Learning Lab

Teacher's Resource Pack

3 Natural Science

Natural Science Learning Lab is a collective work, conceived, designed and created by the Primary Educational department at Santillana, under the supervision of **Teresa Grence**.

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Introduction

Learning Lab is a six-level Primary course which progressively introduces the core curricular objectives of Natural Science. The language has been carefully graded to provide a gradual progression of the vocabulary and structures. The course has been designed as an effective, user-friendly tool in the classroom.

The main aims of *Learning Lab* are:

- To facilitate content learning and consolidate the language learning processes occurring simultaneously in the CLIL classroom.
- To promote understanding and appreciation of the natural and social environment through situations which reflect the young learner's real world.
- To provide opportunities for young learners to put their personal and social skills into practice.
- To learn the scientific method.

Learning Lab teaches basic concepts of Natural Science through English.

Content and language are acquired simultaneously.

Student-centred learning encourages learner autonomy.

The series covers the official syllabus for each level.

Enquiry-based questions and experiments promote the scientific method.

Key concepts are explained in clear, simple language.

Raps and videos aid fluency and pronunciation. These help to memorise new language.

Learning Lab offers a student-based approach that caters for diversity: different needs, interests and skills. It caters for all students, so no one is left behind.

Learning Lab teaches the scientific method along with communicative competences in English. In addition, students develop citizenship competences that enable them to grow as fully-integrated members of their communities.

Learning Lab encourages enquiry-based learning:

Enquire

What do you know?

Learning Lab's enquiry-based methodology encourages students to ask questions.

- Questions are used to elicit prior knowledge and to arouse curiosity. In this way, students become the centre of the learning process.

Learn

What do you want to know?

Learning Lab is adaptable to different learning styles. It involves students in their own learning, and helps them to set objectives and maintain motivation.

- Large images, real photos
- Key words and language models
- Audios
- Mini Labs
- Graphic organisers
- Activities that promote lower and higher order thinking skills
- Digital tools: videos, audios and interactive activities

Apply

What have you learnt?

Learning Lab provides different ways to put knowledge into practice:

- The final task
- Self-assessment
- A complete range of assessment materials

Methodology

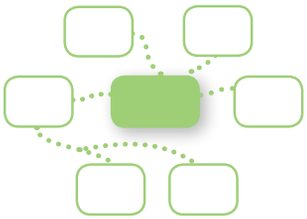
Learning Lab introduces different strategies to ensure students' progression:

Observe

Think about it

Compare

Mini Lab



The scientific method

- Students are encouraged to ask questions about the world around them and to predict what they will learn: *What can you see in these photos? Do these plants have flowers? Do they produce seeds?*
- Students train their observation skills as they explore the topics.
- Experiments develop the students' practical skills and encourage them to adopt the scientific method.
- Conclusions to the experiments are analysed and discussed with peers.

Learning skills

- Mind maps and graphic organisers help students to organise what they learn. Questions are adapted to the language level of the class: *Are these the same or are they different? What are the differences between a vertebrate and an invertebrate?*

Visual learning

- High-quality photographs invite students to think about the world around them.
- Colourful illustrations provide a stimulating setting for scientific learning.
- Using tables and charts, students learn to organise and classify information.
- Visual thinking posters stimulate discussion in class.

Mutiple intelligences

Learning Lab gives special relevance to different learning styles:

- Drawing activities develop visual-spatial intelligence. Students personalise their ideas graphically.
- Speech bubbles encourage oral exchange to develop linguistic skills.
- Raps and TPR activities promote learning through movement.
- Experiments and field work follow the scientific method: observe, think about, compare, investigate, classify...

Language support

- Natural English is used throughout *Learning Lab*. Repetition of everyday language is essential, and students are exposed to a controlled range of vocabulary and structures. They will gradually begin to understand and respond. Eventually, students will begin to produce language and experiment with it.

Visual support with engaging illustrations aids understanding, as does the use of mime and gestures.

Not all students begin to produce language at the same pace, so it is important to assess their levels individually. Oral and written work needs to be adapted accordingly.

The key language objectives in each unit highlight the main vocabulary and structures. However, students will be exposed to a wider range of language for recognition. According to their progress, they should be encouraged to "experiment" and try out new language.

Pair **Group**

Cooperative learning

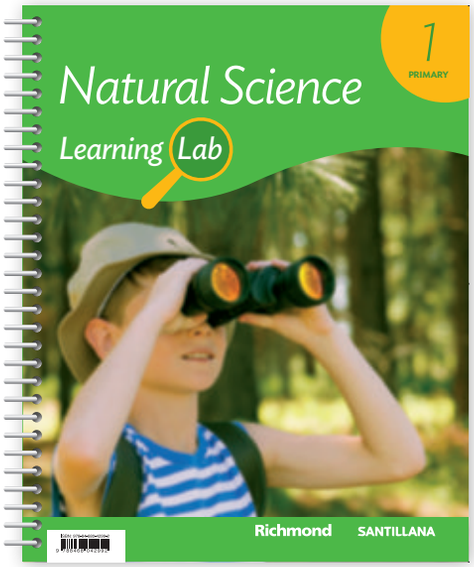
- Working in pairs and groups provides multiple opportunities to use language.
- Activities such as games aid students' understanding of both content and language. By physically responding to instructions, through games, raps and mime, students become familiar with the new vocabulary. They will then be ready for more abstract tasks.
- Suggestions for oral activities can be done in pairs or groups. Working in pairs contributes to language development, and helps students to grasp key concepts.

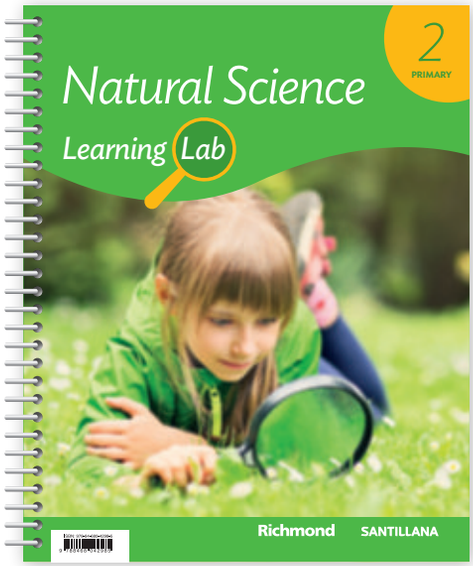
Values education and global citizenship

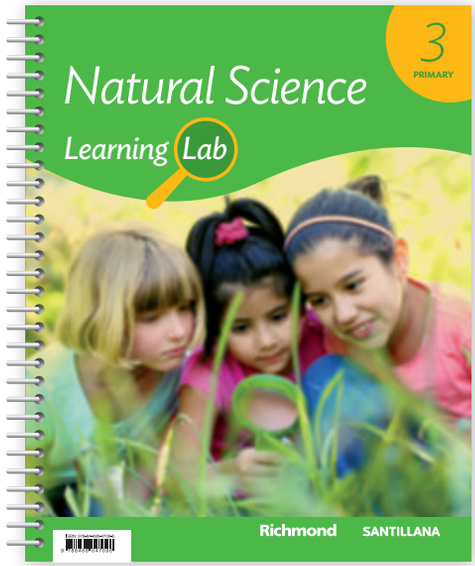
- Throughout each unit in the Student's Books, and especially in the Final tasks, students develop citizenship competences that enable them to grow as fully-integrated members of their communities.

Student's materials

The **Student's Books** consist of six units, organised into three terms. In addition, the first opening spread, *Be a scientist!* focuses on the scientific method. Students are introduced to essential strategies for enquiry-based learning: *observe*, *compare*, *investigate*, *classify*, etc. In level 3 the opening spread of each unit can be used both for revision of previous knowledge and as an introduction to new topics.







In levels 1 and 2, each Student's Book comes with a separate *My picture dictionary*.

From level 3 onwards, the Student's Book has a *Key vocabulary* appendix.

The **Activity Books** allow students to practise both content and language objectives for each level.

In level 3, *Let's read!* and *Glossary* sections help students to practise a range of skills and competences.

Teacher's materials

Teacher's Resource Pack

The Teacher's Resource Packs consist of the Teacher's Book and a wealth of photocopiable worksheets.

