NATURAL SCIENCE

LEARN TOGETHER

TEACHER'S BOOK

PRIMARY 2

BY ME

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INTRODUCTION TO *ByME* NATURAL SCIENCE LEARN TOGETHER

Who the course is for

ByME Natural Science Learn Together is a six-level course for pupils studying the subject of Natural Science in a bilingual context. Level 2 is for pupils in year 2 of Primary.

Aims of the course

The course follows the Natural Science syllabus as laid out by the LOMCE. *ByME Natural Science Learn Together* aims to develop pupils' scientific knowledge and language skills. Given the challenge of teaching Natural Science in a bilingual classroom, it is important that language does not overwhelm the content, nor vice versa. For that reason, this programme is designed to ensure a unique balance between language and content.

ByME Natural Science Learn Together fosters pupils' curiosity about the world around them, keeping them engaged and motivated to learn, as well as keeping teachers satisfied with its user-friendly features:

- A simple, fixed unit structure to ensure easy navigation.
- A clear design with a balanced use of photographs and illustrations, providing visual aids that facilitate comprehension.
- A focus on scientific method in combination with Cooperative Learning in order to develop pupils' cooperative, investigative and presentational skills.
- An easy-to-apply 360° evaluation tool for continuous teacher, peer and self-evaluation. At the beginning of every unit, simply check what each of your pupils already knows and then plan your lessons accordingly by selecting the most suitable activity types for your pupils' needs.

- Project Based Learning. End-of-term projects bring authentic learning and real problem solving straight to your classroom! The projects have been carefully selected to motivate pupils and give them the chance to have a positive impact on their environment.
- Language support sections are present throughout the course to help pupils talk about content, promote active communication and build their confidence in speaking.
- A strong focus on scientific method helps develop investigative skills, as well as focus on ethics and values to develop higher-order thinking skills.

COURSE COMPONENTS: PUPIL'S MATERIALS

PUPIL'S BOOK

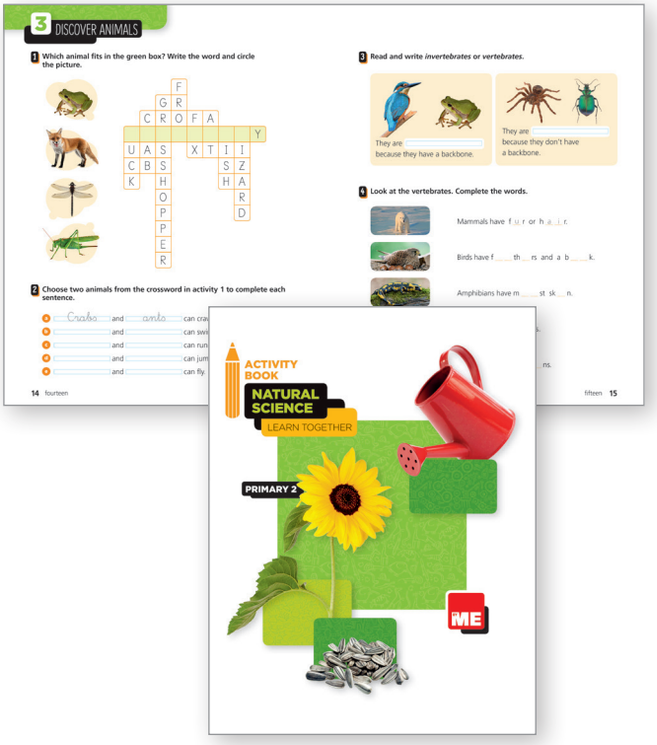
The Pupil's Book includes:

- a two-page opening unit introducing pupils to the characters that will accompany them on their learning experience: Ben and Katie
- six main units
- three end-of-term review sections
- three term projects
- a picture dictionary.

ACTIVITY BOOK

The optional Activity Book is comprised of six full-colour pages per unit. It offers:

- a range of engaging exercises to consolidate and extend the topics covered in the Pupil's Book
- additional reading and writing practice of the science content
- a mini-project designed to encourage pupils to explore scientific concepts and methods at home or in the classroom
- a bilingual glossary to support language learning.



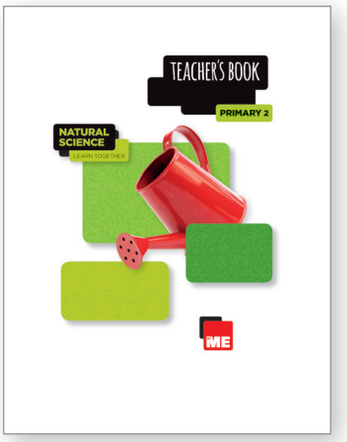
COURSE COMPONENTS: TEACHER'S MATERIALS

TEACHER'S BOOK

The full-colour Teacher's Book includes easy-to-follow, flexible lesson plans and practical support specially designed for English teachers teaching Natural Science. A clear, simple design helps create ease-of-reference even in the most challenging teaching situations.

The Teacher's Book fully addresses the LOMCE curriculum through:

- careful attention to content, evaluation criteria and learning standards
- treatment of the key competences in correlation with the learning standards, clearly identified key content and extras sections
- enabling teachers to focus on required content or extend their lessons according to their timetable
- providing full answer keys to all the questions and activities in the Pupil's Book.



TEACHER'S CD

Included with the Teacher's Book, the Teacher's CD offers the key recordings for the Pupil's Book in an easily accessible format. It can be played on audio players or on the computer. It includes:

- recordings of the main texts of the content pages
- external exam-style recordings for listening skills practice.

Access to the complete audio is also available through the Digital Resources.

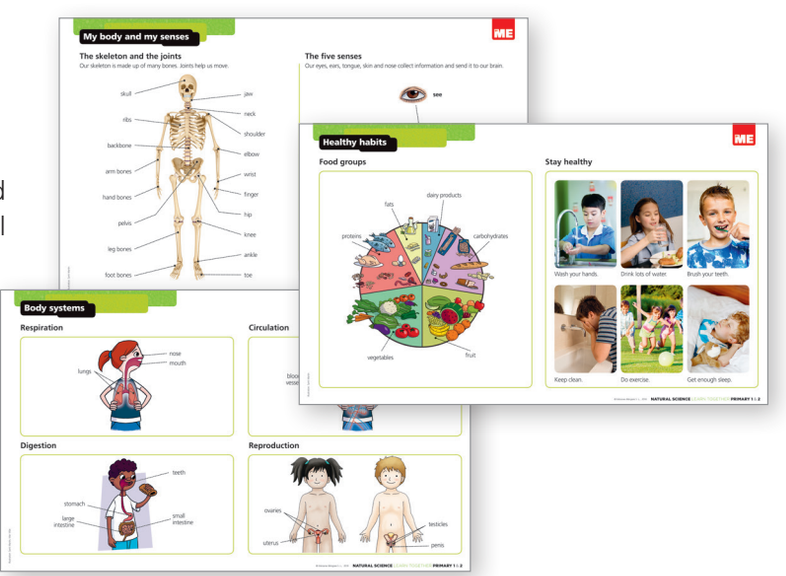
CLASSROOM MATERIALS

POSTERS

Large-scale printed posters are available for added visual support in the classroom, providing additional opportunities for vocabulary practice and revision.

FLASHCARDS

In Levels 1 and 2, flashcards are available in printed format, or in digital format from Level 3 upwards.



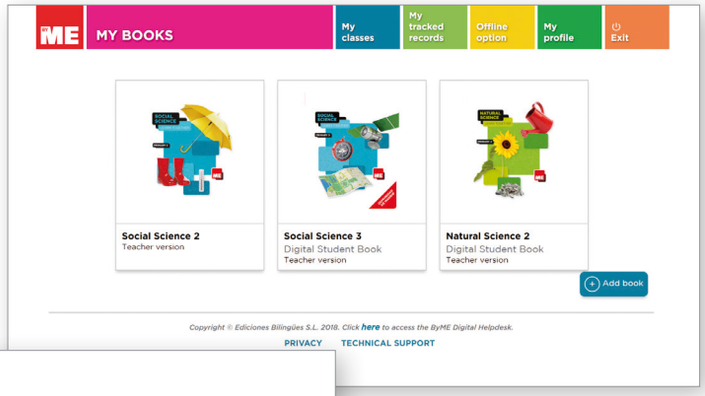
COURSE COMPONENTS: DIGITAL RESOURCES

The ByME digital platform gives all teachers using *ByME Natural Science 2 Learn Together* free access to the ByME Digital Resources. The ByME digital platform allows you to:

- find all your ByME digital books in one place
- create a class in one click
- follow your pupils' progress in every unit and keep track of every activity
- use it both online and offline.

As a teacher, your license gives you access to extensive digital resources:

- Pupil's Book
- Learning Kit
- Teacher's Kit
- Family Corner.

