WHAT WE KNOW

Use the *Think-Pair-Share* thinking routine to answer these questions about the unit.

What are the three life functions the human body performs?

How do humans change over time?

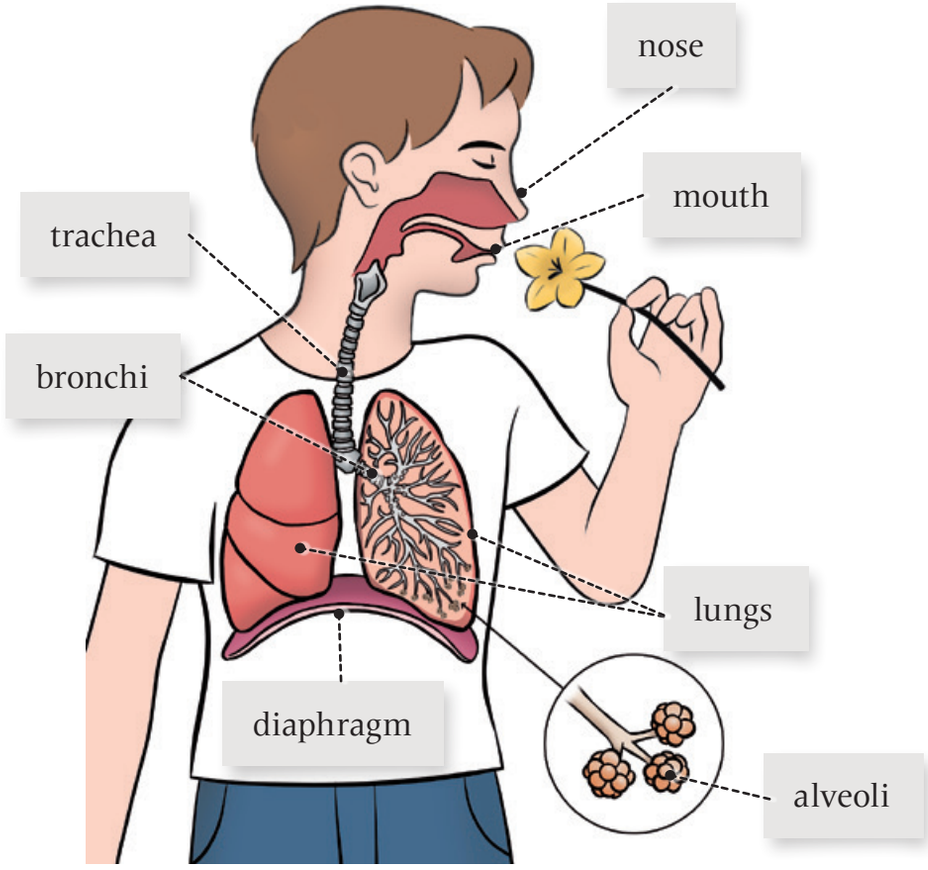
What do you need to do to stay healthy and happy?

Life functions: Nutrition

The human body performs three life functions: **nutrition**, **interaction** and **reproduction**. The function of nutrition includes digestion, excretion, respiration and circulation.

Respiratory system

The organs in the respiratory system help us breathe in **oxygen** and breathe out **carbon dioxide**.



① We breathe in air through our **nose** and **mouth**.

② The air travels down the **trachea** and into two tubes, called **bronchi**. They take air into our **lungs**.

③ The air inside the lungs goes into small air sacs, called **alveoli**.

④ The alveoli transfer **oxygen** from the air into the blood. The blood also transfers **carbon dioxide** into the alveoli. This is called a gas exchange. We breathe out the carbon dioxide from our nose and mouth.

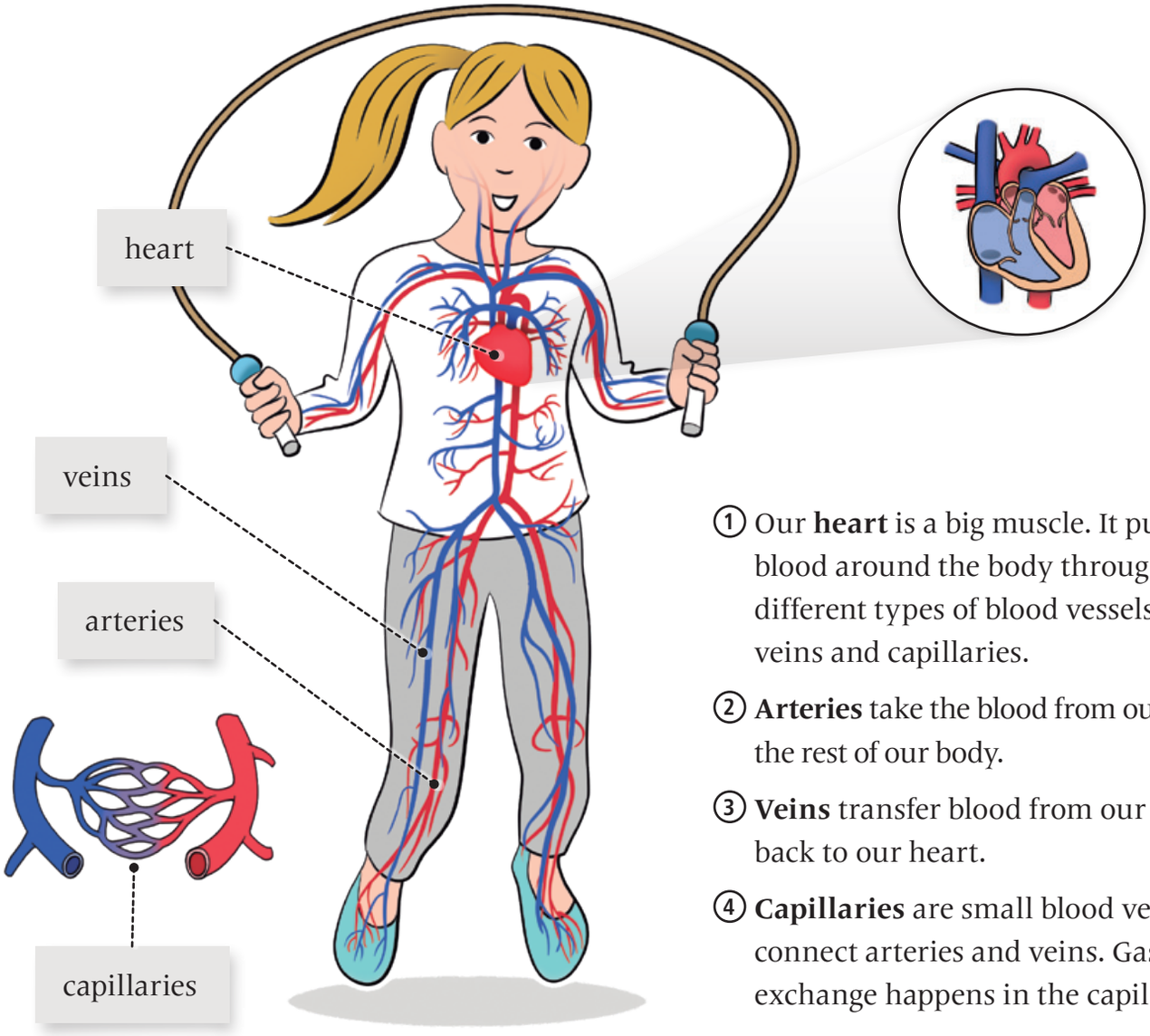
1 Listen to two friends talking. What are the steps for filling a balloon with air?