Teacher's Book

- Student's Book with answer key
- Lesson plans
- Audio transcripts

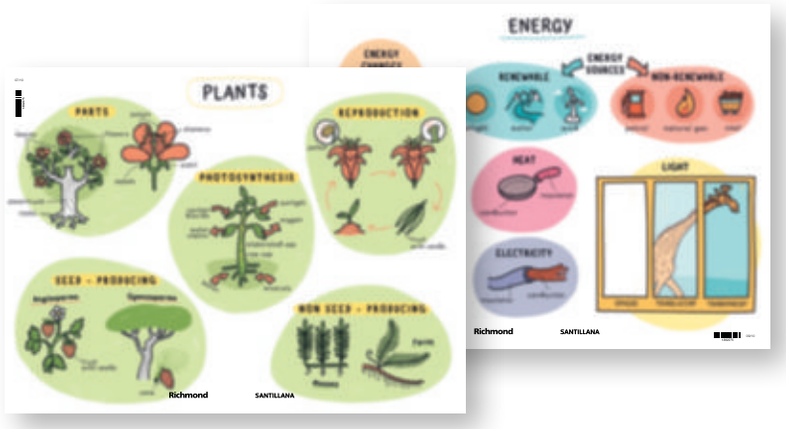
Teacher's Resources

- Reinforcement
- Extension
- Graphic organisers
- Language support
- Diagnostic test
- Assessment

Classroom materials

Visual thinking posters

- 10 posters with colourful illustrations. Use them to present or consolidate new concepts. Display them in the classroom.



Digital Resources

Learning Lab offers a full range of digital resources:

LibroMedia

The *LibroMedia* digital textbook is interactive, intuitive and easy to use.

It contains multimedia resources, activities and tools for effective lessons.

Both teacher's and student's versions are available.

Request your user licence here:

digital.santillana.es/contacto

i-book

The Teacher's i-book is an interactive version of the Student's Book. It includes a wealth of useful multimedia resources on a single CD-ROM. It can be used as a tool for preparing lessons, or in class with an interactive whiteboard (IWB) or projector.

Watch a demo here: clil.santillana.com

Aula Virtual

Aula Virtual is a multi-device application for accessing a large library of digital textbooks, such as the LibroMedias, as well as other digital resources and tools.

Aula Virtual offers different options for customising or creating your own digital content to send to your students.

Download the latest version here:

digital.santillana.es/descarga-aula-virtual

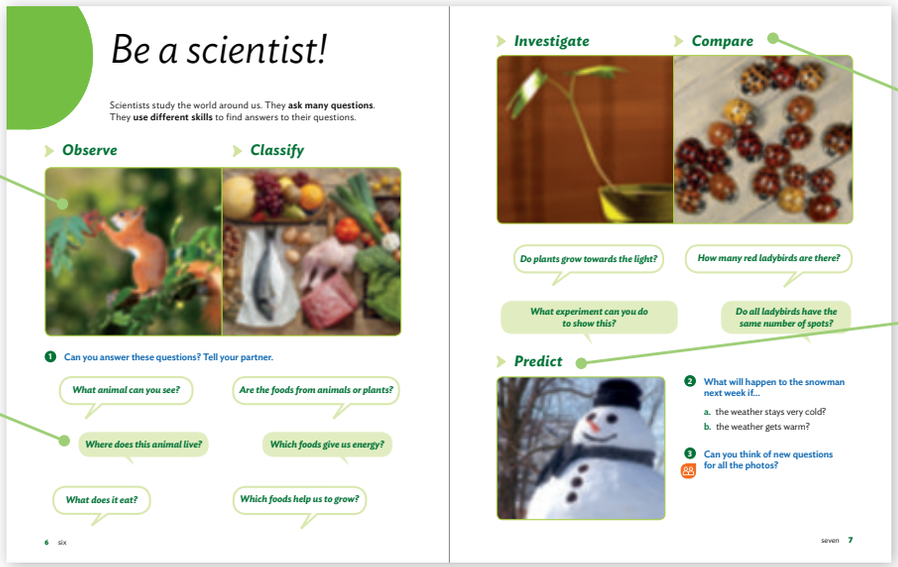
Student's Book

Be a scientist!

An introduction to learn about the scientific method.

Close observation of real images as a stimulating starting point

Practise in asking and answering simple questions



Development of thinking skills

Critical thinking skills are made visible

Opening pages

An inspiring start to each unit.

A video to introduce the main theme of the unit

Questions to stimulate prior knowledge and introduce the main theme

Activities to stimulate observation skills and create meaningful interaction

Question to develop critical thinking and enquiry

Labelled images to practise key concepts and language

Students will apply the learning goals to a final task

An opportunity to personalise knowledge, then interact with other students

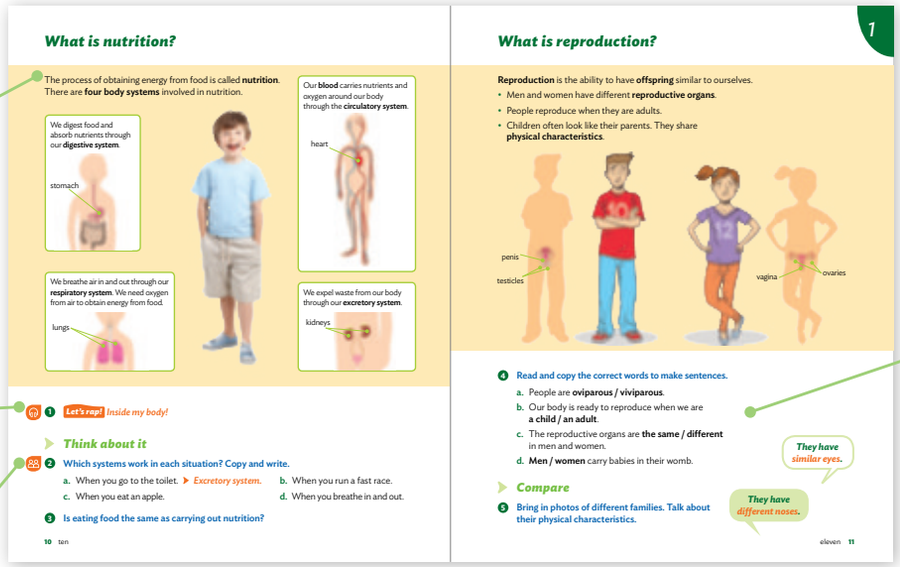
Information and practice pages

A varied selection of presentation and practice materials.

Clear, simple presentation of main topics

Listening tasks and raps to develop oral skills

Teamwork to establish conclusions



What is nutrition?

The process of obtaining energy from food is called **nutrition**. There are **four body systems** involved in nutrition.

We digest food and absorb nutrients through our **digestive system**.

stomach

Our **blood** carries nutrients and oxygen around our body through the **circulatory system**.

heart

We breathe air in and out through our **respiratory system**. We need oxygen from air to obtain energy from food.

lungs

We expel waste from our body through our **excretory system**.

kidneys

1 *Let's rap! Inside my body!*

Think about it

2 **Which systems work in each situation? Copy and write.**

a. When you go to the toilet. ➤ *Excretory system.*
b. When you run a fast race.
c. When you eat an apple.
d. When you breathe in and out.

3 **Is eating food the same as carrying out nutrition?**

10 ten

What is reproduction?

1

Reproduction is the ability to have **offspring** similar to ourselves.

- Men and women have different **reproductive organs**.
- People reproduce when they are adults.
- Children often look like their parents. They share **physical characteristics**.

penis
testicles
vagina
ovaries

4 **Read and copy the correct words to make sentences.**

a. People are **oviparous / viviparous**.
b. Our body is ready to reproduce when we are **a child / an adult**.
c. The reproductive organs are **the same / different** in men and women.
d. **Men / women** carry babies in their womb.

Compare

5 **Bring in photos of different families. Talk about their physical characteristics.**

They have similar eyes.

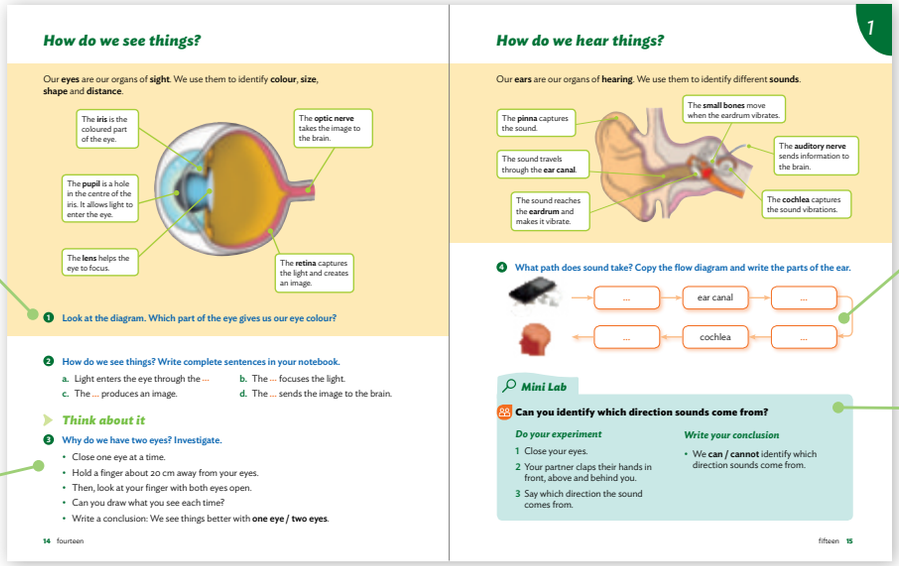
They have different noses.

eleven 11

Gradual progression of reading and writing skills

Questions to spark curiosity and critical thinking

Key concepts and language presented in challenging activities



How do we see things?