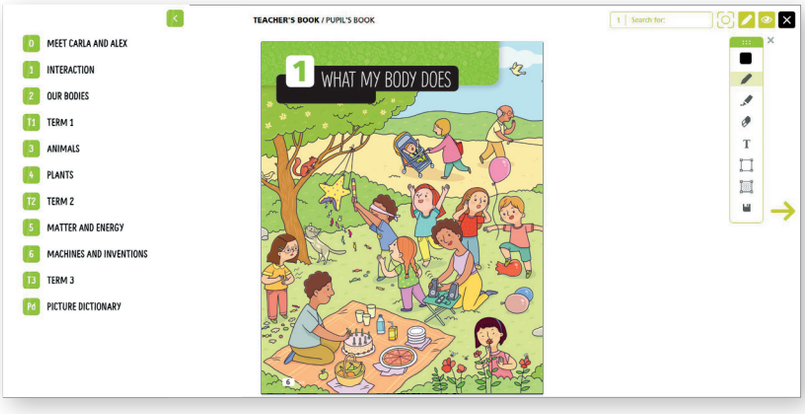


PUPIL'S BOOK

All unit sections and associated resources are easy to access.

The Pupil's Book includes:

- audio
- interactive activities
- tools (draw, underline, erase, test notes, highlight, hide and save)
- page view options
- zoomed in images.



LEARNING KIT

The Learning Kit allows both the pupil and the teacher to access all the resources that will help the learning process.

- Interactive activities: they can be accessed both from the Pupil's Book and the Learning Kit. Keep track of your pupils' records!
- Flashcards: create sets from existing flashcards or create new ones.
- Presentations: review the unit's key content with integrated audio.
- Songs: sing along with the songs.
- Multimedia: access videos and weblinks to make key topics meaningful in a real context.

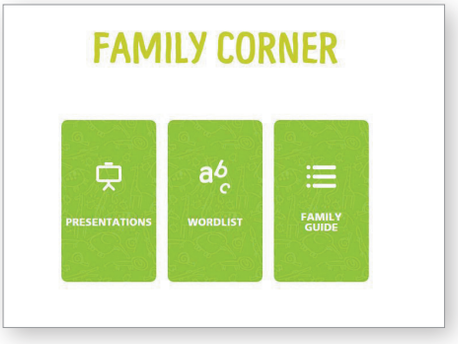
TEACHER'S KIT

The Teacher's Kit is only accessible for the teacher. It includes:

- Teacher's Book: view or download a pdf version of the Teacher's Book.
- Test generator: create tests adapted to your pupils' needs.
- Methodology: access unit syllabi, letters home, methodological approach documents, etc.
- Wordlist: in English and Spanish.
- Worksheets: extra printable resources.
- Lyrics: downloadable song lyrics.
- Multimedia: access videos and weblinks to make key topics meaningful in a real context.
- 360° evaluation: ready-made tests to assess your pupils from a 360° perspective.

FAMILY CORNER

The Family Corner is a space for parents to find out more about what their children are learning. It includes the presentations in Spanish, a wordlist, and the family guide.



HOW TO USE THE PUPIL'S BOOK

OPENING PAGES

Each unit opens with a vibrant double-page spread. These introductory pages seek to motivate pupils by touching on prior knowledge of key topics thereby increasing pupils' confidence. Key content and vocabulary is introduced through attractive large-scale illustrations, songs and engaging activities.

The illustration always features the Level 2 Natural Science course characters, Katie and Ben, doing something connected to the unit topic.

A motivational song with a related activity introduces pupils to the main topic of the unit.

A reference to the diagnostic evaluation and self-evaluation tools which help assess pupils' prior knowledge.

The language support section helps the pupils answer activities confidently by providing them with useful language structures and prompts.

STORY

The *Story* follows on directly from the unit opening. The action takes place in the same place as the opening illustration and always features the course characters exploring the unit topic and vocabulary in more depth.

A dramatisation of the story can be listened to on the Teacher's CD or on the digital component. After listening to the story, pupils practise their speaking skills by acting out the scene.

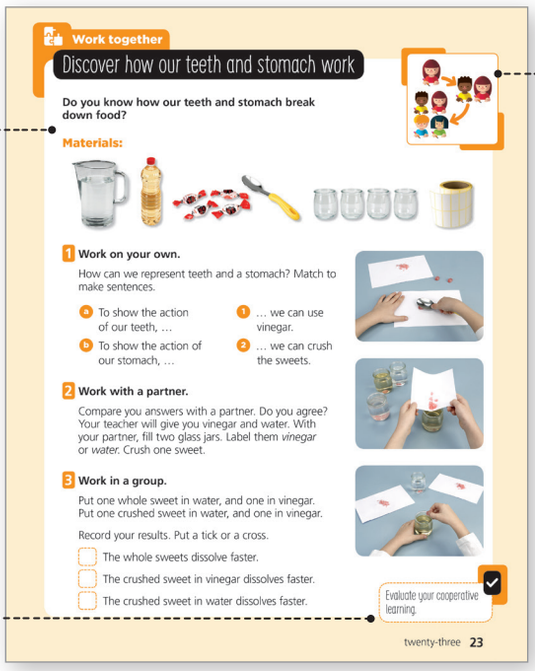
The story activities are designed to reflect the most common activities found in external exams.

WORK TOGETHER

The *Work together* section provides pupils with the opportunity to carry out fun projects and simple experiments using Cooperative Learning techniques. Using everyday materials, projects are carefully designed to be accessible and suitable for young children.

A visual reminder of the materials needed to complete the project.

A reference to the self-evaluation grid where pupils can evaluate their cooperative task.



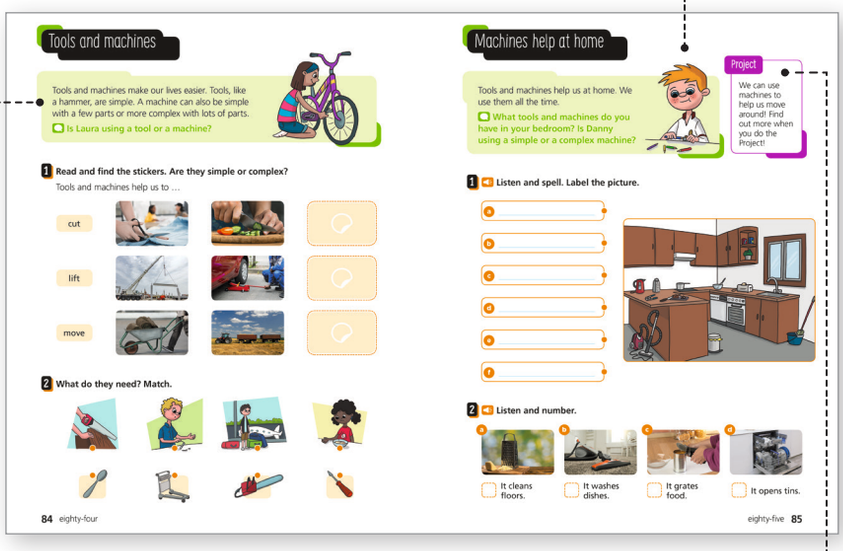
Each unit suggests a Cooperative Learning technique that will provide the optimal learning experience for the pupil and guarantee that all team members get involved.

CONTENT PAGES

The content pages are where pupils build on their prior knowledge through highly visual content and a wide variety of activities presenting different levels of cognitive challenges.

Course characters are repeated throughout the unit presenting the key concepts visually in order to facilitate comprehension.

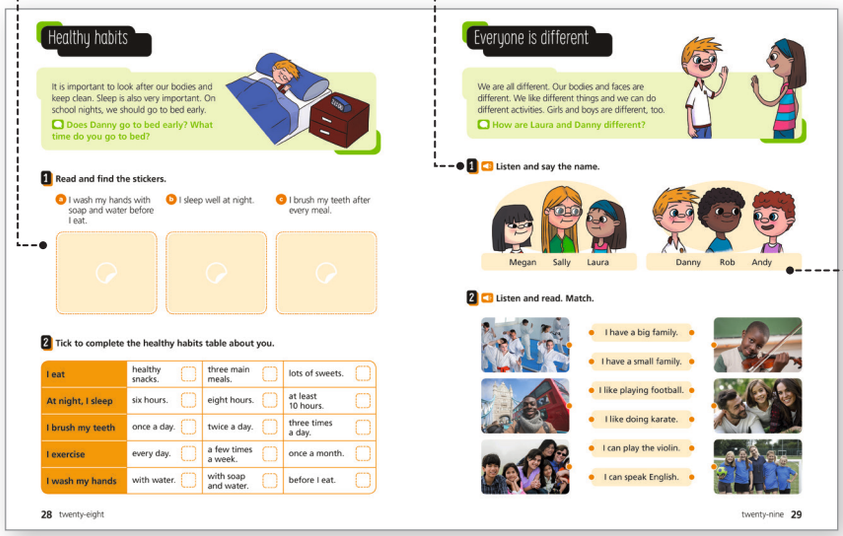
Pupils are introduced gradually and carefully to the topic.



The project boxes give pupils clues about what they will explore and learn during the term projects.

Regular sticker activities increase the variety of available activity types.

Extensive audio activities provide regular practice of listening skills. Songs and chants in every unit provide a comforting link to pupils' English textbooks.



Content pages are richly illustrated with a careful balance of photography and age-appropriate illustration, in order to facilitate comprehension in all learner types and maximise engagement with the content.