2 When you hear the word 'heart', what comes to your mind? Tell your partner.

I think of (*my pulse*); When I hear the word ..., (*exercising*) comes to my ... .

Circulatory system

The circulatory system transports oxygen and nutrients from our food inside our bodies. It includes the **heart**, **blood vessels** and **blood**.



① Our **heart** is a big muscle. It pumps blood around the body through three different types of blood vessels: arteries, veins and capillaries.

② **Arteries** take the blood from our heart to the rest of our body.

③ **Veins** transfer blood from our body back to our heart.

④ **Capillaries** are small blood vessels that connect arteries and veins. Gas exchange happens in the capillaries.

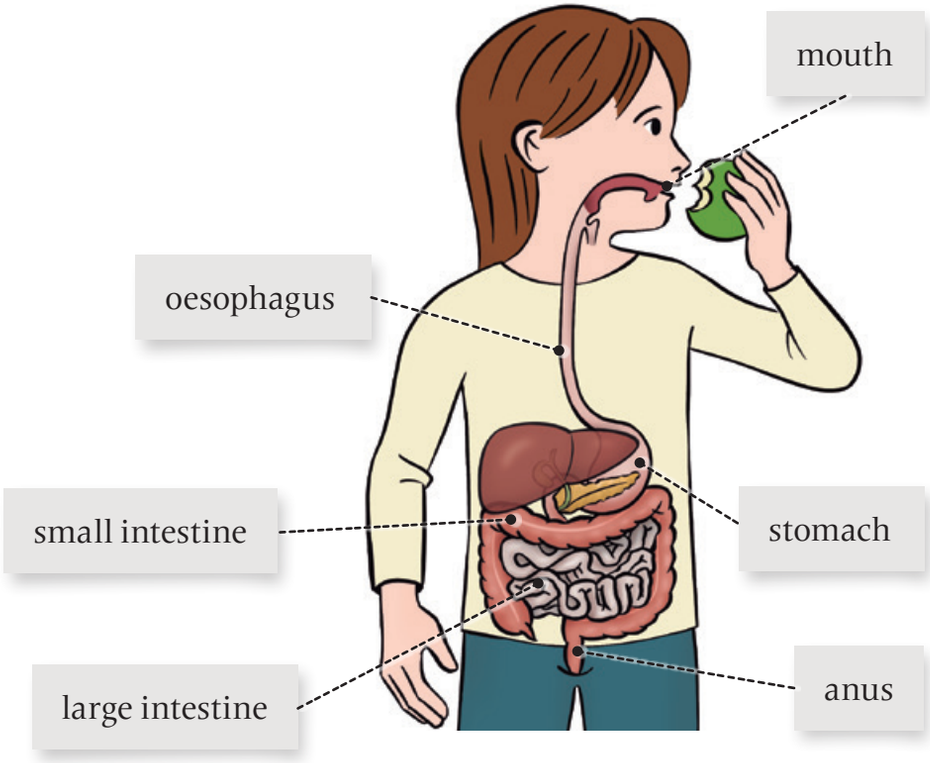
3 Talk to your partner about ways to improve your digestion.

Eat foods rich in (*fibre*); Avoid (*fizzy drinks*); Drink plenty of … .

4 Listen to a doctor talking about sweat. How does your body eliminate sweat?

Digestive system

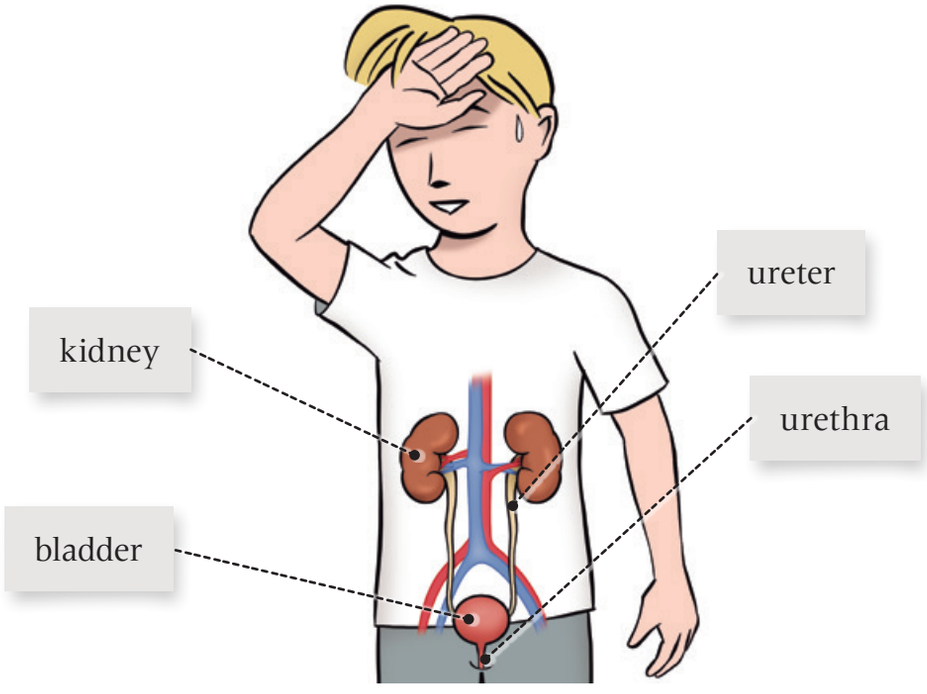
Our digestive system helps our body absorb **nutrients** from the food we eat.



