

CAMBRIDGE

Student's Book

Science Path 3



Better
Learning

SCIENCE PATH 3



Contents

Welcome Page 4		
1 Why do babies have more bones than adults? Page 6	<ul style="list-style-type: none"> • Nervous system • Musculoskeletal system • Sense of hearing 	<ul style="list-style-type: none"> • Sense of sight • Senses of smell and taste • Sense of touch
2 What happens to food inside your body? Page 18	<ul style="list-style-type: none"> • Food groups and nutrients • Digestive system • Circulatory system 	<ul style="list-style-type: none"> • Respiratory system • Excretory system • Healthy habits
3 Which vertebrate has two lives? Page 30	<ul style="list-style-type: none"> • Mammals • Birds • Reptiles 	<ul style="list-style-type: none"> • Amphibians • Fish • Invertebrates
4 How do plants get their food? Page 42	<ul style="list-style-type: none"> • Parts of a plant • Plant classification by stem 	<ul style="list-style-type: none"> • Plant reproduction: flowering plants and non-flowering plants • Plant nutrition
5 Can you help save the planet? Page 54	<ul style="list-style-type: none"> • Matter: changes of state • Types of energy: light, thermal, sound, kinetic, and electrical 	<ul style="list-style-type: none"> • Materials: conductors and insulators • Mixtures
6 What is a simple machine? Page 66	<ul style="list-style-type: none"> • Simple machines: inclined plane, screw, pulley, wheel and axle, lever, and wedge 	<ul style="list-style-type: none"> • Inventions: steam engine and telegraph
7 What's on the Earth's surface? Page 78	<ul style="list-style-type: none"> • Inland and coastal features • Peninsula, archipelagos, and islands 	<ul style="list-style-type: none"> • Natural and artificial features • Earth's resources
8 What causes weather? Page 90	<ul style="list-style-type: none"> • Types of weather • Rain and the water cycle 	<ul style="list-style-type: none"> • Weather measurement tools • Weather forecasts

More hands on!

Page 102



Projects and experiments

Documentaries

<ul style="list-style-type: none"> • Make a mural about a season and the five senses • Build a pinhole camera 	<ul style="list-style-type: none"> • Helping the senses
<ul style="list-style-type: none"> • Write a rap about nutrition • Build a model of the respiratory system 	<ul style="list-style-type: none"> • Say no to fast food
<ul style="list-style-type: none"> • Give a presentation about animals • Find out why animals use camouflage 	<ul style="list-style-type: none"> • The animal kingdom
<ul style="list-style-type: none"> • Make a field journal about plants • Germinate a seed 	<ul style="list-style-type: none"> • The plant kingdom
<ul style="list-style-type: none"> • Create signs to remind people to save water and energy • Observe the effect of thermal energy on liquids 	<ul style="list-style-type: none"> • Energy and matter
<ul style="list-style-type: none"> • Design a complex machine • Communicate using Morse code 	<ul style="list-style-type: none"> • Incredible inventions
<ul style="list-style-type: none"> • Make an archipelago • Play the <i>Landscape</i> game • Make a <i>Save our resources</i> door hanger 	<ul style="list-style-type: none"> • Take care of your planet
<ul style="list-style-type: none"> • Make a pinwheel • Let's make rain • Make a windsock • Be a weather presenter 	<ul style="list-style-type: none"> • A weather forecast

Glossary



Page 110

WELCOME TO CAMBRIDGE SCIENCE PATH

Welcome to the amazing world of science. In this book, you will:



make a mural



help save the planet



invent a machine

go on safari



investigate plants



make an archipelago



You will also find out:

- how fast your heart beats.
- which vertebrates have two lives.
- how to tell how old a tree is.
- how to find gold.
- how to make a car.
- how to change a landscape.
- how seasons are different.

1

WHY DO BABIES HAVE MORE BONES THAN ADULTS?

Look and see ...