OUR CHOICES

In this section pupils engage with their immediate surroundings as they are presented with situations designed to encourage reasoning in order to develop their independence and the beginnings of social and personal responsibility. This section will help reinforce pupils' cooperative and communicative skills. Pupils first do individual activities focusing on the topic and then share their ideas while doing other related activities with a partner.


Our choices

Reuse and recycle at home

1 Listen and tick the things you do.

Separate your rubbish. Take your own bags to the supermarket. Buy things with less plastic and paper.

Take clothes and toys to a charity shop. Do not print too much and reuse scrap paper. Look for other ideas on how to reuse and recycle.

2 Reuse plastic bottles to make plant holders. Discuss with your partner other ways you can reuse plastic bottles.

a At home, keep some used plastic bottles.
b Use books and the internet to look for ideas. Make a list of ways to reuse them.
c Reuse your bottles. Make beautiful plant holders!

Language tips

We can reuse plastic bottles to make (a piggy bank).

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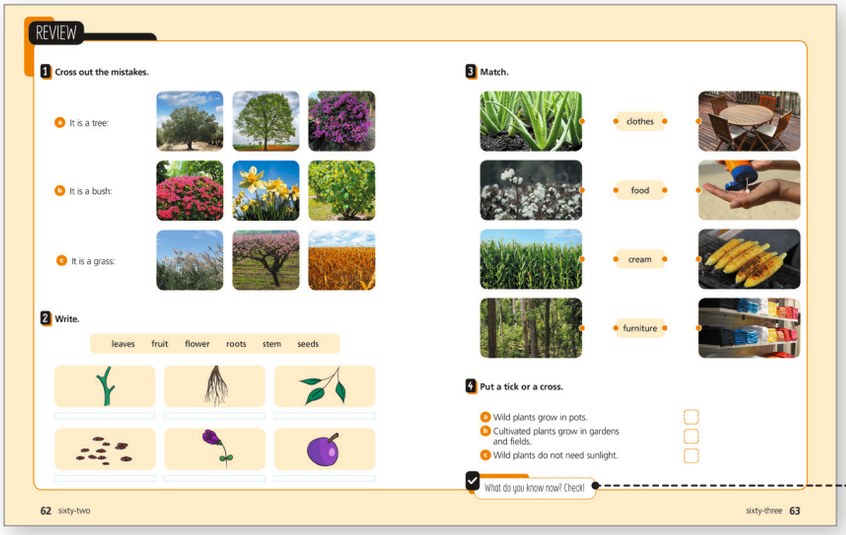
REVIEW

Unit revision pages ensure that pupils' progression is regularly checked and reviewed. The activities are designed not only to review content, but also to practise language skills.


REVIEW

1 Cross out the mistakes.

a It is a tree:
b It is a bush:
c It is a grass:

2 Write.

leaves fruit flower roots stem seeds

3 Match.

clothes
food
cream
furniture

4 Put a tick or a cross.

a Wild plants grow in pots.
b Cultivated plants grow in gardens and fields.
c Wild plants do not need sunlight.

What do you know now? Check!

62 sixty-two

sixty-three 63

A reference to the end-of-unit test where pupils can check their progress.

TERM PAGES

Four end-of-term pages provide additional progress-checking opportunities, as well as the opportunity to practise different communicative skills.

TERM REVIEW

Term review pages ensure that pupils' progression is regularly checked and reviewed through a broad range of enjoyable activity types.

A reference to the end-of-term test where pupils can check their progress.

PROJECT

In the *Project* section pupils practise problem-solving skills through a Project Based Learning approach. They use special clues included in the units and apply Cooperative Learning techniques to find the solution to a problem. All projects are based on interesting, age-appropriate challenges.

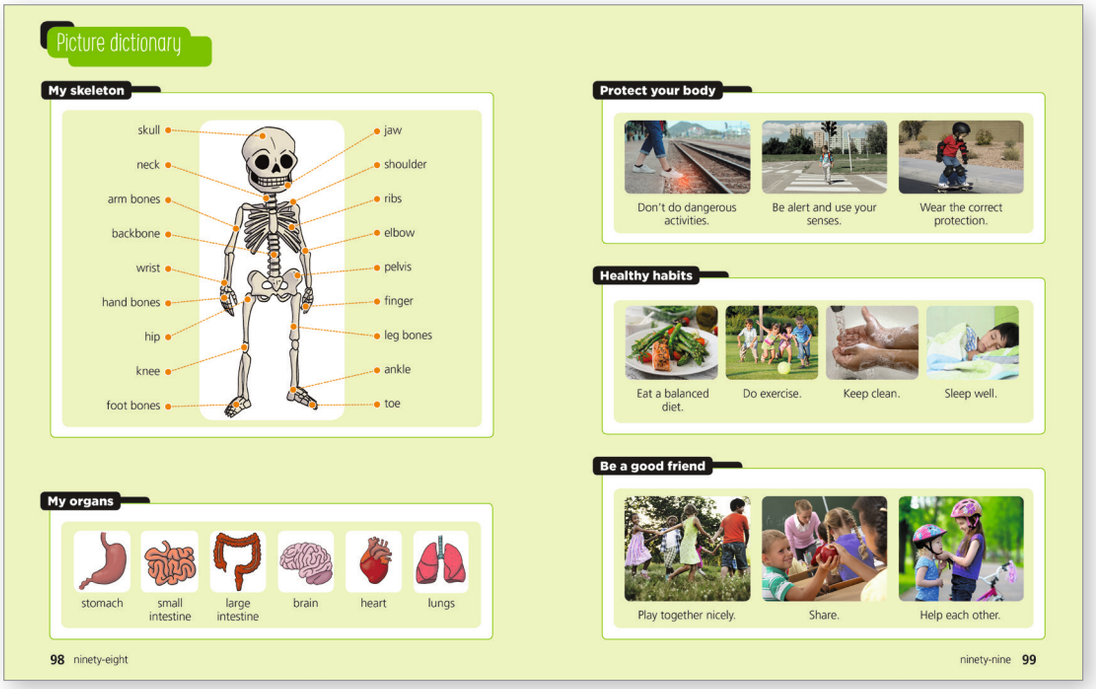
At the end of the project, pupils practise their oral skills to present their work to the class.

A reference to the project evaluation grid where pupils can evaluate their cooperative skills.

END PAGES

PICTURE DICTIONARY

The book ends with an extensive easy-reference dictionary with the focus on photography to help memory and recognition.



HOW TO USE THE TEACHER'S BOOK

The Teacher's Book is specially designed to help Science teachers and provide English language support. It includes easy-to-follow lesson plans and practical support through each activity, highlighting teaching suggestions and tips.

CONTENT MAPS

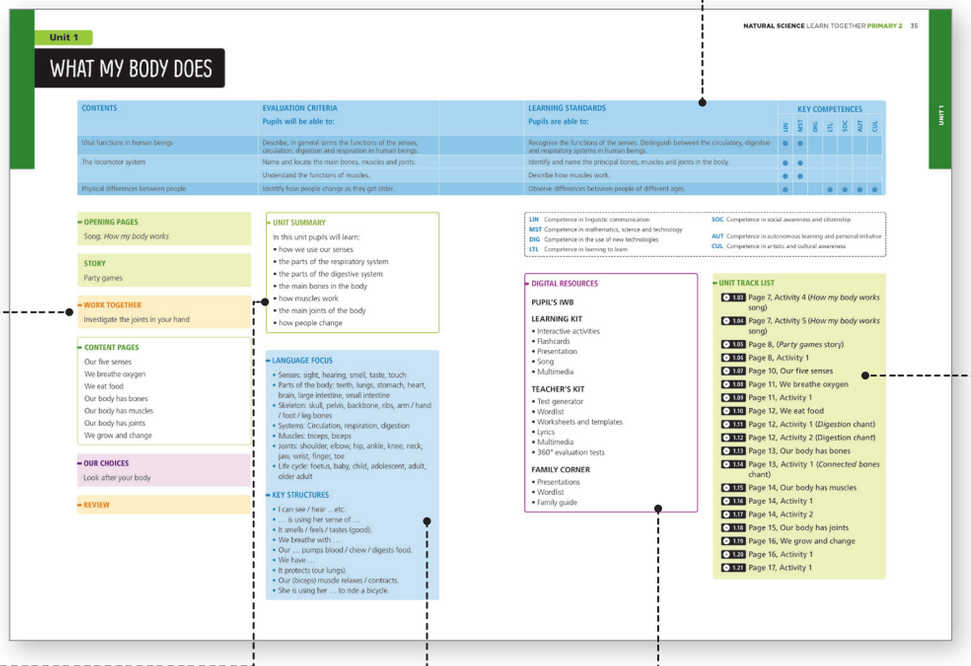
Each unit begins with a content map, fully compatible with the LOMCE curriculum, to help the teacher see at a glance the contents, evaluation criteria, learning standards and key competences ahead.

UNIT STRUCTURE

It provides a quick overview of the different sections within the unit.

CONTENTS, EVALUATION CRITERIA, LEARNING STANDARDS AND KEY COMPETENCES

All key elements of the LOMCE curriculum are clearly mapped out for each unit.