1. We take in food through our **mouth**. In our body, digestion begins here.
2. Food travels down the **oesophagus** into our **stomach** and into the small intestine.
3. The **small intestine** separates the nutrients from the waste.
4. The waste passes into the **large intestine** and leaves our body through the **anus**.

Excretory system

The excretory system eliminates **waste** from our body.



1. Our **kidneys** make **urine** by filtering the blood and separating the waste and water in our body.
2. Two tubes called **ureters** carry the urine to the **bladder**. Having a full bladder makes you want to go to the bathroom.
3. Urine leaves the bladder through the **urethra**.
4. Our body also eliminates waste through our skin with **sweat**.

Life functions: Interaction

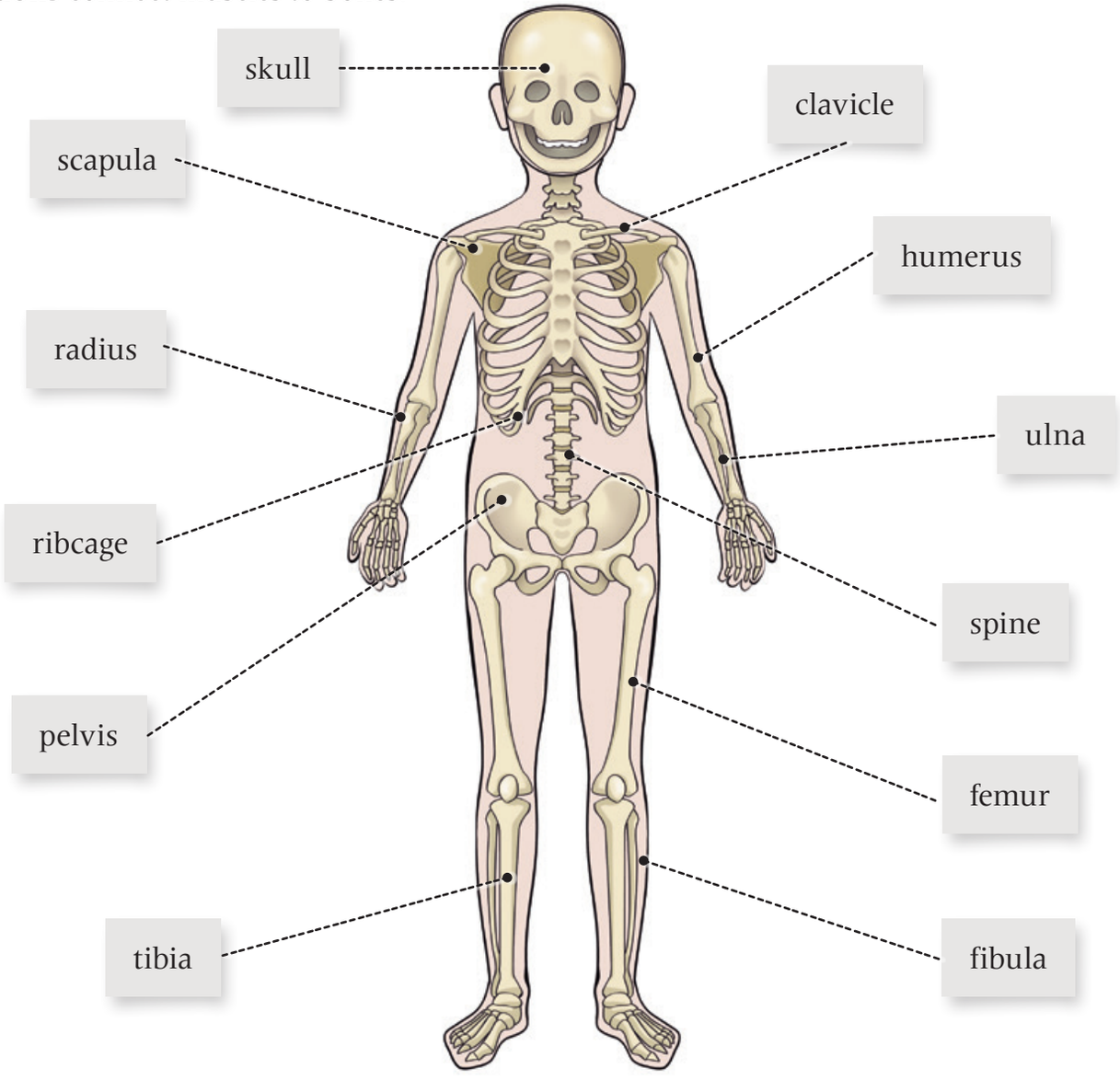
The function of **interaction** includes the locomotor system, the sense organs and the nervous system.

