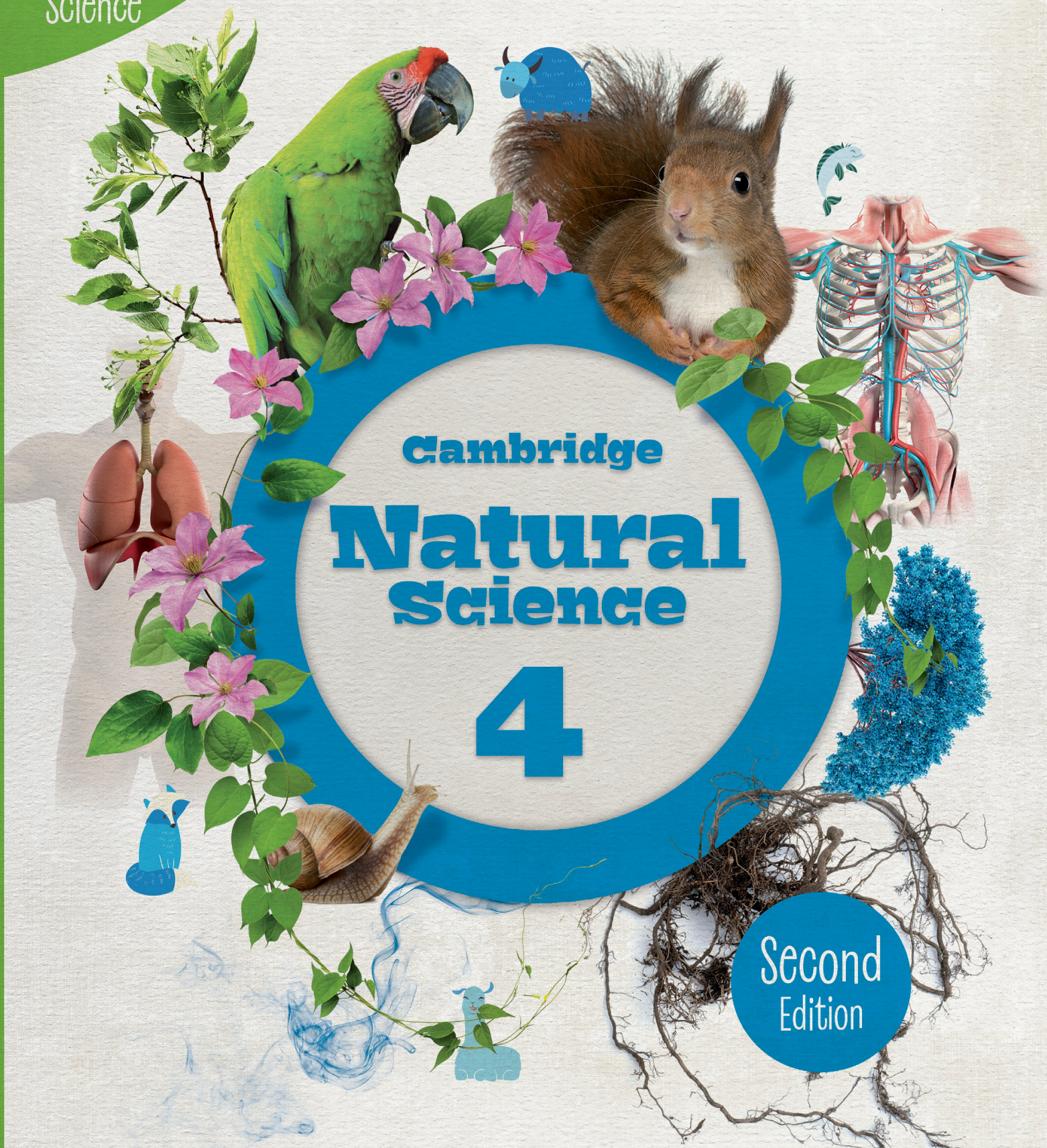


Natural Science



Second Edition



CAMBRIDGE

Teacher's Book

with Digital Pack



NATURAL SCIENCE 4



Course introduction

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How do our bodies work?

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Our Project 2

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How do computers make our world work?