Unit 1

WHAT MY BODY DOES

NATURAL SCIENCE LEARN TOGETHER PRIMARY 2 35

UNIT 1

CONTENTS	EVALUATION CRITERIA Pupils will be able to:	LEARNING STANDARDS Pupils are able to:	KEY COMPETENCES LIN MST DIG LTL SOC AUT CUL
Vital functions in human beings	Describe, in general terms the functions of the senses, circulation, digestion and respiration in human beings.	Recognise the functions of the senses. Distinguish between the circulatory, digestive and respiratory systems in human beings.	● ●
The locomotor system	Name and locate the main bones, muscles and joints.	Identify and name the principal bones, muscles and joints in the body.	● ●
	Understand the functions of muscles.	Describe how muscles work.	● ●
Physical differences between people	Identify how people change as they get older.	Observe differences between people of different ages.	● ● ● ● ●

OPENING PAGES
Song: *How my body works*

STORY
Party games

WORK TOGETHER
Investigate the joints in your hand

CONTENT PAGES
Our five senses
We breathe oxygen
We eat food
Our body has bones
Our body has muscles
Our body has joints
We grow and change

OUR CHOICES
Look after your body

REVIEW

UNIT SUMMARY
In this unit pupils will learn:
- how we use our senses
- the parts of the respiratory system
- the parts of the digestive system
- the main bones in the body
- how muscles work
- the main joints of the body
- how people change

LANGUAGE FOCUS
- Senses: sight, hearing, smell, taste, touch
- Parts of the body: teeth, lungs, stomach, heart, brain, large intestine, small intestine
- Skeleton: skull, pelvis, backbone, ribs, arm / hand / foot / leg bones
- Systems: Circulation, respiration, digestion
- Muscles: triceps, biceps
- Joints: shoulder, elbow, hip, ankle, knee, neck, jaw, wrist, finger, toe
- Life cycle: foetus, baby, child, adolescent, adult, older adult

KEY STRUCTURES
- I can see / hear ... etc.
- ... is using her sense of ...
- It smells / feels / tastes (good).
- We breathe with ...
- Our ... pumps blood / chew / digests food.
- We have ...
- It protects (our lungs).
- Our (biceps) muscle relaxes / contracts.
- She is using her ... to ride a bicycle.

LIN Competence in linguistic communication
MST Competence in mathematics, science and technology
DIG Competence in the use of new technologies
LTL Competence in learning to learn
SOC Competence in social awareness and citizenship
AUT Competence in autonomous learning and personal initiative
CUL Competence in artistic and cultural awareness

DIGITAL RESOURCES

PUPIL'S IWB

LEARNING KIT
- Interactive activities
- Flashcards
- Presentation
- Song
- Multimedia

TEACHER'S KIT
- Test generator
- Wordlist
- Worksheets and templates
- Lyrics
- Multimedia
- 360° evaluation tests

FAMILY CORNER
- Presentations
- Wordlist
- Family guide

UNIT TRACK LIST
1.01 Page 7, Activity 4 (*How my body works* song)
1.04 Page 7, Activity 5 (*How my body works* song)
1.05 Page 8, (*Party games* story)
1.06 Page 8, Activity 1
1.07 Page 10, Our five senses
1.08 Page 11, We breathe oxygen
1.09 Page 11, Activity 1
1.10 Page 12, We eat food
1.11 Page 12, Activity 1 (*Digestion chant*)
1.12 Page 12, Activity 2 (*Digestion chant*)
1.13 Page 13, Our body has bones
1.14 Page 13, Activity 1 (*Connected bones chant*)
1.15 Page 14, Our body has muscles
1.16 Page 14, Activity 1
1.17 Page 14, Activity 2
1.18 Page 15, Our body has joints
1.19 Page 16, We grow and change
1.20 Page 16, Activity 1
1.21 Page 17, Activity 1

UNIT SUMMARY

It provides an overview of what the pupils will learn in the unit.

LANGUAGE FOCUS & KEY STRUCTURES

It presents a summary of the key language and structures covered in the unit.

DIGITAL RESOURCES

An index of the materials and activities available for each unit through the Digital Resources.

TRACK LIST

An index of the audio tracks on the Teacher's CD.

LESSON PLANS

LESSON INFORMATION AT A GLANCE

Lesson summary, language focus and materials to help prepare lessons ahead of time.

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6 WHAT MY BODY DOES

7

SUMMARY

The aim of the unit opener is to activate pupils' prior knowledge of the topic of the unit and stimulate their curiosity for what they are about to learn through activities that develop observation and reasoning skills. Use the picture to activate vocabulary related to the senses, shapes as well as action verbs to describe what is happening in the birthday / park scene.

LANGUAGE

- Party: balloons, piñata, birthday party, birthday cake, candles, music
- Park: cat, birds, squirrel, dog, bees, trees, flowers
- Food and drink: pizza, sweets, water, juice, apples, oranges, bananas, pears
- Action verbs: play, hit, pop, walk
- Senses: see, smell, hear, touch, feel
- He / She is (playing).
- I can see / hear / smell / touch / feel.

MATERIALS

Flashcards: bee, biscuits, flower, fruit, grass, grapes, hear, ice cream, nuts, sausages, see, smell, squirrel, taste, touch.

1 WHAT MY BODY DOES

LET'S BEGIN

1.7

I see, I see with my eyes *(point to eyes)*
A birthday party in the park *(spread arms out)*
I hear, I hear with my ears *(cup hands around ears)*
Birds singing and a dog's loud bark *(one finger pointing up and then down)*
I smell, I smell with my nose *(point to nose)*
A pizza with lots of cheese *(smell and rub tummy)*
I taste, I taste with my tongue *(point to tongue)*
A birthday cake for me! *(lick lips, rub tummy)*
I touch, I touch with my fingers *(rub fingers together)*
The rough bark of a big tall tree *(feel up and down a tree trunk)*
I touch, I touch with my toes *(tap your toes)*
The soft, green grass growing under me *(tap toes and tiptoe around)*

1.03 Activity 4. (*How my body works* song)
1.04 Activity 4. (*How my body works* song)

UNIT 1

GETTING STARTED

- Ask pupils: *How old are you?* Encourage them to ask and answer the question in pairs. Use a calendar to help them with the months and ask: *When is your birthday?* Pupils can raise their hands when they hear their month.
- Ask pupils if they like birthday parties. Elicit games they like playing, and what they like to eat and drink.

STEP BY STEP PAGES 6–7

Focus pupils' attention on the scene. Elicit why the children are in the park in the picture. Tell pupils to point to Katie and Ben. Ask: *What is Katie doing?* Ask questions about the things people are doing and the things they can see in the picture. Use *yes / no* questions for some of the more difficult words. *Is the boy popping the balloon? Is the dog barking?* Use gestures to demonstrate.

Activity 1

- Hold up a mix of flashcards for food and other objects. Say: *Can you eat (grass)?* Pupils answer yes or no.
- Ask volunteers to write the words on the board.

Activity 2

- Say: *Sh* and tell pupils to listen. Ask: *Can you hear anything?* and cup your hand to your ear.
- Point to the speakers and ask: *Can you hear music?* Pupils circle the speakers and four more things they can hear. Ask: *Have you got five circles?* Refer pupils to the Language tips box and read it together then ask them to tell you their answers in full sentences.

Activity 3

Demonstrate not feeling well by holding your head and stomach. Say: *I'm not feeling well.* Ask pupils why the girl is not feeling well. *(She is eating a lot of sweets.)* Ask pupils if they eat a lot of sweets and whether sweets are healthy or unhealthy. Elicit what they can eat instead of sweets, e.g. fruit, nuts, raisins.

Activity 4 1.3

Hold up the see flashcard and ask pupils what they can see in the photo. Do the same with the *hear, taste, smell* and *touch* flashcards. Play the song, pausing after each part while pupils write the number. Check answers by asking: *What is Number 1? etc.*

Activity 5 1.5

Play the song again and show pupils the actions. Encourage pupils to stand up and do the actions.

TARGETED QUESTIONS

⊙ **What can you see in the park?** Pupils point to objects in the park picture and name them.

⊙⊙ **What noises can you hear at school?** Pupils describe or make the noises.

⊙⊙⊙ **What food do you like? Why?** Pupils name some food and describe how it tastes.

⊙⊙⊙⊙ **What games do you like playing with your friends at school?** Pupils name the games they like.

- Provide time and support so that the pupils can express themselves.
- Review any new vocabulary.

WRAP IT UP

- Play' *spy with my little eye*' or *I hear with my little ear*' with the picture.
- Use the flashcards for senses. Hold up one card and ask pupils to tell you one thing in the illustration that they can see, smell, hear etc.

360° EVALUATION

Download, print and distribute the Diagnostic test and Self-evaluation test for the pupils to complete.

GETTING STARTED AND WRAPPING UP ACTIVITIES

Each lesson begins and ends with activities that aim to preview and review important vocabulary and concepts.

STEP-BY-STEP LESSON PLANS

Teacher tips on presenting textual and graphic content, and instructions for guiding pupils through the activities.

TARGETED QUESTIONS

Questions which vary in level of difficulty to get pupils thinking more critically.

360° EVALUATION

Helps teachers personalise their teaching and target their pupils' needs through a series of evaluation tests: teacher, peer and self-evaluations.