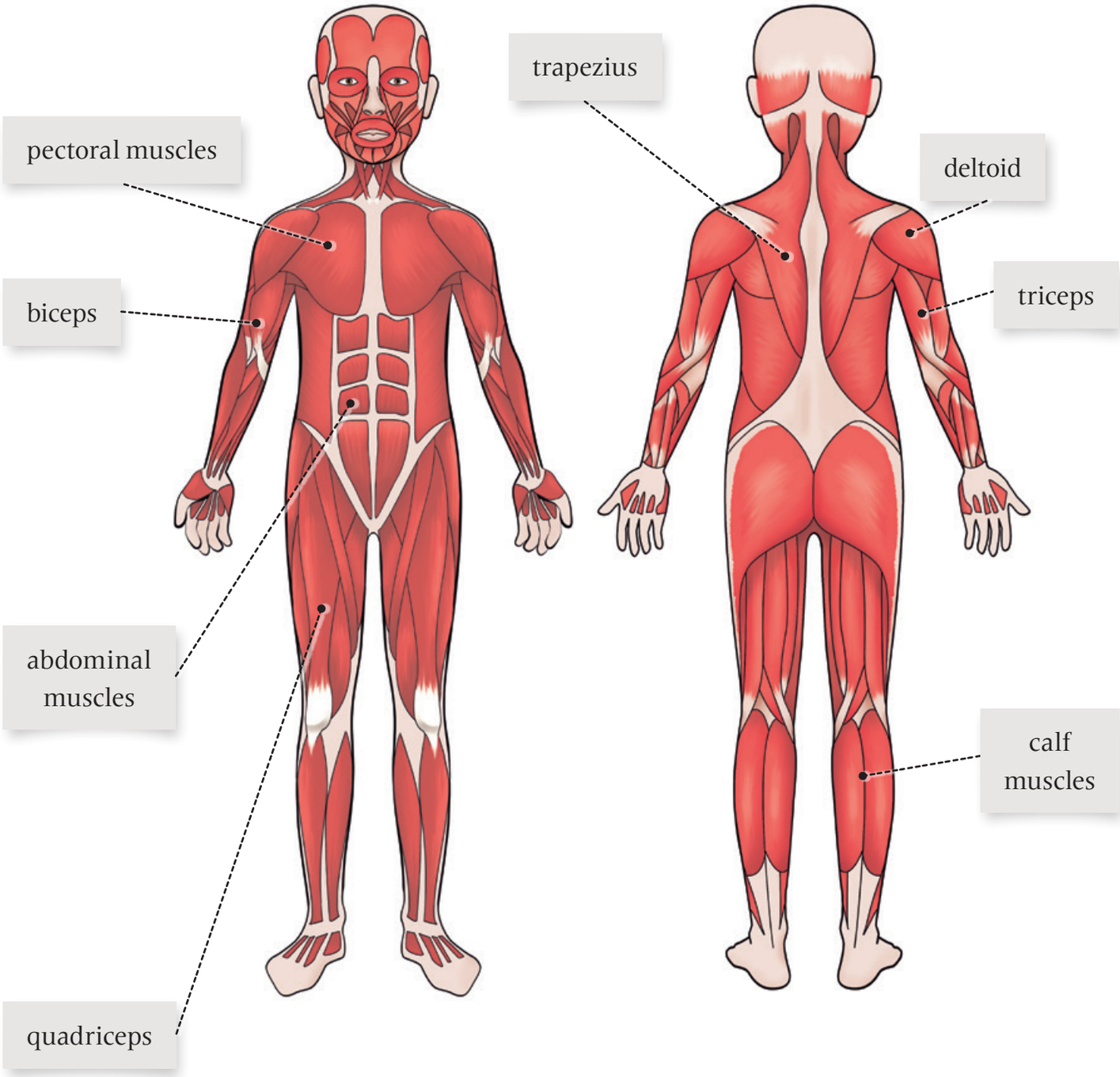
Locomotor system

The locomotor system consists of the **skeleton**, **joints** and **muscles**.

We need our skeleton to support our body and to protect our internal organs. Our skeleton consists of three parts: the **skull**, **torso**, and **limbs**. The skeleton's bones come together at **joints**. **Ligaments** connect the bones at joints.

Our body moves when we move these muscles. Muscles contract and relax when they receive messages from our brain. Muscles give our body shape. **Tendons** connect muscles to bones.



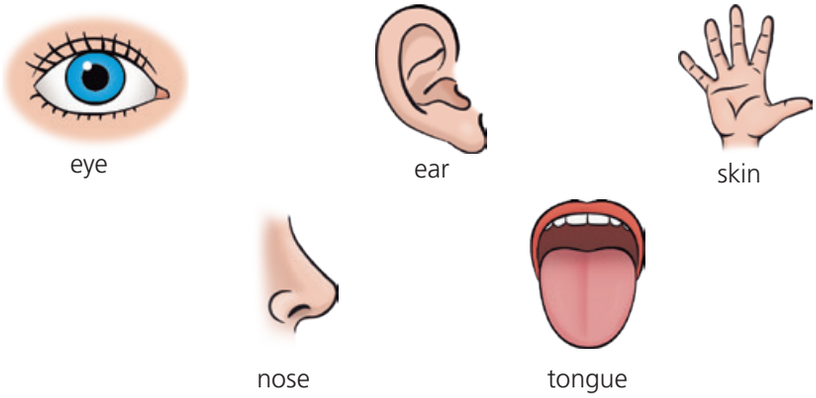


1 With a partner, think of ways you can keep your bones and muscles healthy.

Stay active to …;
Eat foods rich in (*vitamin D*) to … .

The senses

We have five senses: sight, hearing, touch, smell, and taste. Each one is associated with a sense organ.



Our **five senses** help us receive information about our environment. Nerves carry the information from the **sense organs** to the brain. The brain analyses and interprets this information. Then, the spinal cord and brain work together to send messages through the nerves to different parts of our body.

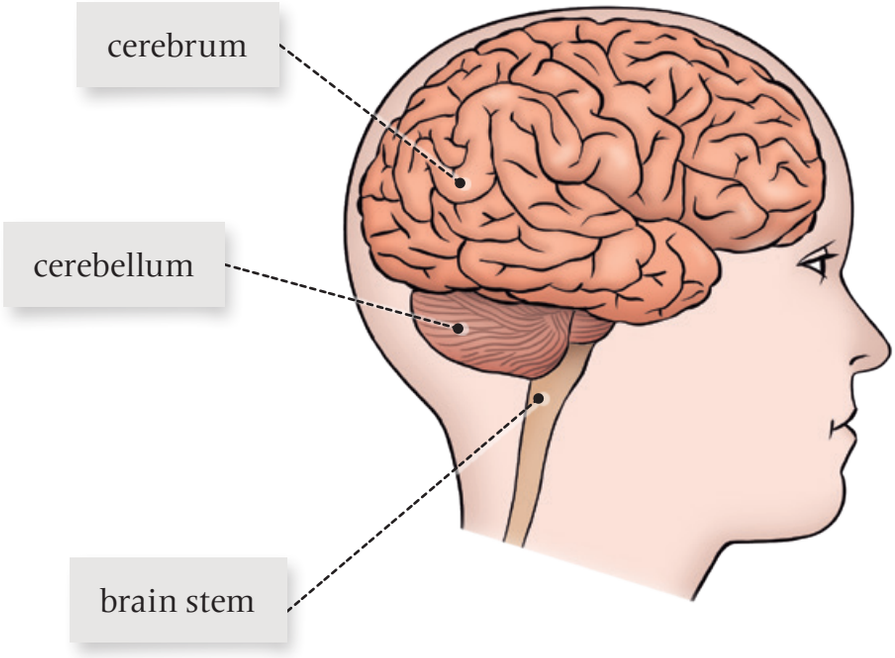
2 Listen and name the five senses the children describe.