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Our Project 3

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Audio scripts

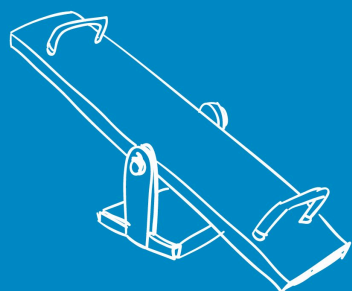
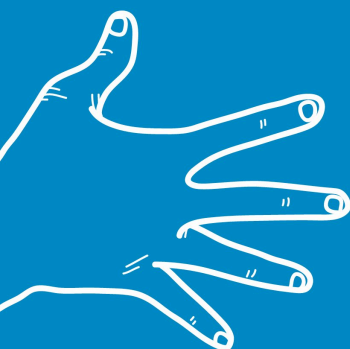
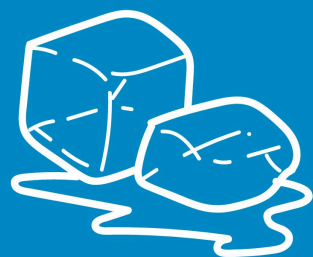
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Activity Book answers

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WELCOME TO CAMBRIDGE NATURAL SCIENCE



Cambridge Natural Science Second Edition follows the new Primary Natural Science curricula with complete coverage of the Science competencies.

- An **enquiry-based approach** with Big Questions promotes critical thinking around relevant Science topics.
- **Hands-on experiments and manual activities** engage students with the content in a child-friendly, memorable way.
- Three **competency-based projects with posters and assessments** encourage pupils to deepen their exploration of new concepts while strengthening their collaboration and presentation skills.
- A **new content review section** on every spread ensures that students have enough practice with new concepts to effectively consolidate their knowledge.
- **English speaking, listening, reading and writing skills** are developed while **grammar structures** presented in Cambridge Primary courses are systematically reinforced.
- **Exam vocabulary and practice for Cambridge English Qualifications** for young learners are featured in every level:
 - Level 1: Pre A1 Starters**
 - Level 2: A1 Movers**
 - Level 3: A1 Movers and A2 Flyers**
 - Level 4: A2 Flyers**
 - Level 5: A2 for Schools and B1 Preliminary for Schools**
 - Level 6: B1 Preliminary for Schools**

Cambridge Natural Science Second Edition has been developed around the key Science competencies stipulated in the new curriculum. For every lesson you teach, the competencies covered by the content are listed on the corresponding Teacher's Book spread. In addition, the three level projects are supported by competency-based assessments.



Sci C1 Digital competency

Use digital devices and resources in a safe, responsible and efficient way.



Sci C4 Competency in self-awareness and empathy

Develop awareness of one's own and others' physical, emotional and social well-being.



Sci C7 Competency in historical awareness

Understand continuity and change in society and culture.



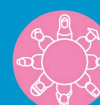
Sci C2 Scientific thinking competency

Use different techniques, instruments and modes of scientific thought to interpret and explain facts and phenomena occurring in their own natural, social and cultural environment.



Sci C5 Competency in preservation of natural and cultural heritage

Identify and understand relationships between systems in the natural, social and cultural environment to appreciate the value of cultural and natural heritage and preserve it.



Sci C8 Competency in cultural and social awareness and empathy

Value plurality and respect other cultures to build a more harmonious society that integrates EU values.



Sci C3 Problem-solving competency

Use design projects and computational thinking to cooperatively solve problems in interdisciplinary projects.



Sci C6 Competency in environmental sustainability

Develop awareness of human impact on the environment, including sustainable practices.



Sci C9 Citizenship competency

Recognise democratic values, human and child rights and the principles of the Spanish Constitution and the EU.



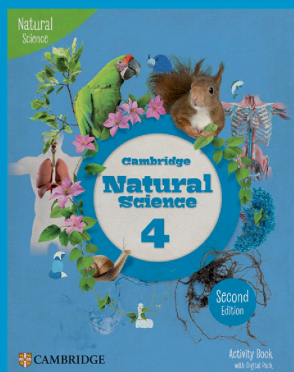
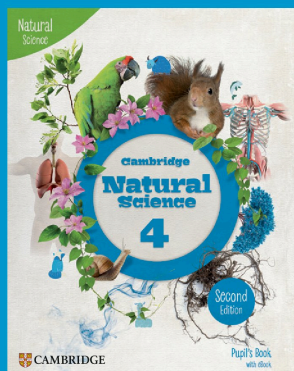
Course Components

Pupil's Book with eBook: Each unit includes hands-on experiments, manual activities, mixed-ability assessment and practice of the Cambridge English Qualifications for young learners. There are three competency-based projects per level: each **Our Project** includes an accompanying **Project Poster**, **Project Worksheet** and **Project Assessment Grid**. Pupils can find their eBook access code on the inside front cover of their Pupil's Book.