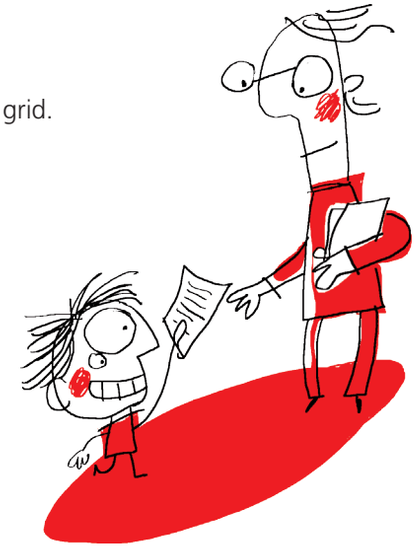
360º EVALUATION

ByME Natural Science 2 Learn Together helps teachers personalise their teaching and target their pupils' real needs.

The material is supported by a 360º evaluation carried out by the teacher, the pupil and his or her peers. All tests and evaluations are tagged with the icon ✅.

The 360º evaluation has three main stages within a unit:

1. Diagnostic stage: includes the teacher diagnostic test and the pupil's self-evaluation. Pupils are asked to take these tests at the unit opening page. These two tests help teachers plan the unit lessons according to their pupils' knowledge.
2. Work with peers stage: represented by the Cooperative Learning evaluation.
3. Assessment stage: made up by the end-of-unit evaluation and the evaluation grid.



TEACHER EVALUATION

The evaluation tests carried out by the teacher include:

- **Diagnostic test:** teachers determine what pupils already know about the unit.
- **End-of-unit test:** pupils carry out a final unit test to check what they have learned.
- **Unit evaluation grid:** teachers evaluate if the pupils have accomplished the evaluation criteria of the unit.
- **End-of-term test:** pupils take an end-of-term test which serves as an additional evaluation tool for the teacher.

The 360° evaluation wraps up with two term evaluations: the end-of-term test (teacher) and the project evaluation (peer).

All the marks can then be recorded in the unit or term log book, made available to the teacher in the digital resources.

SELF

- **Pupil's self-evaluation:** pupils test their prior knowledge of the unit through a self-assessment grid.

PEER

- **Cooperative Learning evaluation:** pupils complete a self-evaluation grid of the cooperative tasks, evaluating its development, their own performance, as well as the performance of their teammates.
- **Project evaluation:** pupils evaluate the development of the project, their own performance, as well as the performance of their teammates, again from a Cooperative Learning perspective.

COOPERATIVE LEARNING

Cooperative Learning is an educational situation in which pupils are required to work together in small groups or teams to support each other in order to improve their own learning and that of others. Cooperative Learning goes beyond merely seating pupils together; simply telling them they are a group does not mean they will cooperate effectively.

Basic principles of Cooperative Learning

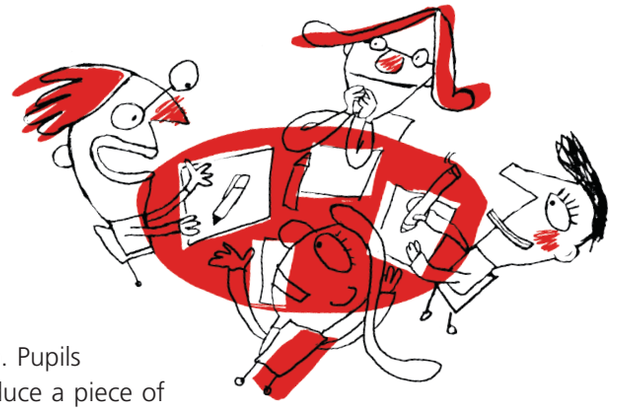
(Johnson, Johnson & Holubec)

1. Positive interdependence

Pupils recognise that with the help of their peers, they can better complete the group's task. Every group member must contribute, and members will depend on each other to complete the task. We can enhance positive interdependence by establishing mutual goals which 'will help each pupil to learn and make sure all other team members learn' (Johnson, Johnson & Holubec, 2008).

2. Individual accountability

Each member of the group is responsible for completing their part of the work and must develop a sense of personal responsibility towards him or herself and the rest of the group, because individual performance will affect not only one's own result, but also the results of their team members.



3. Promotive interaction

Cooperative Learning implies face-to-face interaction. Pupils need not only to discuss and agree but also to produce a piece of work through combined effort, because Cooperative Learning is not about working individually to make a 'cut-and-paste' final product.

4. Social abilities

Pupils need interpersonal skills to be successful. Some of them are:

- effective leadership
- decision-making
- communication
- conflict resolution
- helping and asking for help
- organisation
- self-esteem
- self-confidence.

Pupils are not born knowing how to behave in a group. We have to teach them, giving them models, and opportunities to practise these skills.

5. Group processing

Developing Cooperative Learning methodology is not easy at first, nor are the effects immediate. Difficulties within the groups, with resources and with management may arise. That is why formative assessment is needed. This assessment involves both teachers and pupils. We need to know the strong and weak points in order to make the right decisions and develop the methodology in the right direction.

Cooperative Learning structures in *Natural Science 2 Learn Together*

The *Work together* section of the *ByME Natural Science 2 Learn Together* is designed to develop pupils' Cooperative Learning skills through the use of two different types of techniques: *Think-Pair-Share* and *Cooperative investigation*.

These techniques are presented to the pupils in the opening unit with a brief explanation. Here's all you need to know about them!

Think-Pair-Share

Pupils are presented with a problem.

First, they work on their own and reflect on the problem that has been posed. Make sure that they all try to establish their own ideas on the matter.

Secondly, pupils get together with a partner and work in pairs. Pupils are required to reach agreements with their partners after discussing their opinions.

And finally, the two pairs get together and work as a group to create the final task by bringing together the conclusions and ideas of both pairs.


Work together

Discover how our teeth and stomach work

Do you know how our teeth and stomach break down food?

Materials:

1 Work on your own.

How can we represent teeth and a stomach? Match to make sentences.

a To show the action of our teeth, …
b To show the action of our stomach, …
1 … we can use vinegar.
2 … we can crush the sweets.

2 Work with a partner.

Compare you answers with a partner. Do you agree? Your teacher will give you vinegar and water. With your partner, fill two glass jars. Label them *vinegar* or *water*. Crush one sweet.

3 Work in a group.

Put one whole sweet in water, and one in vinegar. Put one crushed sweet in water, and one in vinegar.

Record your results. Put a tick or a cross.

- The whole sweets dissolve faster.
- The crushed sweet in vinegar dissolves faster.
- The crushed sweet in water dissolves faster.

Evaluate your cooperative learning.

twenty-three 23

Cooperative investigation

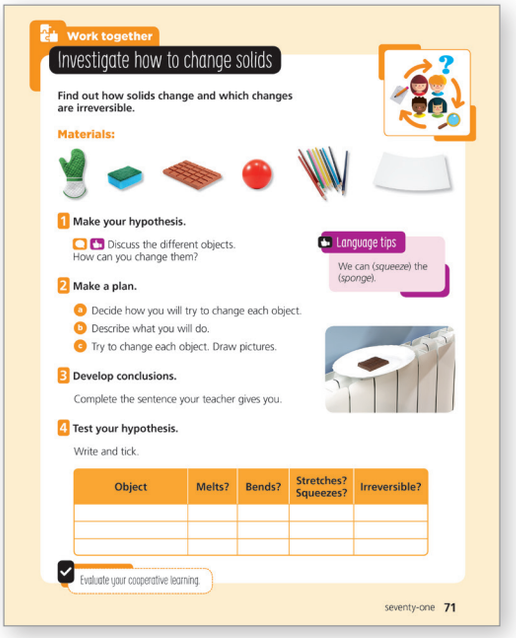
Already in groups of four, pupils are presented with a problem or question before carrying out an experiment.

First, the group needs to think about the problem or question and create a hypothesis before carrying out the experiment.

Secondly, all the members of the group plan how they are are going to carry out the experiment.

Next, they proceed with the experiment following all the required steps and develop conclusions.

Finally, the group compares the original hypothesis with the conclusions developed after the experiment.


Work together

Investigate how to change solids

Find out how solids change and which changes are irreversible.

Materials:

1 Make your hypothesis.

Discuss the different objects. How can you change them?

Language tips

We can (*squeeze*) the (*sponge*).

2 Make a plan.

a Decide how you will try to change each object.
b Describe what you will do.
c Try to change each object. Draw pictures.

3 Develop conclusions.

Complete the sentence your teacher gives you.

4 Test your hypothesis.

Write and tick.

Object	Melts?	Bends?	Stretches? Squeezes?	Irreversible?

Evaluate your cooperative learning.

seventy-one 71

PROJECT BASED LEARNING

The Buck Institute for Education (BIE) defines Project Based Learning (PBL) as 'an extended process of enquiry' where 'students work on a project over an extended period of time that engages them in solving a real-world problem or answering a complex question. As a result, students develop deep content knowledge as well as critical thinking, creativity and communication skills in the context of doing an authentic, meaningful project.'

ByME Natural Science Learn Together projects are clearly organised to help pupils make a successful start in Project Based Learning. Each project relates to what the pupils have learned in the preceding units and the theme running through all the projects is to make the world a better place.