Our **eyes** are our organs of **sight**. We use them to identify **colour**, **size**, **shape** and **distance**.

The **iris** is the coloured part of the eye.

The **optic nerve** takes the image to the brain.

The **pupil** is a hole in the centre of the iris. It allows light to enter the eye.

The **lens** helps the eye to focus.

The **retina** captures the light and creates an image.

1 **Look at the diagram. Which part of the eye gives us our eye colour?**

2 **How do we see things? Write complete sentences in your notebook.**

a. Light enters the eye through the ...
b. The ... focuses the light.
c. The ... produces an image.
d. The ... sends the image to the brain.

Think about it

3 **Why do we have two eyes? Investigate.**

- Close one eye at a time.
- Hold a finger about 20 cm away from your eyes.
- Then, look at your finger with both eyes open.
- Can you draw what you see each time?
- Write a conclusion: We see things better with **one eye / two eyes**.

14 fourteen

How do we hear things?

1

Our **ears** are our organs of **hearing**. We use them to identify different **sounds**.

The **pinna** captures the sound.

The **small bones** move when the eardrum vibrates.

The **auditory nerve** sends information to the brain.

The sound travels through the **ear canal**.

The **cochlea** captures the sound vibrations.

The sound reaches the **eardrum** and makes it vibrate.

4 **What path does sound take? Copy the flow diagram and write the parts of the ear.**

... → ear canal → ...

... → cochlea → ...

Mini Lab

Can you identify which direction sounds come from?

Do your experiment

1 Close your eyes.
2 Your partner claps their hands in front, above and behind you.
3 Say which direction the sound comes from.

Write your conclusion

- We **can / cannot** identify which direction sounds come from.

fifteen 15

Learning strategies to consolidate the main concepts

Experiments to consolidate learning and develop the scientific method

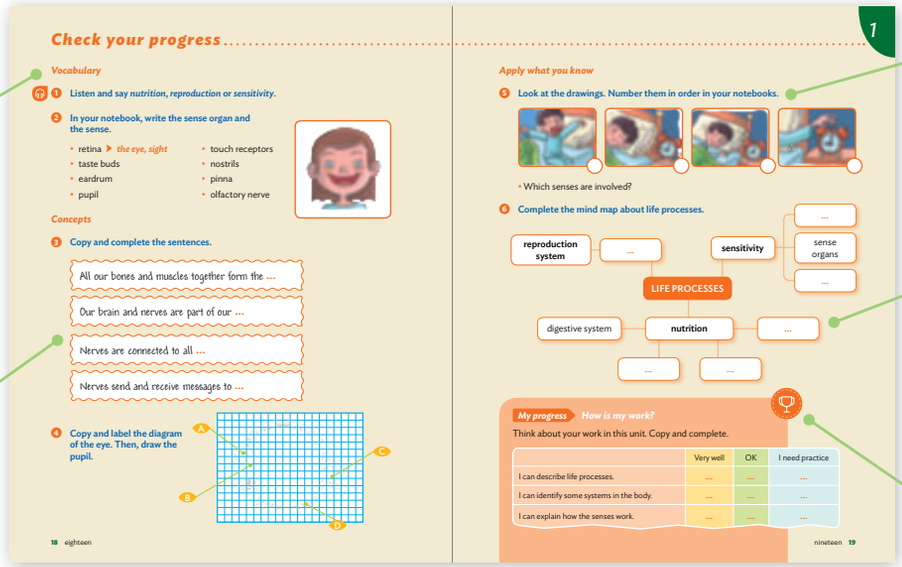
Student's Book

Check your progress

Formative assessment of key concepts and language.

Consolidation of key vocabulary and structures

Carefully graded activities to check progress



An activity to revise language and personalise new knowledge

Graphic organisers and mind maps to help students organise what they have learnt

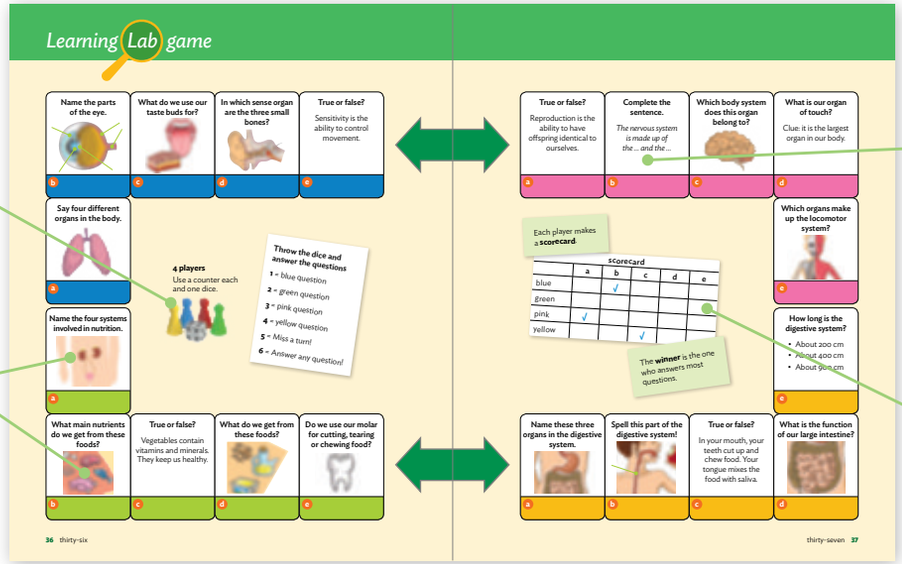
Self-assessment: Students copy the sentences, then assess their own progress

Learning Lab game

Revision of key concepts through a fun game at the end of each term.

Students help each other through teamwork

Review of main concepts

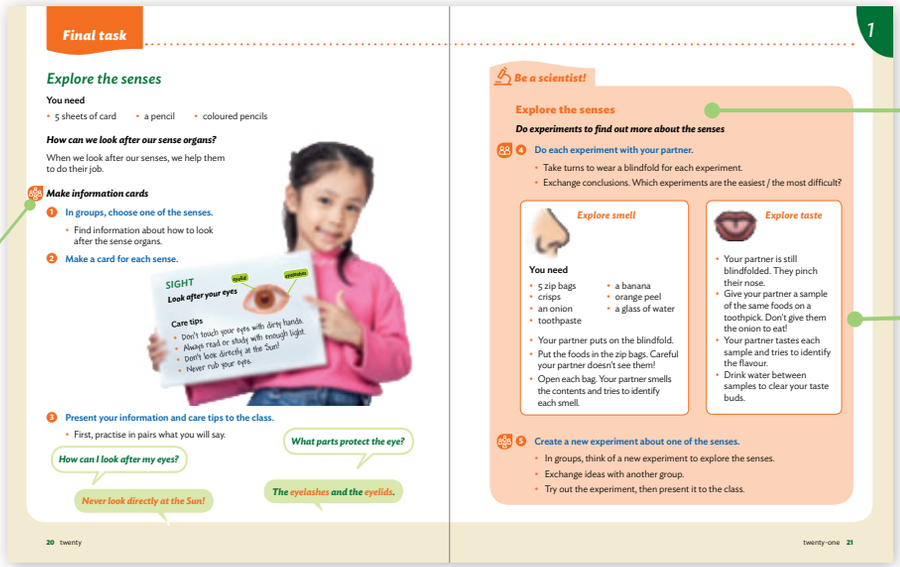


Opportunities to review language

Students make their own scorecard

Final task

An opportunity to practise recently acquired knowledge and to work as a team.



Group decision-making activities promote collaborative skills

Consolidation of values education

Working together to implement new learning

Key vocabulary

A helpful word appendix which allows students to consolidate vocabulary by themselves.

Key vocabulary organised by unit topic

Simple definitions of main concepts

Entries per topic and in alphabetical order

Motivating images related to the topic

Natural Science **Teacher's Book**

- Student's Book
- Lesson plans
- Audio transcripts

UNIT	1 *The human body*	2 *Food and health*
CONTENTS	• What is inside our body? • What is nutrition? • What is reproduction? • What is sensitivity? • How do we control movement? • How do we see things? • How do we hear things? • How do we feel things? • How do we smell and taste things?	• We eat many different foods! • What are nutrients? • The food wheel • What is a healthy diet? • What is the digestive system?
RAP	Inside my body!	Thank you, nutrients!
MINI LAB	Can you identify which direction sounds come from? Is your skin equally sensitive in all parts of your body?	Find out about fibre Which foods contain fats? How long is the digestive system?
FINAL TASK	**Values education** Take care of our senses **Task** Explore the senses	**Values education** How to keep teeth healthy **Task** Make a model of your teeth
REVIEW	*Learning Lab game*	

Learning goals

- To learn about the scientific method
- To develop observation skills
- To practise asking and answering questions

Key language

Vocabulary

animal, berry/ies, eggs, energy, fish, food, fruit, growth, meat, nuts, plant, squirrel, tree, vegetables

Language structures

Where does this animal live? What does it eat? Which foods give us energy? Which foods help us to grow?