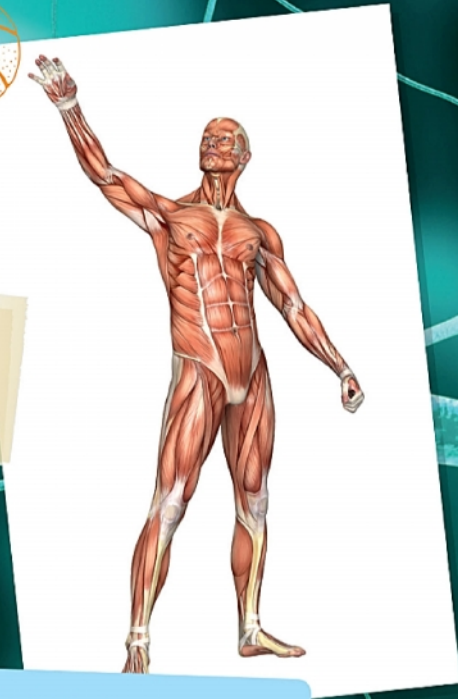
Name the senses
in the pictures.



Can you name
any bones on
the skeleton?



What do joints do?



What do muscles do?

DOCUMENTARY

Helping the senses

Investigate

In this unit, you will make a mural about a season and the five senses.

To do this, you will:

- choose a season and think about what it reminds you of.
- learn about the five senses.
- think about how your senses help you enjoy the seasons.

HOW DOES YOUR BRAIN WORK?

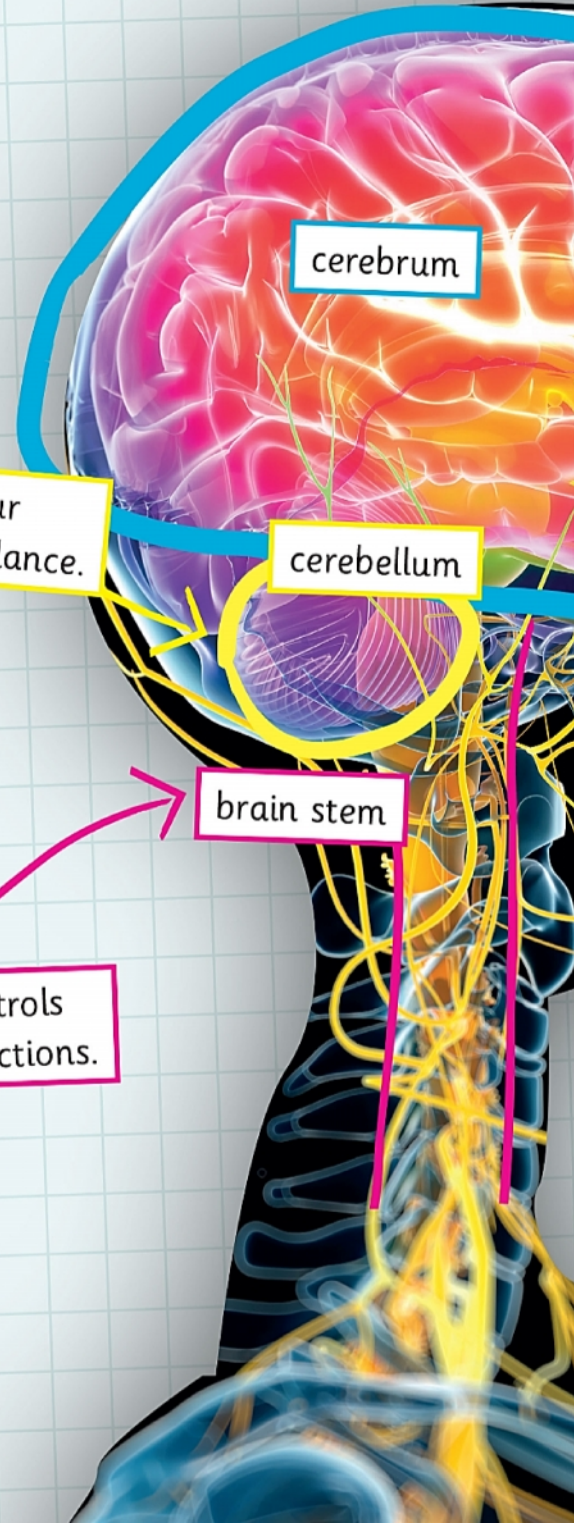


Body systems are made up of organs. The **brain** is the organ that controls everything we do. It is the control center of the **nervous system**.

By the end of this lesson, you will know which part of the brain stops you from falling over.