3 What are some examples of voluntary actions and involuntary actions? Tell a partner.

Nervous system

The nervous system consists of the **brain**, **spinal cord**, and **nerves**.

Our nervous system controls every action we take.



① The **cerebellum** controls our movements, balance and coordination.

② The **brain stem** controls involuntary actions such as our breathing.

③ The **cerebrum** controls voluntary actions such as speaking.

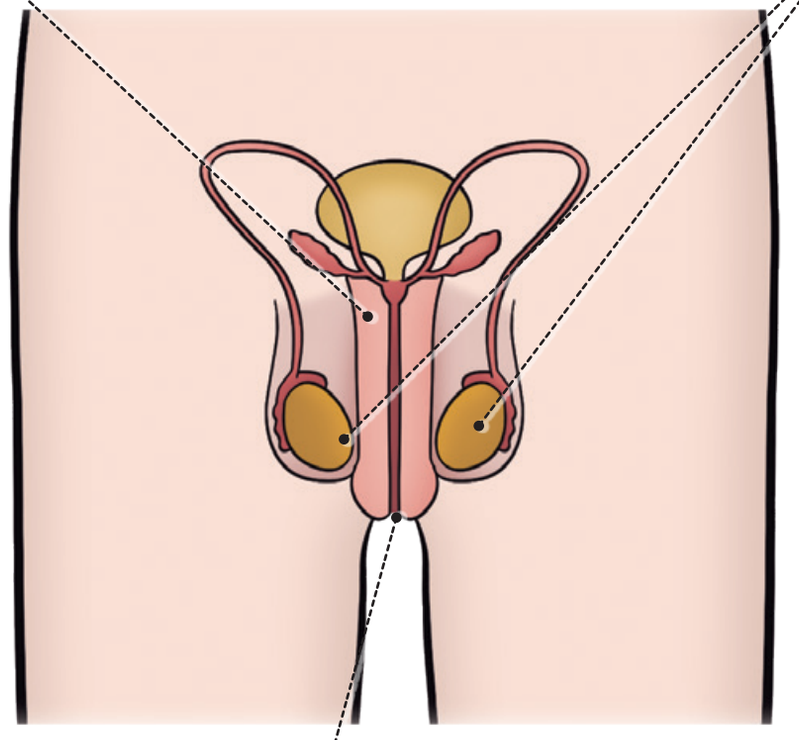
Life functions: Reproduction

Women's reproductive system differs from men's. As you grow, these develop until **puberty**. Reproduction occurs when male and female cells combine and make one cell.

Male reproductive system

Penis: The main reproductive organ. The testicles are connected to it.

Testicles: They produce the male cells.



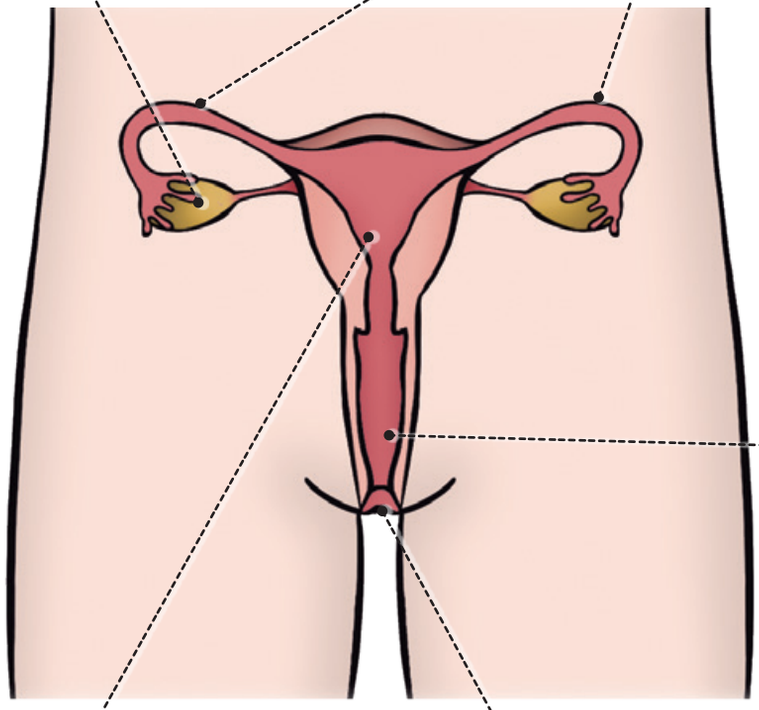
Urethra: A tube in the penis. Through the urethra, male cells and urine travel outside your body.

1 Listen to two students preparing for their Science exam. Which parts of the female and male reproductive systems are they describing?

Female reproductive system

Ovary: The main reproductive organ.

Fallopian tubes: They connect the ovaries to the uterus.



Vagina: It connects the uterus to your body outside.

Uterus: This is where the baby grows during pregnancy.

Vulva: It protects the reproductive organs.

2 Why is it important to accept our body? Tell a partner.

Because it helps us have (*self-esteem*) the way it is.

How do humans change over time?

Our bodies change continually and gradually from day to day. There are several stages in the life cycle of a human.

1


The **foetus** grows in the womb.

2


Nine months later, a **baby** is born.