Activity Book with Digital Pack: Each unit features activities that consolidate the concepts introduced in the Pupil's Book and practise the Cambridge English Qualifications for young learners. Self- or peer-assessments are included on the Activity Book project pages. The Digital Pack access code is on the inside front cover of the Activity Book.

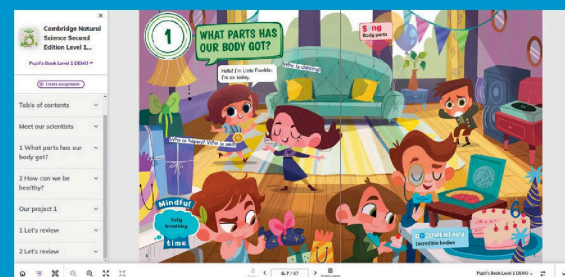
Teacher's Book with Digital Pack: Teaching ideas are offered at each stage of the lesson and competencies are flagged. Each unit highlights Cambridge English Qualifications vocabulary and practice activities, as well as links to digital components. Teachers can access digital content using a unique code found on the inside front cover of the Teacher's Book.

Flashcards: Full-colour printed flashcards (Levels 1–4) bring Science topics to life. Digital flashcards are available for all levels.



Digital components on Cambridge One platform

The digital components for **Cambridge Natural Science Second Edition** are available on our new **Cambridge One** online learning platform.



Presentation Plus: Digital front-of-class presentation with interactive versions of the Pupil's Book and Activity Book and a variety of features to help pupils cement their understanding of key concepts.

- **interactive Pupil's Book and Activity Book activities**
- **documentary videos** for every Pupil's Book unit
- **animations** to support the meaning of core concepts
- **digital flashcards**
- **class audio with scripts**

Test Generator: Features downloadable ready-made mixed-ability tests and allows teachers to build their own exams.

Teacher's Resource Bank: Includes teacher training videos; *Our Project* assessment grids, worksheets, posters, and self- and peer-evaluations; revision worksheets; concept maps; letters to parents; and downloadable class audios and videos.

Practice Extra: Teachers can set homework and track each pupil's progress. Provides extra practice in a way that rewards and motivates young learners.

WELCOME UNIT

PAGES 4–5

Objective:

Pupils will become enthusiastic about the study of Natural Science by discussing the images on these pages. They will be encouraged to predict the topics they will study this year and also to guess what projects they will work on.

Key vocabulary

astronaut, computer
programmer, doctor, football
coach, geologist, inventor

C2

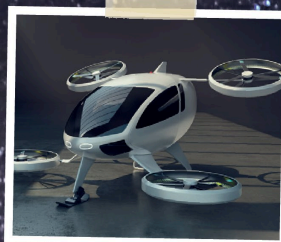


Warm up

Write the names of the topics that the pupils will study on the board: human biology; health and well-being; geology; physics; the history of technology; computer science. Ask the pupils to work with a partner and try to match the photos in the top row to the topics on the board. Ask them to write what they already know about these topics in their notebooks. Invite volunteers to share their ideas with the class.

WELCOME TO CAMBRIDGE NATURAL SCIENCE

Welcome to the amazing world of natural science.