CHALLENGE

Every project begins with a challenging problem or driving question. The problem or question sparks the pupils' interest and motivates them to want to find the solution. In some cases pupils are asked to choose from a range of possible options to carry out the project, such as choosing a song that will be used to create a dance routine or a dish to create a healthy menu.

WHAT DO YOU KNOW?

These activities are meant to revise and activate the contents pupils have studied in the preceding units and that are related to the project. It is therefore a first chance to begin the enquiry process that will lead them to a satisfactory solution of the problem.

PROJECT **The exercise app**

A technology company has an app with exercise routines for adults. Now they want to create an exercise routine for children of your age. Can you help? The routine should exercise different parts of the body, and it should last about 10 minutes. Are you ready? Let's begin!

1 **Look and match.**

hip knee elbow ankle

2 **Write *biceps, triceps, elbow, neck, wrist* and *shoulder*.**

3 **Get into groups of four.**

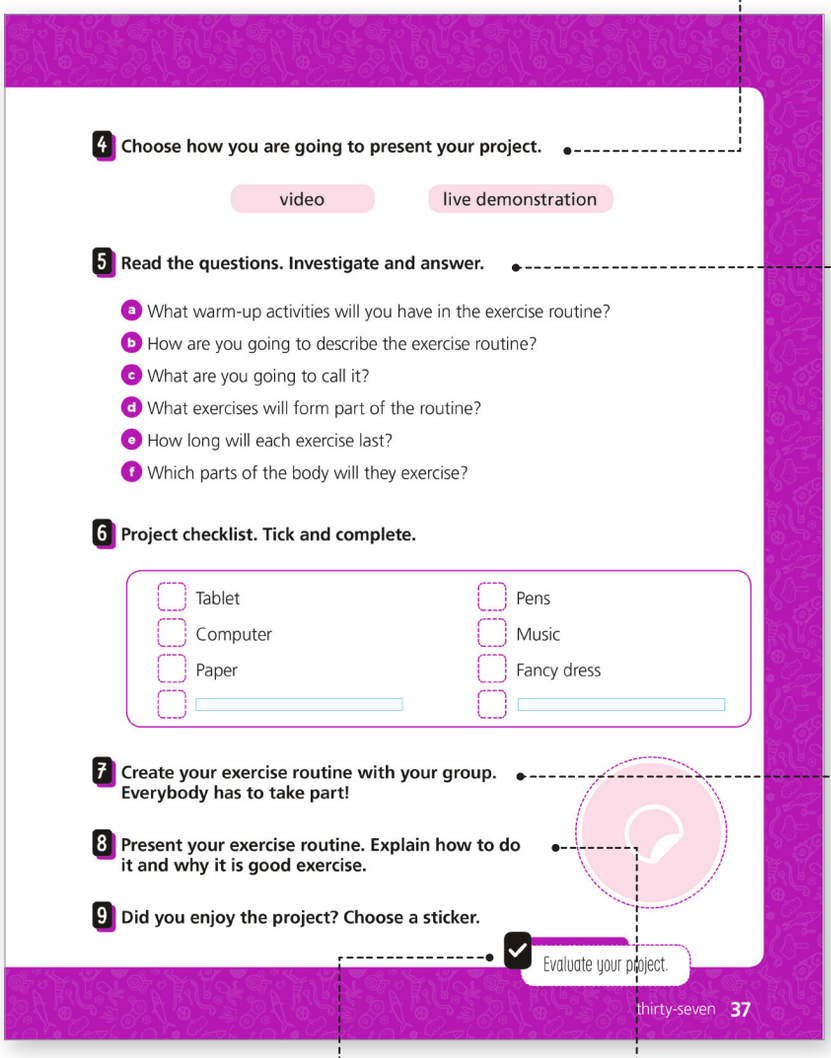
36 thirty-six

TEAM ORGANISATION

Cooperative work and each participant's role are key to their achieving the project. Before proceeding with the rest of the enquiry, pupils decide how they are going to organise themselves as a team. PBL applies Cooperative Learning techniques, therefore the team organisation is based on roles. Some of the proposed roles are coordinator, secretary, materials manager and spokesperson, but you may decide to introduce other roles.

PROJECT ORGANISATION

At this stage, pupils decide on the format of their project. They are given different options to choose from along with the materials required, however they are also free to choose their own format if they wish.



4 **Choose how you are going to present your project.**

video live demonstration

5 **Read the questions. Investigate and answer.**

a What warm-up activities will you have in the exercise routine?
b How are you going to describe the exercise routine?
c What are you going to call it?
d What exercises will form part of the routine?
e How long will each exercise last?
f Which parts of the body will they exercise?

6 **Project checklist. Tick and complete.**

Tablet
Computer
Paper
Pens
Music
Fancy dress

7 **Create your exercise routine with your group. Everybody has to take part!**

8 **Present your exercise routine. Explain how to do it and why it is good exercise.**

9 **Did you enjoy the project? Choose a sticker.**

Evaluate your project.

thirty-seven **37**

RESEARCH

Once pupils have decided how they are going to present their project, they undertake research to answer to a set of questions that will help them complete their project. In doing so, they will need to use various sources such as the Pupil's Book itself, the internet, books in the school library, magazines, visiting museums, or by asking the teacher or their parents.

CREATE

At this stage the team members will create their project or product. They have all the necessary information, they have discussed all their findings and they have agreed what they want it to be like, so there is no time to waste!

PROJECT EVALUATION

The pupils evaluate the development of the project, their own performance, as well as the performance of their teammates from a Cooperative Learning perspective.

PRESENT YOUR PROJECT

Pupils share their findings by presenting their project to the rest of the class, or if you choose, to the rest of the school. Remind the pupils that they should be ready to answer any questions at the end of their presentations!

ColorADD

Colour identification system

Colour-blindness, or colour vision deficiency, affects approximately one in every 12 men and one in every 200 women in the world – that is about 350 million people worldwide!

Colour-blindness is mostly an inherited condition that is transmitted through the X chromosome. It can cause social constraints and may lead to a reduction in the ability to learn and study independently.

The ColorADD Colour Identification System is based on three monochromatic symbols that represent the primary colours. By acquiring knowledge of 'Colour Addition Theory' during primary education, pupils can begin to interrelate and combine the symbols as a way of graphically identifying the entire colour palette. The addition of the black and white symbols is used to identify darker or lighter shades.

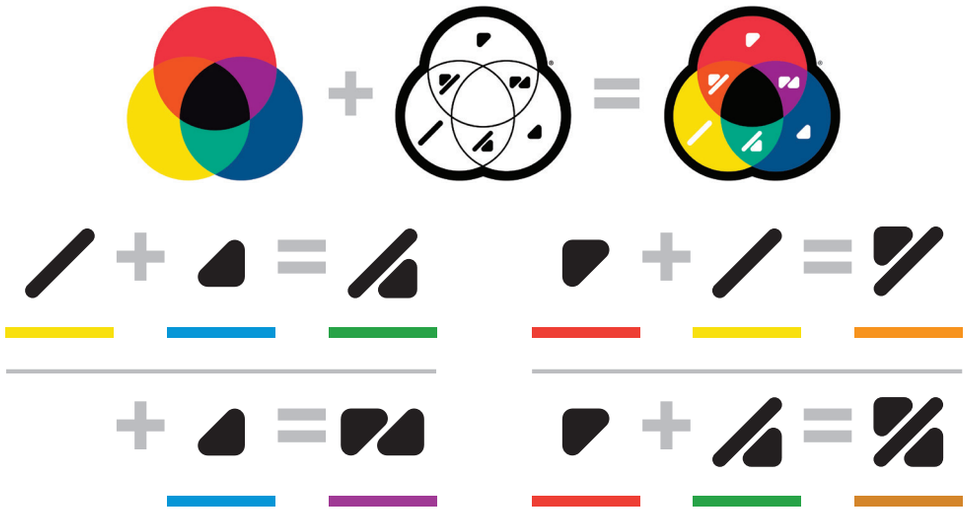
The ColorADD system is used throughout *ByME Natural Science Learn Together* as a way of allowing pupils with colour vision deficiency to participate as much as possible in all class activities. Where possible, ColorAdd symbols are applied to the illustrations and images that appear on the pages.

Using the ColorADD system becomes a 'mental game' that is easy to memorise both in class and in daily situations.

COLOUR IS FOR EVERYONE!

1. THE BASIS of ColorADD — PRIMARY COLOURS + BLACK AND WHITE

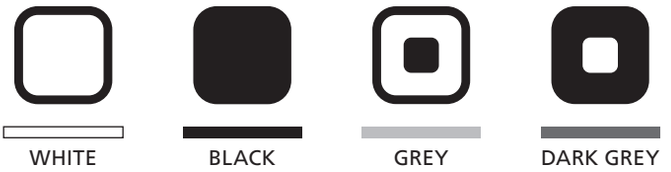
2. THE 'COLOUR ADDITION THEORY'



3. THE ColorADD CODE

Colours

White, black and grey tones



Metal tones

Light tones

Dark tones

The symbol for each colour to be used appears next to the relevant activity.