Observe

Read the introductory sentences. Say: *We are going to be like scientists and ask and answer questions.*

Focus on the photo of the squirrel. Ask *'Wh-'* questions to elicit the animal, where it lives and what it eats. Teach the students *berry / berries*. Say: *Berries are fruits.*

The students conclude that squirrels live in trees in woodland.

Classify

Students look at the photo of the foods. Elicit as many foods as possible. Write the words on the board. Then say:

Classify the foods into groups. Which ones are from plants? Which ones are from animals?

Be a scientist!

Scientists study the world around us. They **ask many questions**. They **use different skills** to find answers to their questions.

Observe

Classify

1 Can you answer these questions? Tell your partner.

What animal can you see?

Are the foods from animals or plants?

Where does this animal live?

Which foods give us energy?

What does it eat?

Which foods help us to grow?

Extension

In groups, the students choose an animal. They draw it and write sentences to show where it lives and what it eats. They must say if the animal eats only plants, only animals or both.

Ask each group to present their animal to the class.

Investigate

Compare

Do plants grow towards the light?

How many red ladybirds are there?

What experiment can you do to show this?

Do all ladybirds have the same number of spots?

Predict

2 **What will happen to the snowman next week if...**

a. the weather stays very cold?

b. the weather gets warm?

3 **Can you think of new questions for all the photos?**

Extension

As a class, discuss experiments that could show if plants grow towards the light.

Refer students to the *Mini Lab* of unit 4 on page 60. Say: *We will do this experiment later in the year. We can investigate like real scientists!*

Learning goals

- To work with different images to obtain information
- To use thinking skills to make predictions

Key language

Vocabulary

leaves, light, plant, stem, Sun; insect, ladybird, spots; cold, ice, melt, snowman, warm

Language structures

Do plants grow towards the light? What experiment can you do to show this? How many red ladybirds are there? What will happen if...

Investigate

The students look at the photo of the plant. Ask: *Is the light source on the left or the right? Is the plant growing to the left or to the right? Do you think plants grow towards light?*

Compare

The students look at the photo of the ladybirds. Teach the name. Say: *Ladybirds are insects. Do all ladybirds look the same? Compare the red ones and the orange ones.* The students count the spots in pairs and give their answers.

Predict

The students look at the photo of the snowman. Read the two parts of the question.

Students answer in the present tense: *If the weather stays very cold, the snowman stays the same.*

Teach 'melt'. Write on the board: *If the weather gets warm, the snowman melts.*

1 The human body

This unit explain how our body works. It introduces some organs, and the body systems they belong to. It explains how our sense organs work, and how we control movement.

Content objectives

- To name some of the organs inside our body
- To identify body systems involved in nutrition
- To distinguish male and female reproductive organs
- To discover how sensitivity works
- To identify how we control movement
- To discover how the sense organs work

Final task: Explore the senses

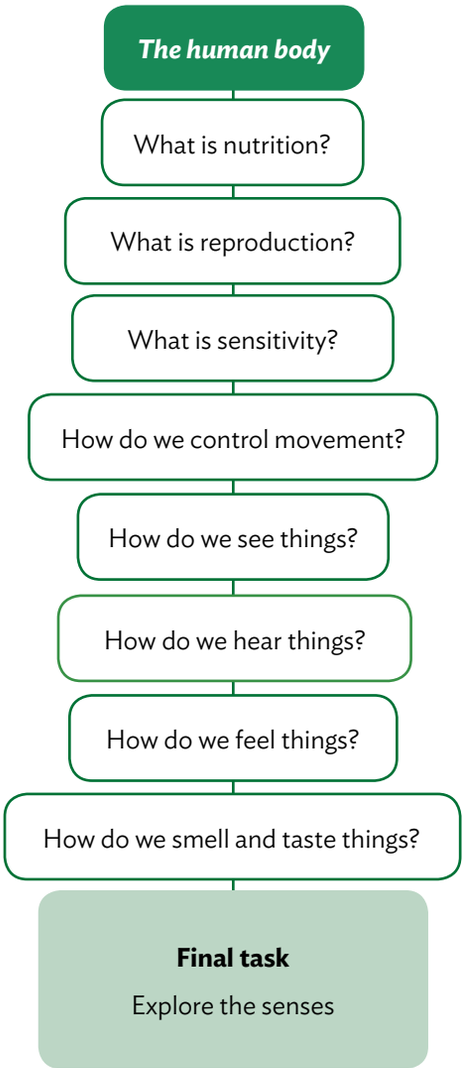
Language objectives

- Organs of the body
- Body systems
- Sense organs and their parts
- Main organs of reproduction

Assessment criteria

- To identify some of the organs of our body
- To describe body systems
- To differentiate between male and female reproductive organs
- To describe the function of sensitivity
- To describe how the sense organs work

Unit 1 outline



Unit 1 resources

Digital resources

- LibroMedia / i-book: unit 1
- Audio: unit 1

Classroom materials

- Visual thinking posters: Nutrition, Sensitivity, Reproduction

Photocopiable materials

- Reinforcement worksheet unit 1
- Extension worksheet unit 1
- Graphic organiser: The human body
- Language support: unit 1
- Diagnostic test
- Assessment worksheets 1A and 1B

Other materials

- Activity Book: unit 1
- CLIL Readers

Timing

October	November	December
■ ■ ■ ■	■ □ □ □	□ □ □ □

Learning goals

- To activate previous knowledge: Our body needs energy to carry out all activities
- To describe some everyday activities

Key language

Vocabulary

sleeping, swimming, writing

Language structures

The girl in photo A is swimming.
She needs a lot of / a little energy.

1 The human body

What do you know about the body?

Energy from food helps us to **grow** and to **be active**.

Observe

1 **What activities can you see in the photos? Do we need energy for all of them? Tell your partner.**

The girl in photo A is swimming.

I think she needs a lot of energy.

You already know!

- Muscles and bones work together to move our bodies.
- Our senses provide information about our environment.
- Each sense is connected to different organs in our body.

Observe

1 ***What activities can you see in the photos?***

Read the speech bubbles. Then, in pairs, students talk about what the children are doing and if this requires a lot of energy.

The girl is swimming. She needs a lot of energy.

Check answers as a class.

You already know!

Ask for a volunteer to read the text. The students name the five senses.

Reinforcement

Explain that we need energy for everything we do. In groups, students think of as many everyday activities as they can: go to school, study, play with friends, do exercise, make the bed, etc. Ask them to say which activities they think require the most energy.

What is inside our body?

Our body has many **organs** inside to help it to work. **Bones** and **muscles** are organs. The **brain**, the **heart**, and the **lungs** are also organs.

Think about it

2 Listen and say where the organs are.
Are they inside the head or the chest?
Or, are they all over the body?

Final task

Explore the senses.

LibroMedia / i-book

Video

Play the video, first with subtitles on, then without them.
Ask questions and discuss with the class.

Learning goals

- To name some body organs
- To learn where they are located in the body

Key language

Vocabulary
bones, brain, heart, inside, lungs, muscles, outside

Language structures
They are inside the chest / head.
It is all over the body.

Final task

The task helps students to learn how to take care for their sense organs. It encourages them to experiment to find the answer to questions.

What is inside our body?

Say: *Maria. Point to your (heart). Can you feel it? Yes. Can you see it? No, it is inside my body.*
John, point to a leg bone.

Think about it

2 ***Listen and say where the organs are.***

Students listen and say where the organs are.

They point to the picture and say where to find them.
Students learn that most organs are inside our body.
The skin, however, is all over the body.
Give examples. *Lungs (A): they are inside the chest.*
Brain (C): it is inside the skull.

Full transcript, page 56, Track 1.

Learning goals

- To learn about nutrition.
- To identify the four body systems involved in nutrition

Key language

Vocabulary

blood, heart, lungs, stomach; circulatory, digestive, excretory and respiratory systems

Language structures

We digest food. We breathe air.
We expel waste.
Our blood carries nutrients around the body.

Classroom materials

Visual thinking poster: Nutrition

What is nutrition?

Students point to the pictures and name the four body systems.
Tell the students:
Breathe in and out, feel how your lungs move. Touch your wrist with your fingertips. Feel your pulse.

1 ***Let's rap! Inside my body!***

Raps are easy to learn and fun to do. They aid memory and pronunciation.

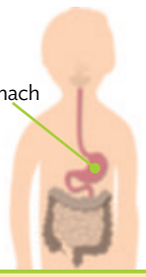
Write numbers 1 to 4 on the board. The students say the order in which the body systems appear in the rap.

Full transcript, page 56, Track 2.

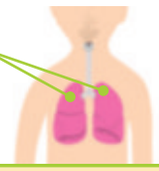
What is nutrition?