3

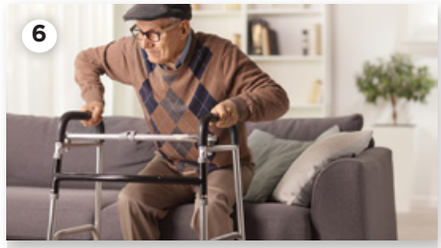

During **childhood**, children learn new skills.

4


Teenagers' bodies develop and go through **puberty** during **adolescence**.

5


At 19, **adulthood** begins. The human body is fully developed.

6


In **old age**, adults get shorter, slower and weaker.

How do emotions affect our body?

Emotions occur when we react to a person or a situation. Whenever we are scared, nervous or angry, our body releases **stress hormones** such as adrenaline.

Sometimes, emotions can make us feel uncomfortable or irritable. It is important we learn how to identify strong emotions and learn to communicate our needs.

We are all different, but we are all equal, and it is important to **respect** everyone. Accepting everyone for who they are, including people with disabilities, and participating in a diverse community are all parts of **inclusion**.

1 In pairs, talk about how you manage your emotions.

2 Listen and say what emotion Billie is feeling. Think about what happens when Billie talks to Holly.

3 What do you do when you meet a person with disability? Discuss in pairs.

Healthy and happy

To stay healthy, we must eat a **balanced diet**, have **good personal hygiene**, get a **good night's sleep** and do **regular exercise**.

1. With a partner, take turns to describe a healthy meal.
2. Listen to a nutritionist. What information can food labels give us?

Diet

A balanced diet is when we eat the right amount of a variety of food. Food is divided into five food groups.

Bread and pasta have fibre and carbohydrates.

Fruit and vegetables give us minerals and vitamins.

Dairy foods have a lot of calcium and protein.

Meat and fish provide protein.

Sweets provide instant energy. They should be consumed in moderation.

Hygiene

Personal hygiene is about keeping our body clean.

- Wash your hands before you eat and after you use the bathroom.
- Brush your teeth after you eat.
- Take a shower every day.

Rest

Our bodies need rest and sleep.

- You need about eight to ten hours of sleep a night to have energy for the next day.
- Your body releases hormones during sleep that help you grow well.

Exercise

Regular exercise is good for our body and minds. When we do exercise, we make our muscles and bones stronger. Exercise helps your brain release endorphins which help you feel happy. Also, your heart becomes stronger and blood circulation improves.

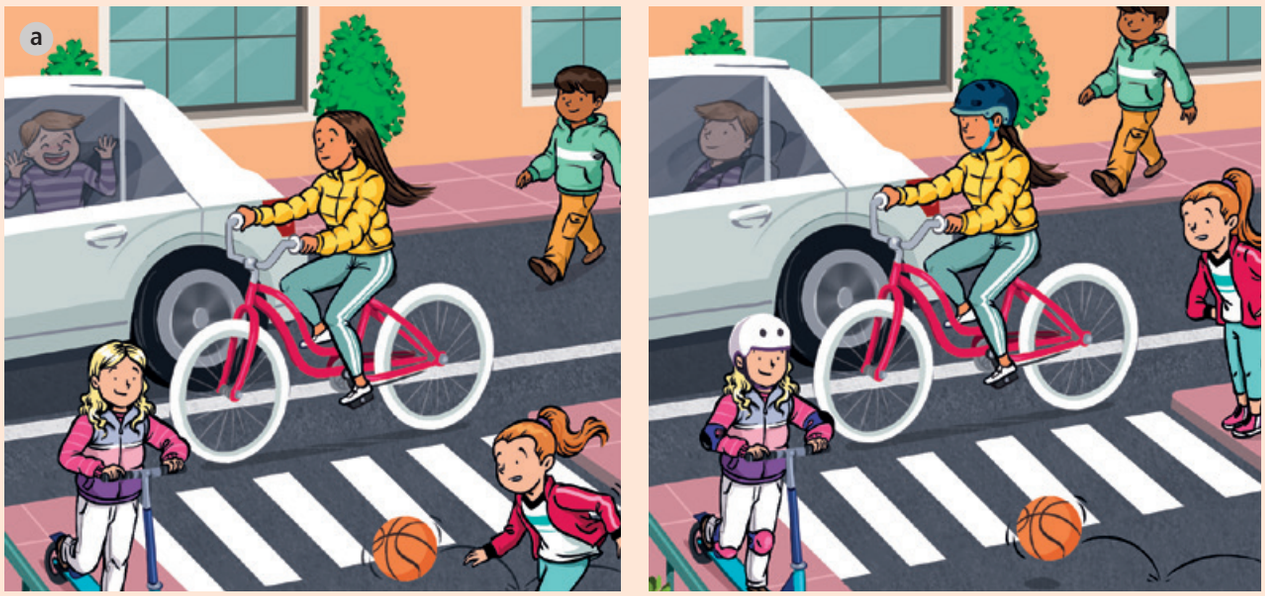
- You should do some exercise every day.
- Remember that too much exercise can harm your muscles and bones.
- Going for a walk in nature is also beneficial to your health. It can reduce stress and help you focus better.