HELPFUL TIPS

Using flashcards

Flashcards are an important visual resource for introducing, learning and reviewing new vocabulary and concepts. They are particularly important for pupils learning content through a second language.

As well as the unit vocabulary flashcards, it is a good idea to continually build up your own personal collection of pictures and photos, which can easily be laminated on card, to have a greater range of visual aids.

Tap it: Divide the class into two teams. Stick four to six flashcards on the board in reach of the pupils. Call a pupil from each team to stand in front of the flashcards. Say the name of one of the cards. The first pupil to tap the correct card gets a point.

Pass the flashcard: Ask pupils to stand in a circle. Pupils pass the flashcards round the circle. As they pass a flashcard they must make a comment on the flashcard. Model the sentence starter, e.g. with food flashcards: *I like (name of the food)* or *I don't like (name of food)*; with animal flashcards: *It has got (name of a characteristic);* with objects: *It's made of (name of material).*

The activity is very good for drilling and repeating correct sentence structures and concepts. For example, a pupil takes a flashcard and passes it on to the next pupil on their right repeating the sentence starter you have provided e.g. *A banana is good for me*. The pupil then passes it onto the next who repeats the same sentence, etc. Meanwhile a new flashcard is passed to the first pupil. The flashcards should be passed round the circle and back to you.

Disappearing flashcards: Put the flashcards on the board in rows of three. Drill the names of each item. Turn over one of the flashcards so the pupils cannot see it. Drill the sequence again, including the card that has been turned over. Continue turning a flashcard over each time until the pupils can say the whole sequence from memory.

Memory: Stick six to eight flashcards on the board in two rows of three or four. Tell the pupils to look carefully at each flashcard. Then turn the flashcards over in the same order. Ask *Where is the …?* Invite a pupil to the board to choose a card. Have the pupil show the class the card. If the pupil chooses the correct card, turn it over in its place. If the pupil chooses the incorrect card, put it face down again in its place. Repeat for the rest of the cards.

Pick 'em up: Place all the flashcards on the floor. Name three in quick succession, e.g. *Watermelon, fish, chocolate!* A pupil has to pick up the flashcards that you said and place them in the correct order along the bottom of the board. When you have played with two or three different combinations, choose a volunteer to name three items while another picks them up.

Odd-one-out: Stick some flashcards on the board (two or three that belong to the same group and one that is different). Ask which is the odd-one-out and why.

Guess which one: Stick flashcards up on the board. Choose one and describe it. The pupils guess which one it is.

Guessing game: Put the flashcards in a pile one by one, naming them as you do so. Shuffle the pack and

turn it to face you. Give the pupils three clues about the object and encourage them to guess the flashcard.

Quick flash: Place a group of flashcards in a pile facing you. Quickly, turn one flashcard around to face the pupils, then turn it back. The pupils identify the flashcard they saw.

Slow reveal: Cover the flashcard with a sheet of paper. Slowly reveal the flashcard. Pupils raise their hands and identify the flashcard.

Hole in the card: Cut a small hole in the centre of an A5 piece of card. Cover a flashcard and show the class. Ask them if they are good detectives and can guess the picture from the small detail. Repeat with the other flashcards.

What's missing?: Stick six to eight flashcards on the board one by one, naming them as you do so. Then take all the flashcards down and mix them up. Ask a volunteer to come up to the front and choose one (without showing it to anyone). Place the remaining flashcards on the board again, encouraging the pupils to name them. Ask the pupils: *What is missing?*

Oh no, it isn't!: Jumble up the flashcards and place them in front of you. Make false statements for each of the flashcards and have pupils correct you. Hold up a flashcard, e.g. a rabbit, and say: *This is a dog.* Encourage pupils to say: *No, it isn´t. It's a rabbit!*

Compare: Choose two flashcards on the board. Have pupils notice all the similarities and differences between the two.

Classifying: Distribute cards from a variety of units to individual pupils (or pairs). Write the name of the different classifications on the board and make columns (e.g. food, animals, machines, etc.). Invite the pupils to come to the board to stick their card in the correct column.

Classifying corners: Write the name of four classifications on paper and put them up in each corner of the classroom. Hand out flashcards and have pupils go and stand in the correct corner.

GAMES

Pupils learn in many different ways. The more experiences pupils can have around a new topic, the more likely they will learn and remember concepts and vocabulary. Games offer a wide range of opportunities for pupils to engage with and use what they are learning. They are also a chance to offer movement, a change of focus and disguised language learning. The competitive element inspires pupils to participate and what could easily be an uninspiring list of revision questions or words to define can be transformed into a fun game.

General games

Clever chameleon says: Pupils must carry out an action only when Clever chameleon says so. *Clever chameleon says clap your hands,* etc.

I Spy: Use the classroom, the playground, a poster or the opening illustration for a unit to say: *I spy with my little eye something beginning with (/k/).* Pupils suggest words beginning with that sound or letter to guess your word. Vary the game by saying instead *I smell with my little nose …* when reviewing food vocabulary.

Pass the ball: A soft ball is best. The activity encourages turn taking and gives everybody a go at speaking. As pupils pass the ball they must say a word or a statement, depending on what you would like the pupils to practise e.g. *My name is … I can … Everyday I … My favourite animal / food is …*

Balloon: Divide the class into two groups and have pupils make two circles. Give each circle a balloon. Pupils must try to keep the balloon in the air by touching it and saying a word in a lexical set you suggest e.g. *food, animals, machines* etc. If a pupil touches the balloon without saying a word or the balloon touches the ground before a pupil touches it, that pupil must sit out.

Guess what's in the bag: Use a feely bag to put things inside for pupils to feel and guess, or feel and describe for others to guess.

Picture dictionary: Divide the class into two teams. Start to draw an item on the board very slowly. In turns, teams have 30 seconds to guess what you are drawing. You'll need a timer! Once pupils are familiar with the game, they can play in threes. One pupil begins to draw an item from the unit or the picture dictionary. The other two pupils in the group must guess what it is. The first to guess, becomes the drawer.

Picture snap: Pupils draw one item from the unit e.g. something they have for breakfast, their favourite animal, a machine in their kitchen. Pupils must keep their picture a secret and must not show others. Provide pupils with the sentence starter you would like them to use e.g. *For breakfast I have …; My favourite animal is …; In my kitchen there's a …* Pupils must walk around the classroom repeating their sentence to as many classmates as possible. If they hear somebody say the same item as them, they must shout *Snap!* and show each other their picture. Check at the end how many pupils had the same item as somebody else.

Chain repeating: This game is based on the traditional game: *I went to the market and bought …*

Begin a sentence, e.g. *At the park, I can see …* and add an animal, e.g. *At the park I can see a snake.* The next pupil must repeat your sentence and add another animal, e.g. *At the park I can see a snake and a parrot.* The game continues until someone makes a mistake or forgets an item.

Stand up if: Pupils listen to the statements you make. If they think your statement is true, they stand up. If they think it is false, they remain seated. Between statements, pupils sit down. The game can also be played with flashcards. Hold up a flashcard and make a true-or-false statement about what is on the flashcard. Pupils stand up if it is true.

Stand up if it's true for you: Pupils listen to your statement and stand up if it is true for them personally e.g. *I have long hair. I have a goldfish. I eat toast for breakfast.*

Repeat if true: Pupils listen to your statements. If they think your statement is true, they repeat it. If they think it is false, they shake their heads and remain silent.

Chinese whispers: Have pupils stand one behind the other, in three lines of equal numbers. Whisper a sentence to the pupil at the end of each line at the same time. They must whisper the sentence to the next person in their line, who whispers it to the next until it is passed down all the way to the first person in the line. The pupil at the front of the line puts up their hand when they think they know the sentence, or runs and circles a flashcard or wordcard on the board.

Backs to the board: Divide the class into two teams. Place two chairs at the front of the class, each chair facing a team. Ask one pupil from each team to come and sit on the chair, facing their team but with their backs to the board. Write a word or put up a flashcard on the board behind the pupil's backs and insist that they do not turn around (ensure that the class understand the word you have written). Encourage the teams to mime the word on the board to their team member who must guess what it is. The team member who guesses first gains a point for their team. Two new team members then come to the chairs.

Noughts and crosses: Draw a noughts and crosses grid on the board and write numbers in each square. Divide the class into two teams and choose one team to be *noughts* and one team to be *crosses*. For each number prepare a question or a true-or-false statement. Each team takes turns to choose a number. If they answer your question correctly, a team member can come up to the board and replace the number with a nought or a cross. The winning team is the first to get three noughts (or crosses) in a line.

Bingo: Pupils fold an A5 sheet of paper in half, in half again, and in half one more time. When they open the paper up, they should have a grid with eight squares.

Pupils draw (or write) eight items from your lesson (food, animals, machines, etc.). Draw a grid with eight squares on the board. Draw items one at a time in your grid. If pupils have that same item in their grid, they can cross it out. When a pupil has crossed all the items out in their grid that are the same as yours, they can shout *Bingo!* Use the other side of the paper to start a new game.

Games with movement

Glue stick: Pupils play with a partner or in threes. Pupils listen to your instruction and then 'stick' the body part you say to their partner's by holding them together, e.g. hand to hand, leg to leg, ear to ear, finger to finger, etc.