The process of obtaining energy from food is called **nutrition**. There are **four body systems** involved in nutrition.

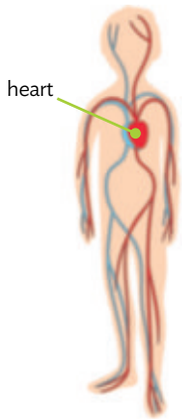
We digest food and absorb nutrients through our **digestive system**.



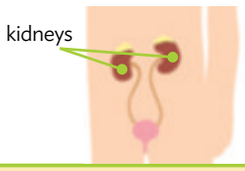
We breathe air in and out through our **respiratory system**. We need oxygen from air to obtain energy from food.



Our **blood** carries nutrients and oxygen around our body through the **circulatory system**.



We expel waste from our body through our **excretory system**.



1 **Let's rap!** *Inside my body!*

Think about it

2 **Which systems work in each situation? Copy and write.**

a. When you go to the toilet. ▶ *Excretory system.*
b. When you run a fast race.
c. When you eat an apple.
d. When you breathe in and out.

3 **Is eating food the same as carrying out nutrition?**

Think about it

2 ***Which systems work in each situation? Copy and write.***

Write the example on the board:
When you go to the toilet. - Excretory system.
Students write the answers in their notebooks.
Explain that when you run, both your circulatory system and your respiratory system are involved.

3 ***Is eating food the same as carrying out nutrition?***

Explain that when we take in food, it is only part of the complicated process of nutrition. Elicit the four different systems involved in nutrition.

What is reproduction?

1

Reproduction is the ability to have **offspring** similar to ourselves.

- Men and women have different **reproductive organs**.
- People reproduce when they are adults.
- Children often look like their parents. They share **physical characteristics**.

4 **Read and copy the correct words to make sentences.**

a. People are **oviparous / viviparous**.

b. Our body is ready to reproduce when we are **a child / an adult**.

c. The reproductive organs are **the same / different** in men and women.

d. **Men / women** carry babies in their womb.

Compare

5 **Bring in photos of different families. Talk about their physical characteristics.**

They have similar eyes.

They have different noses.

Learning goals

- To learn about the process of reproduction in humans
- To differentiate between the male and female reproductive organs
- To analyse how students are similar to their parents

Key language

Vocabulary

oviparous / viviparous; child / adult, man / woman, offspring; ovary, penis, reproductive organ, testicle, vagina

Language structures

They have similar eyes.
They have different noses.
Which ones are male sex organs?

Classroom materials

Visual thinking poster: Reproduction

What is reproduction?

Read the definition of reproduction out loud: the ability to have offspring similar to ourselves. Point to the picture and explain that men and women have different reproductive organs. We are born with them, but reproduction takes place between a man and a woman when they are adults. Name the organs.

Explain how we share physical characteristics with our parents, or other family members.

Ask: *Do you look like your mother or your father? Do you have the same eye colour as your mum / dad?*

If there are adopted students or orphans in the class, work with photos of unknown families or families of famous people.

4 ***Read and copy the correct words to make sentences.***

First, do the activity as a whole class. Students write the sentences in their notebooks and correct them in pairs.

Compare

5 ***Bring in photos of different families. Talk about their physical characteristics.***

Students can bring photos of their own families or cut some out of magazines. They compare facial characteristics, height, build, hair, etc.:

We have similar eyes.
I have hair like my dad.

Learning goals

- To learn that sensitivity is the ability to detect and respond to information about the environment
- To be aware of the processes involved in everyday decisions and actions

Key language

Vocabulary

detect, environment, respond; hear, see, smell, taste, touch

Language structures

What do your senses detect?
How do you respond?

Classroom materials

Visual thinking poster: Sensitivity

What is sensitivity?

Sensitivity is the ability to **detect** and **respond** to information about the **environment**. We detect this information with our **senses**.

We receive information from the environment.

We think of a response.

We carry out the response.

1 **Look at the pictures and listen.**

2 **Answer the questions in your notebook.**

a. What is the information the girl detects? ▶ *It starts to rain.*
b. Which senses help the girl to detect this information?
c. How does she respond to the information?

Think about it

3 **Think of an everyday situation, then draw three pictures in your notebook.**

Picture 1 You detect information about the environment.

Picture 2 What do your senses detect?

Picture 3 How do you respond?

- Role-play your situation in front of the class.

What is sensitivity?

Students look at the pictures.

Say: *Look at the girl. What is happening in the first picture?*
What is she thinking?
What is she doing?

1 ***Look at the pictures and listen.***

Students look at the pictures and listen to the audio. They follow each situation as they listen.
Full transcript, page 57, Track 3.

2 ***Answer the questions in your notebook.***

Revise the sense organs. *How do we detect rain?* Elicit: *We see it, we hear it, we feel it.*

Think about it

3 ***Think of an everyday situation, then draw three pictures in your notebook.***

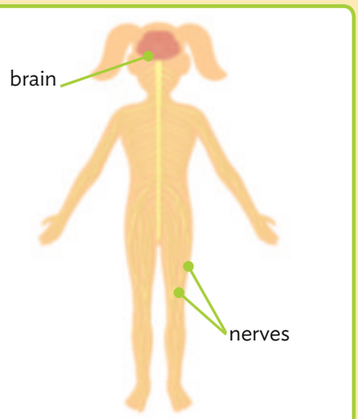
Suggest a few situations, for example: *A cake in the oven is very hot; think about using oven gloves; take the cake out of the oven using oven gloves.*

How do we control movement?

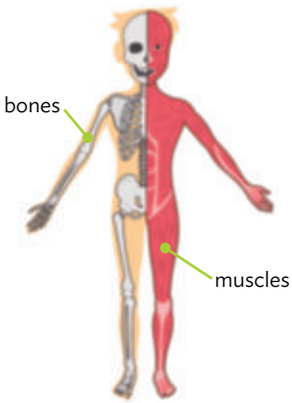
1

Two systems work together to move our body:

- The **nervous system**: our **brain** and **nerves** work together.
  Nerves are connected to all parts of our body. They **send** and **receive** messages to and from the brain.
  The brain interprets the messages and thinks of a response.
- The **locomotor system**: all our **bones** and **muscles** work together.
  They carry out the response to move our body.



The **nervous system** is made up of the **brain** and the **nerves**.



The **locomotor system** is made up of our **bones** and **muscles**.

4 **How many bones and muscles do you know? Tell your partner.**

5 **Listen and say *nervous system* or *locomotor system*.**

6 **Write the sentences in order in your notebook.**

a. Your brain sends the message through your nerves.
b. Your bones and muscles work together to bend your arm.
c. Your bones and muscles receive the message.
d. Your nerves are connected to your bones and muscles.
e. You want to bend your arm. ➤ 1

Learning goals

- To learn that the nervous system is made up of the brain and nerves
- To learn that the locomotor system is made up of bones and muscles
- To understand how these two systems control movement

Key language

Vocabulary
bones, brain, locomotor system, message, muscles, nerves, nervous system; interpret, receive, respond, send.

Language structures
How many bones and muscles do you know?

How do we control movement?

Students look at the pictures of the nervous and locomotor systems. Read the corresponding texts. Read sentences out of order and ask students to identify the system.

Say: *Put your hand up; how many bones and muscles are involved? Do you know them?*

Think about the connection between your brain and your hand.

Write on the board:

Brain → nerves → muscles → bones → movement.

4 *How many bones and muscles do you know? Tell your partner.*
Students work in pairs and make lists.

5 *Listen and say* nervous system *or* locomotor system.
Students listen to the audio and identify which system is being described.
Full transcript, page 57, Track 4.

6 *Write the sentences in order in your notebook.*
After completing the activity and checking the answers, ask students to think of other situations, involving different limbs or muscles. Then, ask them to describe the process.
Examples: *You want to kick a ball.*
You want to close your eyes.

Extension

Role-play. Students play different roles: the brain, the nerves, the bones, the muscles.

They think of a situation like the one in Activity 6 and act it out it in front of the class.

Learning goals

- To learn how we see things
- To identify the parts of the eye
- To learn about size, shape, colour and distance

Key language

Vocabulary

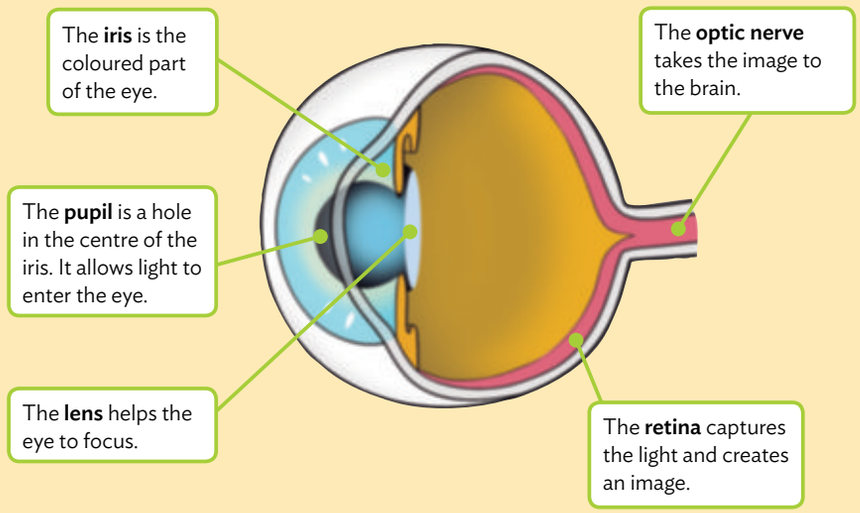
iris, lens, optic nerve, pupil, retina, sight

Language structures

Light enters through the pupil.
Which part of the eye gives us our eye colour?