LANGUAGE CORNER

Time to speak

1 With your partner, talk about the differences in the two pictures from last year. What was happening?

a



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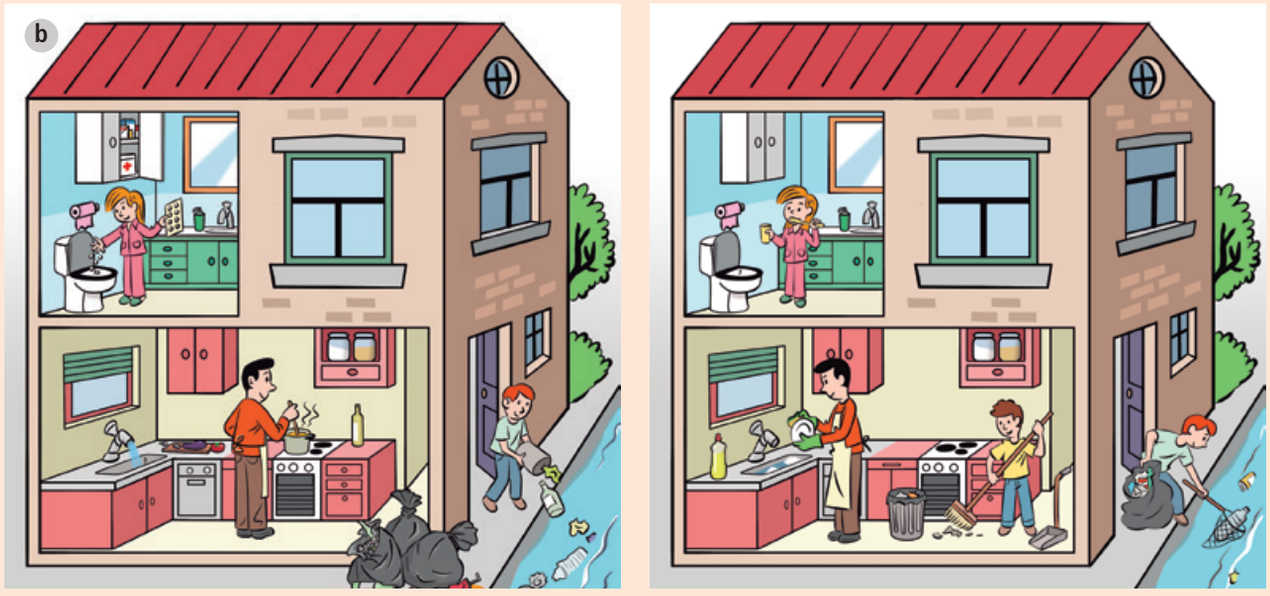


SPEAKING TIP

The girl (*was wearing*) ...; The girl (*was running*); The father (*was cooking*) ... .

SCIENCE WORKSHOP

HOW MUCH SUGAR OR SALT IS TOO MUCH FOR YOU

You are going to do an experiment to see what your limit is for sweet foods or salty foods.

Observe

In small groups, look at the photos and identify if these foods are salty or sweet. Do you prefer sweet foods or salty foods?

Materials:

- measuring cup
- six plastic cups
- water
- sugar and salt
- piece of cloth
- marker
- paper
- pencil

Test

1. Mix 90 grams of water with 34 grams of sugar. Label the plastic cup sugar 1.
2. Mix 200 grams of water with 20 grams of sugar. Label the plastic cup sugar 2.
3. Mix 200 grams of water with 12 grams of sugar. Label the plastic cup sugar 3.
4. Repeat the above process with salt instead of sugar.
5. Clean your mouth with water and dry your tongue with a dry piece of cloth.
6. Ask a partner to take a small amount of liquid from the first plastic cup and carefully put it on your tongue.
7. Decide whether it is sweet or salty. Your partner writes the results.
8. Continue with the other solutions in each plastic cup in turn. Switch roles and continue the process.

Make conclusions

a. Which solution could you taste?

b. Which solution could you not taste?

c. Which food was easier to detect: the sweet or the salty solution?

PUBLIC SPEAKING

Help explain your main idea with supporting information.

UNIT ACTIVITIES

Life functions: Nutrition

1 Complete the sentences in your notebook. Use the words in the box. Which body system do they describe?

lungs	trachea	oxygen	nose
carbon dioxide	alveoli	mouth	

You breathe in air through your nose and **(a)** ..... .

The air travels down the **(b)** ..... and into the bronchi. These take air into the **(c)** ..... . The air inside the lungs goes into small air sacs, called **(d)** ..... .

The alveoli transfer **(e)** ..... from the air into the blood. The blood also transfers **(f)** ..... into the alveoli. You breathe out the carbon dioxide from your **(g)** ..... and mouth.

2 What is the difference between arteries and veins?

Life functions: Interaction

3 In your notebook, define these words.

- **a** cerebellum
- **b** brain stem
- **c** cerebrum

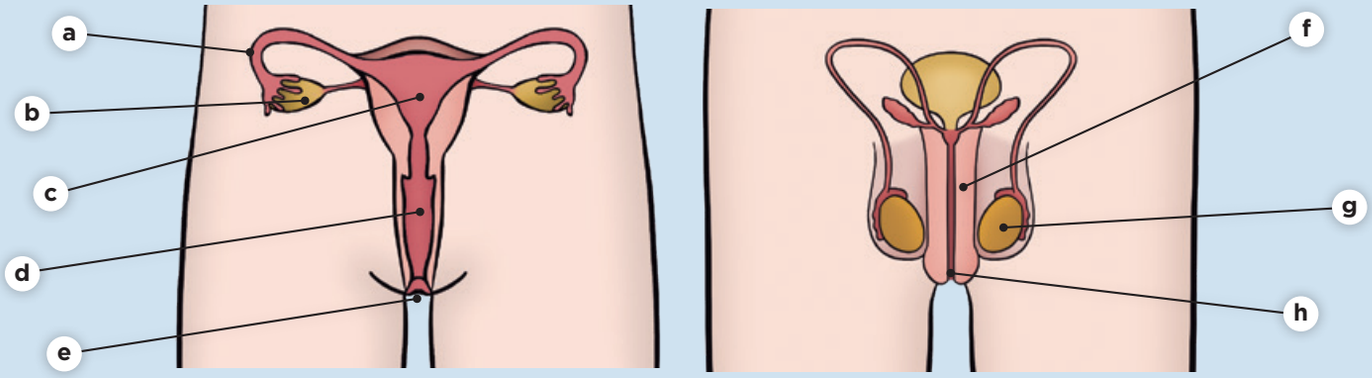
4 Match the sentence halves in your notebook.

a Your skeleton's bones join together ...	**1** ... they receive messages from your brain.
b Ligaments connect ...	**2** ... internal organs and support your body.
c Your skeleton protects your ...	**3** ... at joints.
d Your muscles contract and relax when ...	**4** ... muscles to bones.
e Tendons connect ...	**5** ... shape.
f Your muscles give your body ...	**6** ... the bones at joints.

Life functions: Reproduction

5 What are the main male and female reproductive organs? Write the answers in your notebook.

6 In your notebook, label the female and male reproductive systems. What does each part do? Provide a brief description.



How do humans change over time?