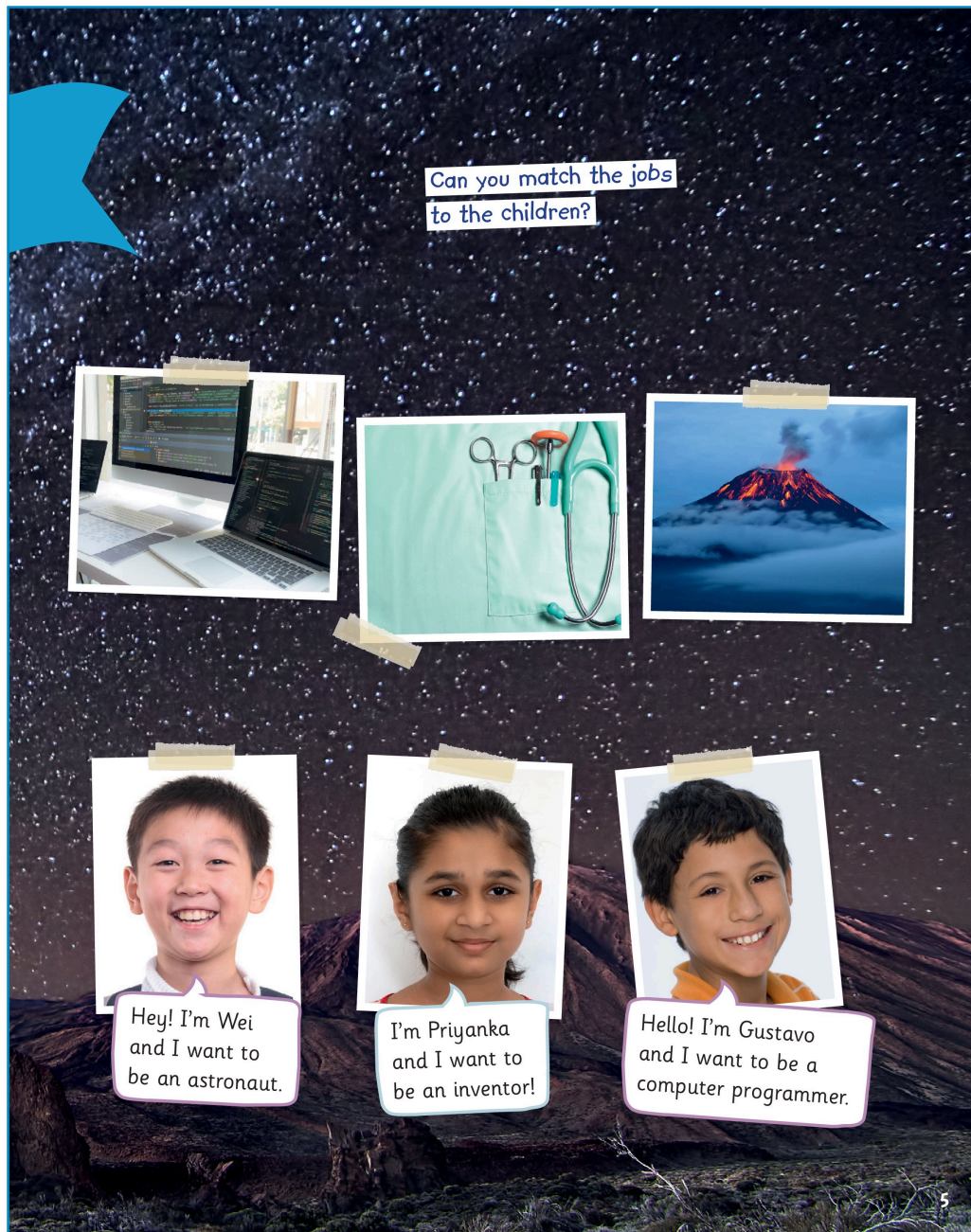
I'm Tanya
and I want to
be a doctor!



Hi, I'm Ian. I
want to be a
football coach!



Hello! I'm Paola.
I want to be a
geologist.



Main concepts

- Invite children to read the speech bubbles for each of the children and describe what each job is and what type of scientific knowledge is required to perform that job.
- Ask pairs of pupils to match the jobs to the pictures. doctor: *stethoscope*; football coach: *football strategy board*; geologist: *volcano*; astronaut: *International Space Station*; inventor: *flying car*; computer programmer: *computers showing code*. Accept all reasonable answers and ask volunteers to explain their reasoning.
- Then, ask pupils to talk about how the jobs relate to the topics that you wrote on the board earlier. Invite volunteers to suggest other jobs that might relate to those topics as well.

Learn more

Invite pupils to look at the topics they will study in the Scope and sequence on page 2 of their Pupil's Book. In small groups, pupils discuss what they already know about the topics and share what they would like to find out about them. Invite volunteers to share what their groups talked about with the rest of the class.

Tip

Use this first lesson of the year to set out classroom rules for group work. Involve the pupils in deciding what the rules should be.

1

HOW DO OUR BODIES WORK?




Learning objectives

By the end of this unit, pupils will have achieved a greater understanding of the following concepts:

- the organisation of the human body
- the digestive system and how it helps our body get nutrients
- the respiratory system and how we breathe
- the circulatory system and how it moves blood around our body
- the excretory system and how it helps us eliminate waste
- the male and female reproductive systems and how they help us reproduce
- the link between physical and emotional well-being

Competencies

This unit covers the following competencies:

- Sci C2: Scientific thinking competency 
- Sci C3: Problem-solving competency 
- Sci C4: Competency in self-awareness and empathy 

Key vocabulary

Organisation of the human body: cells, multicellular, organ, organisms, system, tissues, unicellular