How do we see things?

Our **eyes** are our organs of **sight**. We use them to identify **colour**, **size**, **shape** and **distance**.



1 Look at the diagram. Which part of the eye gives us our eye colour?

2 How do we see things? Write complete sentences in your notebook.

a. Light enters the eye through the ...
b. The ... focuses the light.
c. The ... produces an image.
d. The ... sends the image to the brain.

Think about it

3 Why do we have two eyes? Investigate.

- Close one eye at a time.
- Hold a finger about 20 cm away from your eyes.
- Then, look at your finger with both eyes open.
- Can you draw what you see each time?
- Write a conclusion: We see things better with **one eye / two eyes**.

How do we see things?

Students look at the picture and read about the different parts of the eye and the role of each part.

In pairs, ask them to try to identify the external parts of the eye and name them.

Say: *Look at your partner's eye. Can you see the retina? Can you see the iris?*

1 ***Look at the diagram. Which part of the eye gives us our eye colour?***
Students identify the coloured part as the iris. Ask students to count how many different eye colours they can identify in the class.

2 ***How do we see things? Write complete sentences in your notebook.***
Students look at the diagram. Do the activity orally, then students complete the sentences in their notebooks.

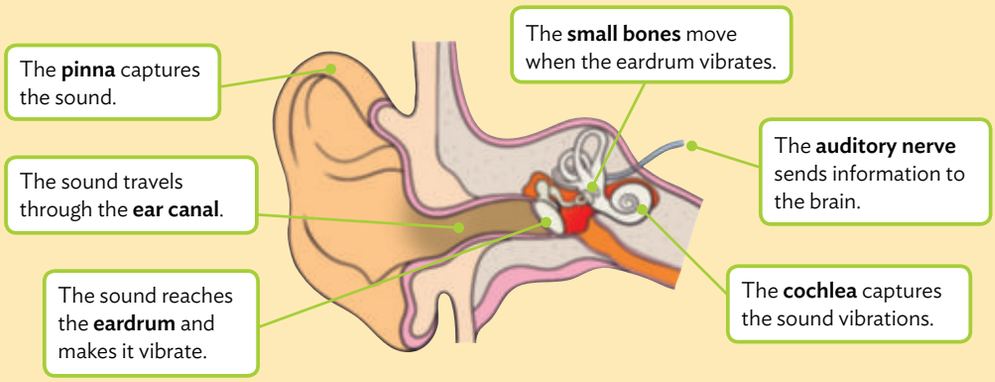
Think about it

3 ***Why do we have two eyes? Investigate.***
Act out the experiment first. Students practise as a class. Prompt students to conclude that we need both eyes to focus well on an object.
Say: *We see things better with two eyes.*

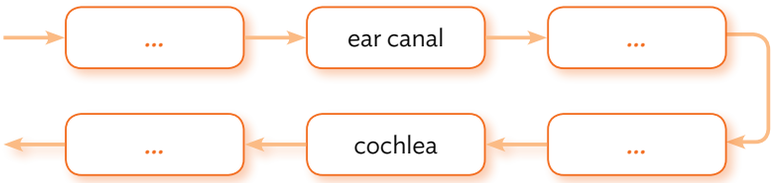
How do we hear things?

1

Our **ears** are our organs of **hearing**. We use them to identify different **sounds**.



4 What path does sound take? Copy the flow diagram and write the parts of the ear.



Mini Lab

Can you identify which direction sounds come from?

Do your experiment

1 Close your eyes.
2 Your partner claps their hands in front, above and behind you.
3 Say which direction the sound comes from.

Write your conclusion

- We **can / cannot** identify which direction sounds comes from.

Learning goals

- To learn how we hear
- To learn the different parts of the ears
- To identify the path that sound takes

Key language

Vocabulary
auditory nerve, cochlea, ear canal, eardrum, pinna

Language structures
What path does sound take?
Sound travels...
The sound reaches...

How do we hear things?

Students look at the diagram and read the labels.

Explain the different parts and ask: *Which part of the ear can you see.* Explain that the pinna is outside our body. The rest of the ear is internal.

4 ***What path does sound take?***

Students copy the flow diagram and complete it with the parts of the ear.

Pinna → ear canal → eardrum → small bones → cochlea → auditory nerve.

Mini Lab

Can you identify which direction sounds come from?

Students work in pairs to carry out the experiment. Ask them if they can hear better on one side than on the other side. Get them to make sounds using different objects.

The students write their conclusions in their notebooks.

Learning goals

- To learn that the skin is the largest organ in our body
- To find out how it works as the organ of touch
- To identify the different parts of this organ

Key language

Vocabulary

hair, nerve, pore, receptors, skin, touch

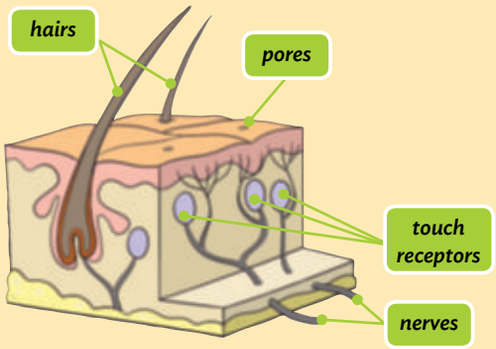
Language structures

Is your skin equally sensitive?
It is / is not equally sensitive.

How do we feel things?

Our body is covered with **skin**. Our skin is our organ of **touch**. It is the largest organ in our body.

The skin has many **touch receptors**. We can feel **temperature**, **textures** and **pain** with our skin.



Mini Lab

Is your skin equally sensitive in all parts of your body?

You need

- some ice cubes
- a blindfold

Do your experiment

1. Put on the blindfold. Your partner touches different parts of your body with the ice cube.
2. Copy the table and record your results.
3. Compare your results with your partner.

Write your conclusions

- The skin in different parts of our body **is / is not equally sensitive**.
- The skin in the more sensitive parts of our body has **more / fewer touch receptors**.

body part	very sensitive	less sensitive
arm		
palm of hand		
back of neck		
bottom of feet		
lips	✓	

How do we feel things?

Students look at the diagram of the skin. Explain that touch receptors are responsible for our sense of touch.

The students experiment by touching their arm with different objects (a pen, feather, ruler, finger) and applying different amounts of pressure.

For each action, ask questions: *Does it feel the same when you touch your arm with a pen and with a feather?*

Mini Lab

Is your skin equally sensitive in all parts of your body?

Students work in pairs and do the experiment. They copy the table and record the results. They compare their results with their partner and discuss the conclusions as a class.

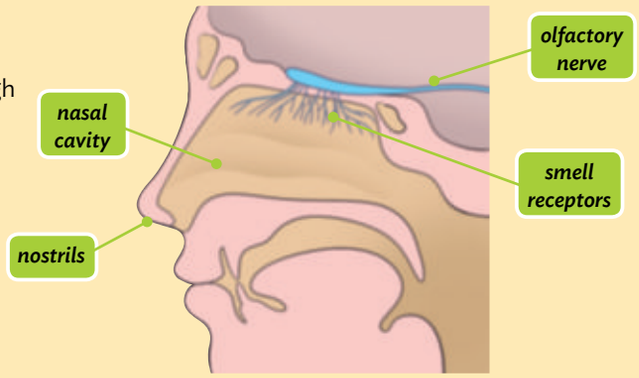
Ask: *What part of your skin is very sensitive? Which part is less sensitive? In which part do you think there are more / fewer touch receptors?*

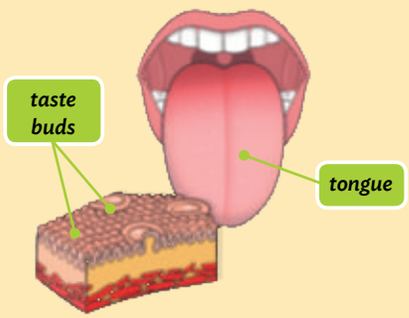
Explain that the bottom of the feet and the lips are very sensitive areas as they have many touch receptors.

How do we smell and taste things?

1

Our **nose** is our organ of **smell**.
We use it to identify smells.
We detect different smells through **smell receptors**. These send messages to the brain via the **olfactory nerve**.