This part controls our coordination and balance.



cerebrum

cerebellum

brain stem



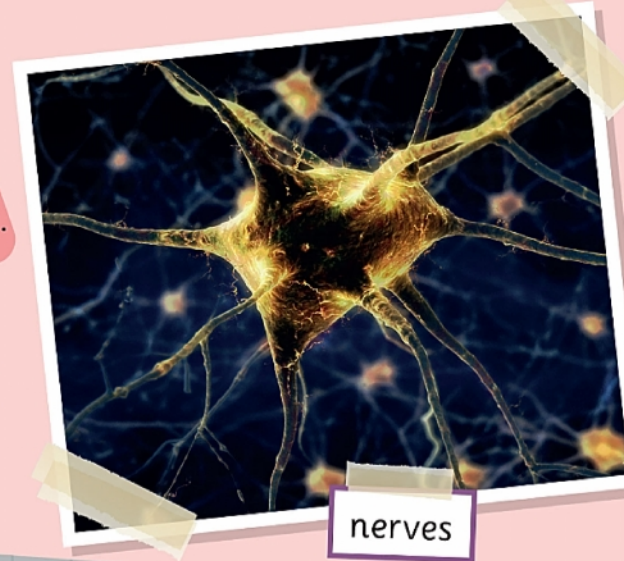
This part controls involuntary actions.



Do you remember what the sense organs are?

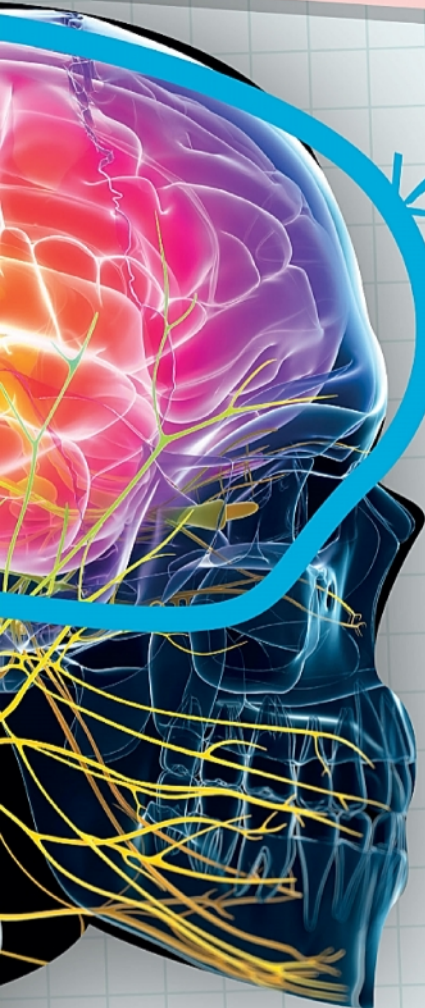


Our sense organs send information to our brain. This information travels to our brain through the **nerves**.



nerves

The brain then sends information back, through the nerves, to different parts of the body.



This part controls voluntary actions.



Which part of the brain helps us to dance?



Investigate

STAGE 1

- Choose one of the four seasons.
- Quickly write down five things it reminds you of.
- Compare your list with a partner.

I've chosen ... It reminds me of ...

WHY DO YOU HAVE A SKELETON?



By the end of this lesson, you will know what the parts of the musculoskeletal system are.

The **musculoskeletal system** allows us to move. It has three main parts.

Joints are where our bones connect to each other.

Muscles are soft and elastic. They help us move.

Can you find the skull, ribs, and spinal column in the skeleton?

Bones are hard and rigid. They form our **skeleton**, which gives our body shape.



Adults have 206 bones in their body. Babies have about 300 bones when they are born. Some of these bones later join together and become one.

Muscles work by **contracting** and **expanding**. Some muscles are *voluntary* – they only work when our brain tells them to. Other muscles are *involuntary* and they work automatically – like the heart.

Find the skeleton hidden in the unit.

WHY DO YOU HAVE EARWAX?



By the end of this lesson, you will know how we can take care of our hearing.