Digestive system: anus, blood, digestive system, large intestine, mouth, nutrients, oesophagus, small intestine, stomach, teeth, waste

Respiratory system: breathe in/out, carbon dioxide, circulatory system, diaphragm, lungs, mouth, nose, oxygen, respiratory system, trachea

Circulatory system: arteries, atrium, blood, blood vessels, circulation, heart, heartbeat, nutrients, oxygen, veins, ventricle

Excretory system: bladder, blood, excretory system, kidneys, skin, sweat, urethra, urine, waste

Reproduction: external, female, internal, male, ovaries, penis, reproductive system, testicles, urethra, uterus, vagina, vulva

Physical and emotional well-being: chronic, depressed, emotional well-being, grumpy, physical well-being





Cambridge English Qualifications practice

You will find **A2 Flyers** activity types in the following exercises:

Pupil's Book, Page 17, Activity 2 – Listening Part 4

Activity Book, Page 6, Activity 9 – Reading and Writing Part 4

Throughout this unit, you will find the following **A2 Flyers** vocabulary:

air, as, begin, cut, feel, group, happen, how long, if, keep, large, minute, month, other, piece, plastic, right, same, scissors, stay, through, time, together, way

Digital Resources on Cambridge One

- Song: *A journey inside the human body*
- Video documentary: *Respiration and circulation*
- Presentation Plus with interactive activities
- Practice Extra with interactive activities
- Test Generator
- Resource Bank:
 - Flashcards: 12–15; 75–81
 - Revision worksheets
 - Concept map
 - Letter to parents
 - Practice Extra answer keys
 - Oracy talking points worksheet and cue cards
 - Programaciones
 - Downloadable class audios and videos

Materials needed for *Hands on*

- plastic bottle
- three balloons
- scissors
- two straws
- elastic bands
- plasticine

Materials needed for other activities

- plasticine
- red food colouring
- bowl
- sponge
- water

Objective:

Pupils will review vocabulary and concepts related to body systems studied in previous years and predict what they will study in this unit.

Key vocabulary

body system, cell, circulation, organ, reproduce, respiration, sweat




Warm up

- Ask pupils to stand up and push their chairs under their desks. Tell them to do 25 jumping jacks on the spot, without bumping into the pupil next to them.
- Then, ask pupils to sit down and work with a partner. Tell pupils to brainstorm and write a list of all the body systems they used to do the jumping jacks.
- Ask volunteers to read out their ideas and collate them on the board.
- Play the unit song. Encourage pupils to sing along and come up with a choreography for the song.

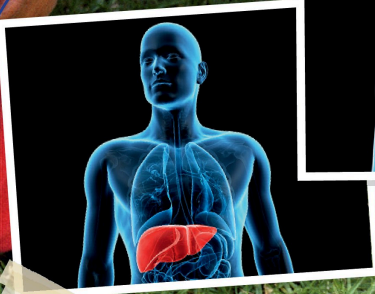
1


HOW DO OUR BODIES WORK?

Look and see...



What are these organs called?





What body systems are they part of?

heart, lungs and liver

circulatory, respiratory and digestive systems

Main concepts

Pupils look at the photos and questions in order to predict what they are going to learn about in this unit. Review the names of some of the body systems.

Learn more

Tell pupils that you are going to test their observation skills. Tell pupils to close their books and ask them questions about the photos: *How many boys and girls are there? What are they doing? How do you think they feel? Who is sweating and why?*

Tip

To help pupils recall the names of the body systems they have already learnt about, play a game of *Snowman*, an alternative version of *Hangman*. Every time a pupil gets a letter wrong, you add a part of the snowman: a circle for its body, a circle for its head, two sticks for arms, a top hat, two eyes and a frown.

Song

The song focuses on the body systems and how they work together.

Documentary

The documentary focuses on the circulatory system and the respiratory system and how they work together.

We sweat to eliminate waste through the skin and to cool down.

Why do we sweat?

How do humans reproduce and have babies?

How are emotions and health connected?

DOCUMENTARY
Respiration and circulation

When I grow up, I want to be a doctor!
Come with me and learn about:

- how our digestive, respiratory and circulatory systems work.
- how our bodies eliminate waste products.
- how human beings reproduce.
- how our emotions affect our health.

Song
A journey inside the human body

Physical illness can make us feel sad, whereas negative thoughts and feelings can make us physically ill.

A baby begins to develop when a cell from an adult male reproductive system joins with a cell from an adult female reproductive system.

For next lesson ... plasticine