The **tongue** is our organ of **taste**.
We use our **taste buds** to identify different **flavours**: **sweet**, **salty**, **sour** and **bitter**.

1 **Answer the questions. Then, listen and check your answers.**

a. Where do smells enter the body? ▶ *Through the nostrils.*
b. What part of the nose helps us detect the different smells?
c. How does the information reach the brain?

Compare

2 **Collect these foods. What flavour are they? Taste them, then tell your partner.**

- lemons
- ham
- vinegar
- ice cream
- dark chocolate
- cheese

What flavour is ice cream?

It's sweet.

Learning goals

- To find out how smell receptors in the nose help us to identify different smells
- To learn that the tongue is our organ of taste
- To find out how our taste buds identify different flavours

Key language

Vocabulary
nasal cavity, nostrils, olfactory nerve, receptors, smell, taste buds, tongue; bitter, salty, sour, sweet

Language structures
What flavour is ice cream?
It's sweet / salty...

How do we smell and taste things?

Students look at the diagrams and identify the different parts of our organs of smell and taste.

Do TPR with the students. Introduce the flavours: *sweet, salty, sour* and *bitter.*

Say: *Look at your partner's tongue.*
Can you see the taste buds?
Are they all the same size?
Are they all in the same place?

1 ***Answer the questions. Then, listen and check your answers.***

Students answer the questions. Play the audio twice. Check the answers as a class.

Full transcript, page 57, Track 5.

Compare

2 ***Collect these foods. What flavour are they? Taste them, then tell your partner.***

In pairs, students taste the foods and decide which flavour they are.

Ask them to note down their results in a table. Students share their results with the rest of the class.

Learning goals

- To review the main concepts and language of the unit

Check your progress

Vocabulary

1 **Listen and say *nutrition*, *reproduction* or *sensitivity*.**

2 **In your notebook, write the sense organ and the sense.**

- retina ▶ *the eye, sight*
- taste buds
- eardrum
- pupil
- touch receptors
- nostrils
- pinna
- olfactory nerve

Concepts

3 **Copy and complete the sentences.**

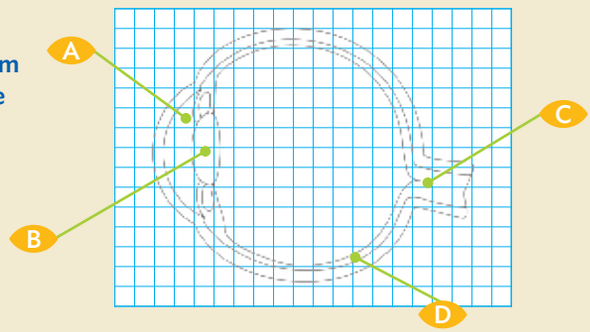
All our bones and muscles together form the ...

Our brain and nerves are part of our ...

Nerves are connected to all ...

Nerves send and receive messages to ...

4 **Copy and label the diagram of the eye. Then, draw the pupil.**



1 ***Listen and say* nutrition, reproduction *or* sensitivity.**

Students listen to the audio as a class.

Full transcript, page 57, Track 6.

2 ***In your notebook, write the sense organ and the sense.***

Ask two students to come to the board. One copies the list and the other writes the sense organ and the sense.

The rest of the class should help them with the answers.

3 ***Copy and complete the sentences.***

Write more sentences about other sense organs:

The largest organ in our body is...
Sounds travel through...

4 ***Copy and label the diagram of the eye. Then, draw the pupil.***

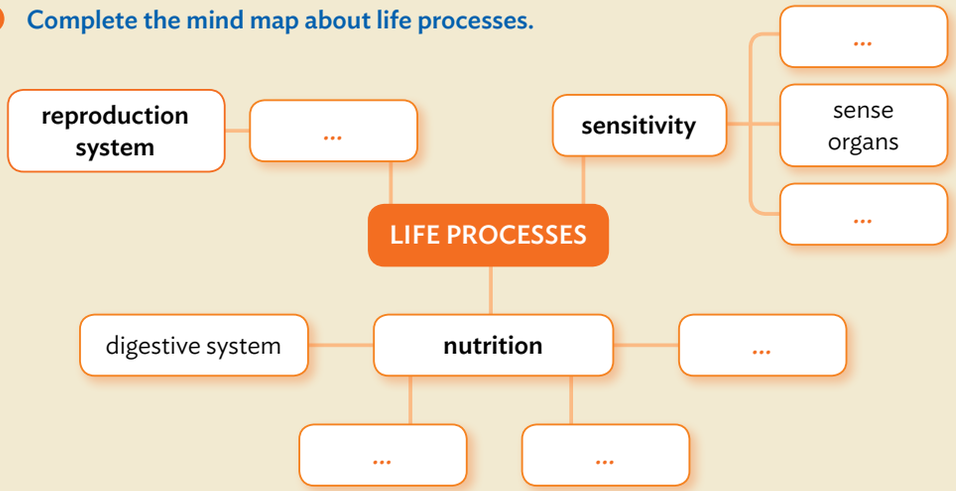
Ask one student to tell the class what the labels are. Ask the rest of the class if they agree.

Apply what you know

5 **Look at the drawings. Number them in order in your notebooks.**

- Which senses are involved?

6 **Complete the mind map about life processes.**



My progress — How is my work?

Think about your work in this unit. Copy and complete.

	Very well	OK	I need practice
I can describe life processes.	...	...	...
I can identify some systems in the body.	...	...	...
I can explain how the senses work.	...	...	...

Learning goals

- To use a graphic organiser as a visual aid to understand the main concepts
- Student self-assessment

5 ***Look at the drawings. Number them in order in your notebooks.***

Get four students to describe each picture in turn.

Ask: *In picture 1, is the boy waking up or going to bed?*

6 ***Complete the mind map about life processes.***

Help the students to remember the life processes they have learnt about. Give the first example: *The reproductive system is involved in reproduction.*

My progress

Motivate the students by showing them how much progress they have made. Students copy the table. They choose one column to tick for each statement, then compare in pairs.

All feedback should be positive at this stage.

Learning goals

- To make students aware of the importance of taking care of the sense organs
- To develop a spirit of cooperation through teamwork activities

1 *In groups, choose one of the senses.*

Have each group choose a sense organ. Make sure that everyone in the group participates.

2 *Make a card for each sense.*

Students look at the photo showing the example of sight. Ask them to think of ways to look after the other sense organs.

Monitor their work and write examples on the board.

3 *Present your information and care tips to the class.*

Students read the speech bubble examples. Have them practise in pairs first.

They share their tip cards with the class.

Final task

Explore the senses

You need

- 5 sheets of card
- a pencil
- coloured pencils

How can we look after our sense organs?

When we look after our senses, we help them to do their job.

Make information cards

1. In groups, choose one of the senses.
   - Find information about how to look after the sense organs.
2. Make a card for each sense.
3. Present your information and care tips to the class.
   - First, practise in pairs what you will say.

How can I look after my eyes?

Never look directly at the Sun!

What parts protect the eye?

The eyelashes and the eyelids.

Be a scientist!

Explore the senses

Do experiments to find out more about the senses

4 **Do each experiment with your partner.**

- Take turns to wear a blindfold for each experiment.
- Exchange conclusions. Which experiments are the easiest / the most difficult?

Explore smell

You need

- 5 zip bags
- crisps
- an onion
- toothpaste
- a banana
- orange peel
- a glass of water

- Your partner puts on the blindfold.
- Put the foods in the zip bags. Careful your partner doesn't see them!
- Open each bag. Your partner smells the contents and tries to identify each smell.

Explore taste

- Your partner is still blindfolded. They pinch their nose.
- Give your partner a sample of the same foods on a toothpick. Don't give them the onion to eat!
- Your partner tastes each sample and tries to identify the flavour.
- Drink water between samples to clear your taste buds.

5 **Create a new experiment about one of the senses.**

- In groups, think of a new experiment to explore the senses.
- Exchange ideas with another group.
- Try out the experiment, then present it to the class.

Learning goals

- To encourage experimentation as a method of study
- To learn to work as part of a group

4 ***Do each experiment with your partner.***

Students take turns and exchange conclusions.

They should work carefully and methodically.

5 ***Create a new experiment about one of the senses.***

Give the class a few ideas, for example:

Sense of touch: students can make a feely bag.
Revise *rough* and *smooth*. Fill zip bags with different materials, like silk fabric, sand paper, cotton, etc. One student is blindfolded and puts one hand in the bag and describes the texture.

2 Food and health

This unit focuses on nutrition. It introduces nutrients in food and discusses the importance of a healthy diet. It shows how a food wheel can help us to choose a balanced diet. It introduces digestion and the digestive system.