7 Listen to a podcast about puberty. Write three interesting facts in your notebook.

8 Use the *Colour-Symbol-Image* thinking routine to represent the following ideas.

What **colour** best represents 'baby'?	What **symbol** best represents 'sense'?	What **image** best represents 'life cycle'?
.....	.....	.....

9 In which stage are bodies fully developed?

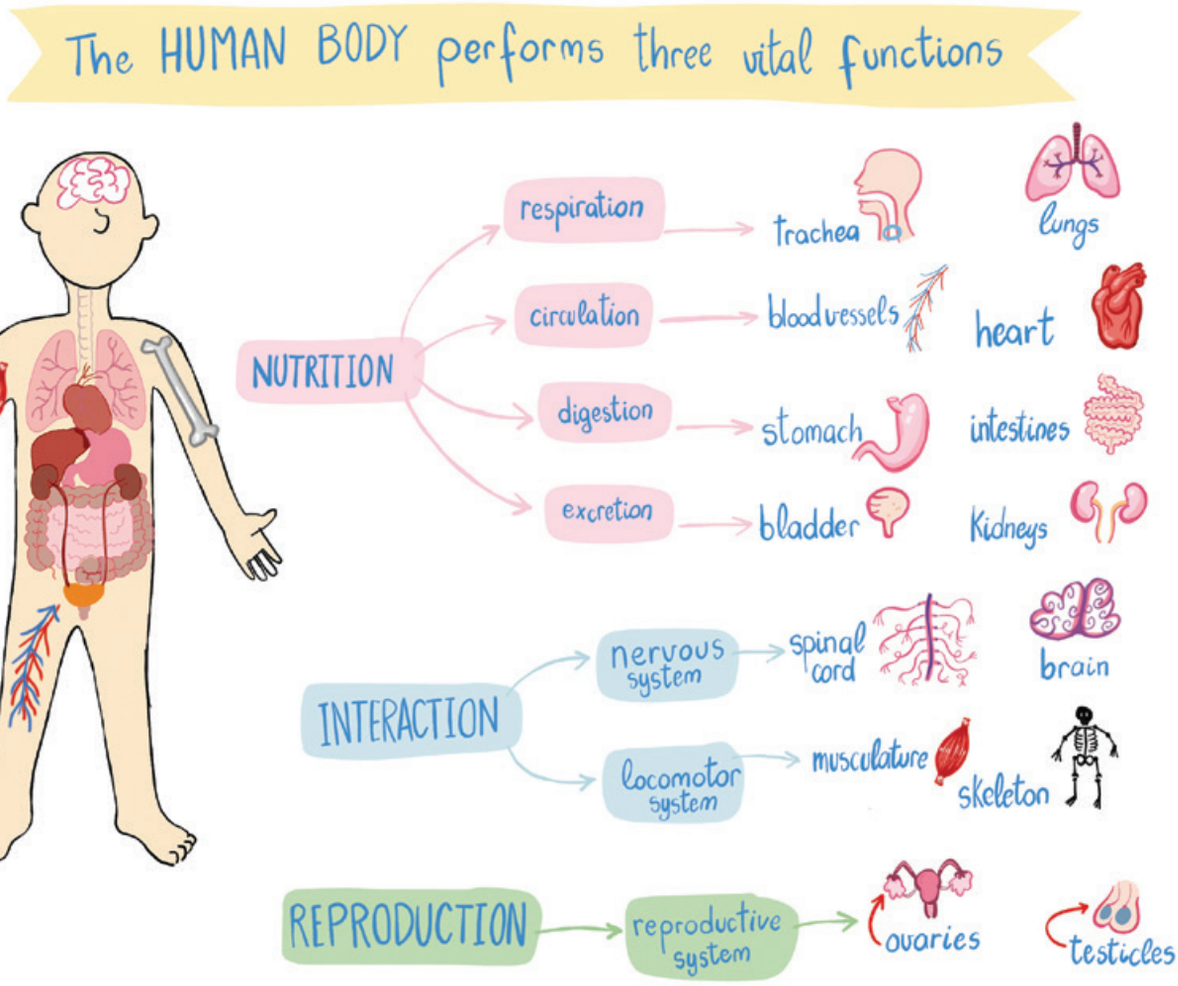
Healthy and happy

10 In your notebook, write if the sentences are true or false. Correct the false ones.

a There are five main food groups.
b Sweets give us instant energy.
c Fruit and vegetables contain a lot of protein and calcium.
d We can get minerals and protein from eating meat and fish.
e Chicken and carrots are in the same food group.

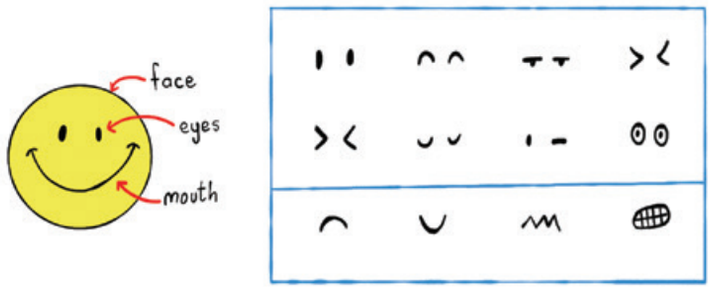
11 Listen to a dentist talking about dental hygiene. In your notebook, write what you must and mustn't do.

VISUAL SUMMARY



TIPS + TRICKS

- Use emoticons to represent the different emotions.
- A yellow circle will represent the face.
- Combining different eyes and mouths will give you different expressions - there are countless possibilities!



UNIT REVIEW

1 Copy and complete the table in your notebook. Use the words in the box. There are some extra words.

kidney stomach bladder oesophagus lungs
bronchi heart torso veins muscles

Respiratory system	Circulatory system	Digestive system	Excretory system
.....	.....	.....	.....

2 Label the photos in your notebook. Which body system do they refer to?

3 Search online for information about good and bad posture. Why is it important to have a proper posture? Answer in your notebook. Then, add ways of improving your posture.

4 Classify these words in your noteboook. Write *bones* or *muscles*.

a tibia **b** trapezius **c** quadriceps **d** ulna

VISUAL CHALLENGE

Copy the pictures below in your notebook and fill in the emoticons following the instructions in the Tips + Tricks section. Keep in mind that you can use different styles for the eyes and mouths.