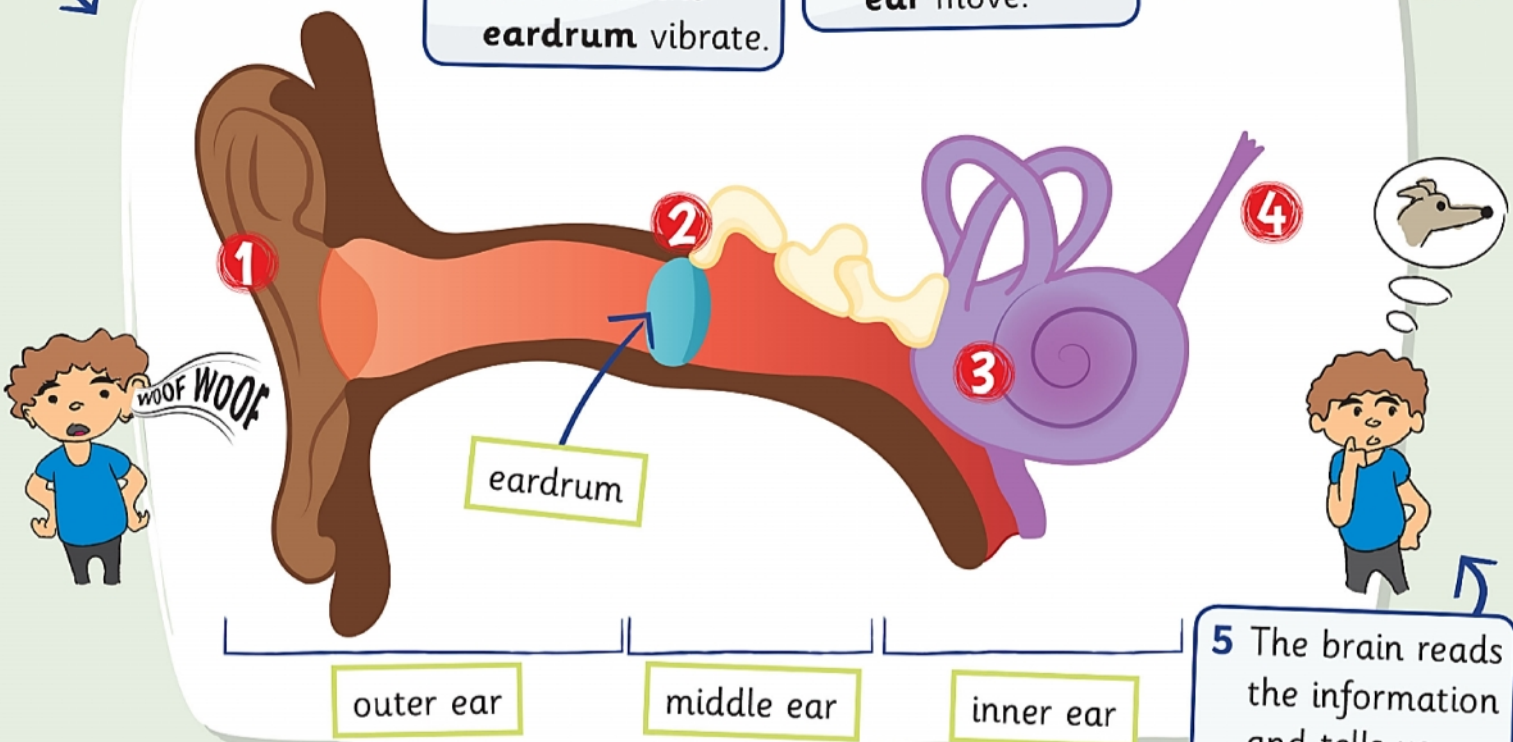
Our senses allow us to **interact** with the world around us. Our **sense of hearing** allows us to distinguish between different sounds.

1 Sound waves enter the **outer ear**.

2 They continue to the **middle ear** and make the **eardrum** vibrate.

3 These vibrations make the liquid in the **inner ear** move.

4 This movement sends information to the **brain**.



5 The brain reads the information and tells us what we are listening to.

Listen. What sounds can you hear?

Investigate STAGE 2

- What sounds can you hear during your season?
- Did you mention any of these sounds in Stage 1?
- Print out pictures of the things you can hear and write sentences about them.

Take care of your ears.

Our ears produce a sticky substance called earwax. Earwax protects our ears from dirt and infection.