Content objectives

- To identify nutrients in foods
- To identify food groups according to their main nutrients
- To use a food wheel to choose a healthy diet
- To identify the main organs of the digestive system
- To learn how digestion works

Final task: Make a model of your teeth

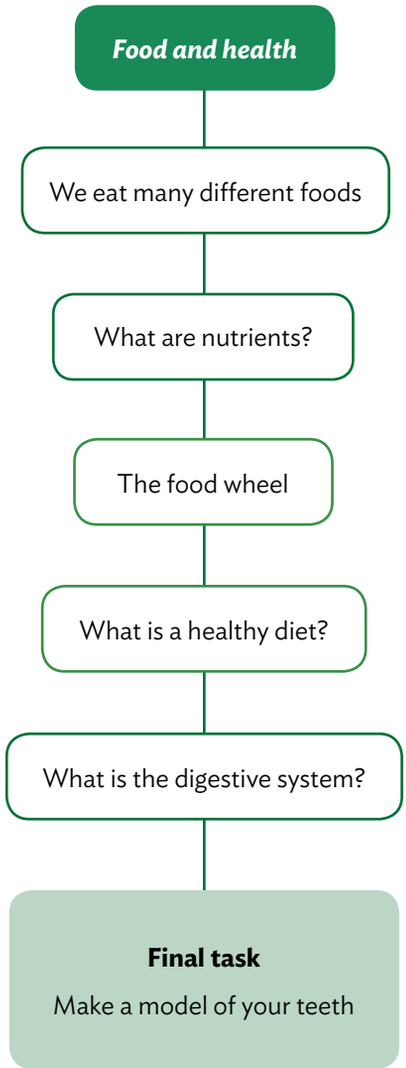
Language objectives

- Nutrients in foods
- The food wheel and foods
- The components of a healthy diet
- The parts of the digestive system

Assessment criteria

- To describe different nutrients
- To name different foods
- To classify foods according to their main nutrients
- To recognise the components of a healthy diet
- To describe the digestive system

Unit 2 outline



Unit 2 resources

Digital resources

- LibroMedia / i-book: unit 2
- Audio: unit 2

Classroom materials

- Visual thinking posters: Nutrition, Healthy food

Photocopiable materials

- Reinforcement worksheet unit 2
- Extension worksheet unit 2
- Graphic organiser: Food and health
- Language support: unit 2
- Assessment worksheets 2A and 2B
- Term assessment

Other materials

- Activity Book: unit 2
- CLIL Readers

Timing

October	November	December

Natural Science ***Answer key***

Answer key

→ 1. The human body

Page 8

Observe

1. What activities can you see in the photos? Do we need energy for all of them? Tell your partner.

Model answer. (M.A.)

The girl in photo A is swimming.
I think she needs a lot of energy.

The girl in photo B is writing.
I think she needs a little energy.

The boy in photo C is sleeping.
I think he doesn't need a lot of energy.

Page 10

Think about it

2. Which systems work in each situation? Copy and write.

a. When you go to the toilet. *Excretory system.*

b. When you run a fast race. *Respiratory system and circulatory system.*

c. When you eat an apple. *Digestive system.*

d. When you breathe in and out. *Respiratory system.*

3. Is eating food the same as carrying out nutrition?

M. A.

No, eating food is only a part of nutrition. In addition to the digestive system, we have three other body systems that help us to obtain energy from food:

- *We breathe in oxygen through our respiratory system. We need it to obtain energy from food.*
- *Our blood carries nutrients and oxygen around our body through the circulatory system.*
- *We expel waste from our body through our excretory system.*

Page 11

4. Read and copy the correct words to make sentences.

a. People are *viviparous*.

b. Our body is ready to reproduce when we are *an adult*.

c. The reproductive organs are *different* in men and women.

d. *Women* carry babies in their womb.

Compare

5. Bring in photos of different families. Talk about their physical characteristics.

M.A.

They have different noses.

They have different coloured eyes.

They have similar mouths.

They are different heights.

Page 12

2. Answer the questions in your notebook.

a. What is the information the girl detects? *It starts to rain*.

b. Which senses help the girl to detect this information? *Touch, sight, hearing.*

c. How does she respond to the information? *She puts on waterproof clothes and takes an umbrella*.

Think about it

3. Think of an everyday situation, then draw three pictures in your notebook

M.A.

Picture 1: *I am listening to music.*

Picture 2: *I detect the volume is too loud*.

Picture 3: *I turn down the volume.*

Page 13

4. How many bones and muscles do you know? Tell your partner.

M.A.

I know two muscles: biceps and triceps.

I know three bones: skull, pelvis and femur.

5. Listen and say *nervous system* or *locomotor system*.

Our brain and nerves working together:
the nervous system.

Our bones and muscles working together:
the locomotor system.

Your brain sends and receives messages:
the nervous system.

The nerves in your hand tell you that something is hot:
the nervous system.

Your bones and muscles move your hand:
the locomotor system.

6. **Write the sentences in order in your notebook.**

   a. *Your brain sends the message through your nerves.* 2

   b. *Your bones and muscles work together to bend your arm.* 5

   c. *Your bones and muscles receive the message.* 4

   d. *Your nerves are connected to your bones and muscles.* 3

   e. *You want to bend your arm.* 1

Page 14

1. **Look at the diagram. Which part of the eye gives us our eye colour?**

   The iris.

2. **How do we see things? Write complete sentences in your notebook.**

   a. Light enters the eye through the *pupil*.

   b. The *lens* focuses the light.

   c. The *retina* produces an image.

   d. The *optic* nerve sends the image to the brain.

Think about it

3. **Why do we have two eyes? Investigate.**

   Conclusion: *We see things better with two eyes*

Page 15

4. **What path does sound take? Copy the flow diagram and write the parts of the ear.**

   (Clockwise from left) *Pinna,* ear canal*, eardrum, small bones,* cochlea*, auditory nerve.*

Mini Lab

Can you identify which direction sounds come from?

M.A.

Conclusion: *We can identify which direction the sound comes from with our eyes closed.*

Page 16

Mini Lab

1. **Is your skin equally sensitive in all parts of your body?**

   Conclusions:

   The skin in different parts of our body *is not equally sensitive.*

   The skin in the more sensitive parts of our body has more touch receptors.

Page 17

1. **Answer the questions. Then, listen and check your answers.**

   a. Where do smells enter the body? *Through the nostrils.*

   b. What part of the nose helps us detect the different smells? *The smell receptors.*

   c. How does the information reach the brain? *Through the olfactory nerve.*

Compare

2. **Collect these foods. What flavour are they? Taste them, then tell your partner.**

   M.A.

   What flavour are lemons? They're sour.

   What flavour is ham? It's salty.

   What flavour is vinegar? It's sour.

   What flavour is ice cream? It's sweet.

   What flavour is dark chocolate? It's bitter.

   What flavour is cheese? It's salty.

Natural Science **Worksheets**

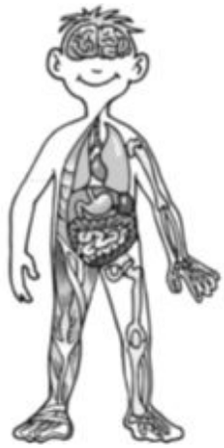
- Reinforcement
- Extension
- Graphic organiser
- Language support
- Diagnostic test
- Assessment

The human body

REINFORCEMENT

Name _____ Date _____

1 **Match the words to the diagram.**



brain

lung

muscle

stomach

kidney

bone

2 **Match the system with the organ.**

• respiratory system	kidney
• excretory system	blood
• circulatory system	stomach
• digestive system	lungs

3 **Write *T* (true) or *F* (false). Correct the false sentences.**

a. Nutrition is the ability to have offspring. _____

_____

b. Reproduction happens when people are adults. _____

_____

c. Sensitivity does not help us to respond to our environment. _____

_____

d. Our bones and muscles are part of the respiratory system. _____

_____

The human body

REINFORCEMENT

Name _____ Date _____

4 **Draw a diagram of the eye and label the parts using the words.**

lens	pupil	optic nerve	retina	iris

_____

_____

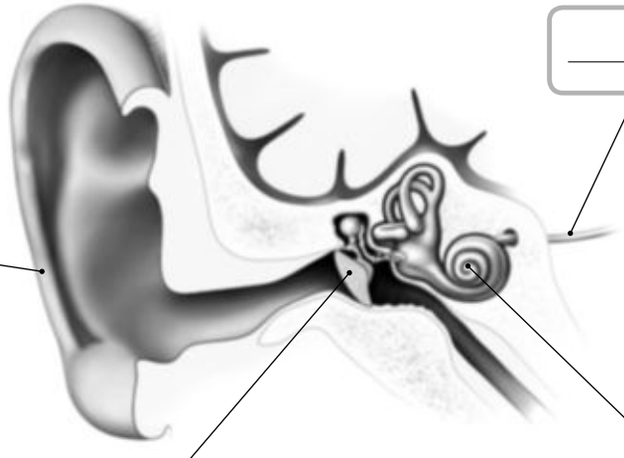
_____

_____

_____

5 **Find the words for parts of the ear. Then, label the diagram.**

acloche	nanip	udreram	duatiyor vener



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NOTES