Mirror mirror: Two pupils stand opposite each other. They take turns to be the leader and do movements

and facial expressions that their partner, the *mirror*, must copy.

Listen and do: Pupils listen carefully to two instructions at the same time e.g. *Wiggle your hips and make an angry face. Touch something made of wood with your elbow and scratch your head.* When pupils get good at remembering and following two instructions at a time, increase it to three.

Run to the corners: This is best played in the playground or gym. Label the corners of the space you are in with different categories. Organise pupils into groups. Give names to the different groups (animal names, days of the week, food names). Call out the group name and a vocabulary item. The group must run to the correct corner.

Mime it: Encourage pupils to use mime to accompany new expressions and vocabulary.

Follow my leader: Pupils stand in a line one behind the other. Stand at the front and have pupils follow you and copy your movements e.g. *Walk and wiggle your hips*. After a minute, go to the end of the line and tell the pupil now at the front to walk and mime an action for the rest of the line to copy. Clap hands to change leader. You could have two lines walking and miming at the same time.

Games for developing spelling

Letter body shapes: Call out a letter of the alphabet, have pupils make that letter shape with their bodies.

Plasticine and pipe cleaners: Pupils use these materials to form the letters you dictate. Review vocabulary from a lesson by asking pupils to make the first letter.

Names: Pupils stand up if their name begins with the letter of the alphabet you say. Ask the pupils who stand up what their name is.

Get in order: Help pupils stand in line in the alphabetical order of their names. Alternatively, give pupils a wordcard and help them stand in the alphabetical order according to the first letter of the word. It helps pupils at this age to have a visual alphabet somewhere in the classroom they can refer to or write the alphabet on the board.

A–Z: Write the letters of the alphabet on the board with the pupils' help. In groups of three ask pupils to think of a food item / animal / something in an illustration beginning with each letter of the alphabet. When ideas are drying up, elicit groups' suggestions and write and draw the word next to each letter.

Vocabulary bee (Hangman): Instead of a hanging man, draw a bee. Draw spaces for the letters of a word you want pupils to guess. If pupils guess a letter in the word correctly, write it in the correct space. If the letter does not appear in the word, write it to the side of the bee and put a strike through it, and draw a body part of the bee, e.g. body, head, wing, leg, antenna. Pupils must guess the word before the bee is completely finished.

Colour it: Pupils write new vocabulary in their notebooks in different sizes and different colours. Encourage them to draw small pictures to accompany the words, or draw a picture and then label it.

Guess the word: Begin to write up a word from the day's class slowly, one letter at a time. Ask pupils to guess the word you are spelling before you finish writing it and help you complete the spelling.

Scrabble: Have sets of plastic alphabet letters, scrabble letters and / or letter sets cut up on card. Divide the class into small groups. Give each group a set of letters. The groups spell the word you tell them.

Ready, steady, spell: Mini-whiteboards are a great learning aid! Say a word and have pupils spell it on their mini-whiteboard and hold it up to show you. The boards also provide an easy opportunity for pupils to practise spelling a word before writing it in their books.

Let's spell: Make sure pupils are familiar with the vowels *a, e, i, o, u.* Write vocabulary items from the lesson on the board but with the vowels missing , e.g. *_ ppl_*. Pupils write the complete word with a partner on a mini-whiteboard or in their notebooks. Encourage them to use colours for the vowels.

WELCOME LETTER HOME

Dear Parent / Carer,

This year, your child will be learning about Natural Science in English, developing an understanding of the world beyond their immediate experiences, including the human body, animals and plants. These scientific concepts will be explored using new vocabulary and grammatical structures. This is the second level in a six-level course designed for pupils at primary level.

Learning about Natural Science is beneficial for children because it answers a lot of the questions they have about the natural world around them. Learning about Natural Science is practical and relevant, so children embrace it without even thinking about it. This course aims to provide your child with opportunities to explore and discuss concepts relating to the human body, animals, plants, materials and machines while strengthening and building upon their English vocabulary and grammar.

In level 2, your child will further their understanding of the human body, including different body parts and the concepts of joints, bones, muscles and the senses. Your child will also understand how they can develop healthy habits, such as exercise, personal hygiene, personal care and safety around machines. Your child will learn more about the features, habitat and movement of animals and study the parts, uses and types of plants. Your child will also learn about materials, including their properties, reversible and irreversible changes and how to make things move. Your child will understand the uses of tools and machines and how they work.

Opportunities to integrate new structures and vocabulary will be present throughout this course. Your child will be able to put this new language into use when carrying out the group projects in each unit, developing communication and listening skills, as well as patience and problem-solving skills.

You and your child will find value in the lessons learned in this course. Understanding the importance of healthy living, respect towards other people and living things, and taking care of the environment are values which your child will be able to apply throughout their life, all the while establishing a higher comfort level of spoken English.

Thank you in advance for your support and collaboration. Here's to a great year of growth and learning!

Best wishes,

Science teacher

DISCOVER ANIMALS

Unit 3

DISCOVER ANIMALS

CONTENTS	EVALUATION CRITERIA Pupils will be able to:	
Animal kingdom (vertebrates): characteristics and classification	Explain the characteristics of the different groups of vertebrate animals.	
Animal kingdom (invertebrates): characteristics and classification	Describe the characteristics of some invertebrate animals.	
Animal kingdom: nutrition	Classify animals according to what they eat.	

OPENING PAGES

Song: *The animal kingdom*

STORY

Living and non-living things

WORK TOGETHER

Make a model of an arthropod

CONTENT PAGES

Vertebrates and invertebrates
Herbivores, carnivores and omnivores
Mammals
Birds
Reptiles and amphibians
Fish
Arthropods and molluscs

OUR CHOICES

Help the planet: be a scientist!

REVIEW

UNIT SUMMARY

In this unit pupils will learn:

- to classify animals as vertebrates or invertebrates
- to identify herbivores, carnivores and omnivores
- to recognise the different classes of animals
- to distinguish between different types of vertebrates and invertebrates
- how scientists work

LANGUAGE FOCUS

- Types of animal: vertebrate, invertebrate, carnivore, herbivore, omnivore, oviparous, viviparous
- Animal classification: mammal, bird, fish, reptile, amphibian, arthropod, mollusc
- Features: fur, feathers, wings, tail, beak, scales, gills, moist / dry skin, fins, segmented body, exoskeleton, shell, tentacles, hair, skin, teeth, joints, limbs, backbone, antennae
- Nutrition: worms, insects, fish, nuts, seeds, berries, small animals, plankton, water plants

KEY STRUCTURES

- My favourite food is ... I don't like to eat ...
- It can (hurt) them.
- I'm a ...
- It is a(n) ….
- It lays eggs. It lives on land / in water
- It has … / They have …
- They eat / They breathe with …
- Let's draw a (pig). A (pig) is (an omnivore).

LEARNING STANDARDS Pupils are able to:	KEY COMPETENCES						
	LIN	MST	DIG	LTL	SOC	AUT	CUL
Name and identify vertebrate animals and classify them.	●	●					
Recognise different parts of animals' bodies and how they breathe.	●	●					
Name and identify different invertebrate animals and classify them.	●	●					
Identify parts of animals' bodies and how they breathe.	●	●					
Group animals according to what they eat.	●	●					

LIN Competence in linguistic communication
MST Competence in mathematics, science and technology
DIG Competence in the use of new technologies
LTL Competence in learning to learn
SOC Competence in social awareness and citizenship
AUT Competence in autonomous learning and personal initiative
CUL Competence in artistic and cultural awareness

DIGITAL RESOURCES

PUPIL'S IWB

LEARNING KIT

- Interactive activities
- Flashcards
- Presentation
- Song
- Multimedia

TEACHER'S KIT

- Test generator
- Wordlist
- Worksheets and templates
- Lyrics
- Multimedia
- 360° evaluation tests

FAMILY CORNER

- Presentations
- Wordlist
- Family guide

UNIT TRACK LIST

- 1.42 Page 39, Activity 4 (*The animal kingdom* song)
- 1.43 Page 39, Activity 5 (*The animal kingdom* song)
- 1.44 Page 40, Story (*Living and non-living things*)
- 1.45 Page 40, Activity 1
- 1.46 Page 42, Vertebrates and invertebrates
- 1.47 Page 42, Activity 2
- 1.48 Page 43, Herbivores, carnivores and omnivores
- 1.49 Page 44, Mammals
- 1.50 Page 44, Activity 1
- 1.51 Page 45, Birds
- 1.52 Page 45, Activity 1
- 1.53 Page 46, Reptiles and amphibians
- 1.54 Page 46, Activity 1
- 1.55 Page 46, Activity 2 (*What am I?* chant)
- 1.56 Page 47, Fish
- 1.57 Page 47, Activity 2
- 1.58 Page 48, Arthropods and molluscs
- 1.59 Page 49, Activity 1
- 1.60 Page 51, Activity 3

38 UNIT INTRODUCTION

SUMMARY

The aim of the unit opener is to activate pupils' prior knowledge of the topic of the unit and stimulate their curiosity for what they are about to learn through activities that develop observation and reasoning skills. Use the picture to activate vocabulary related to animals and nature.

LANGUAGE

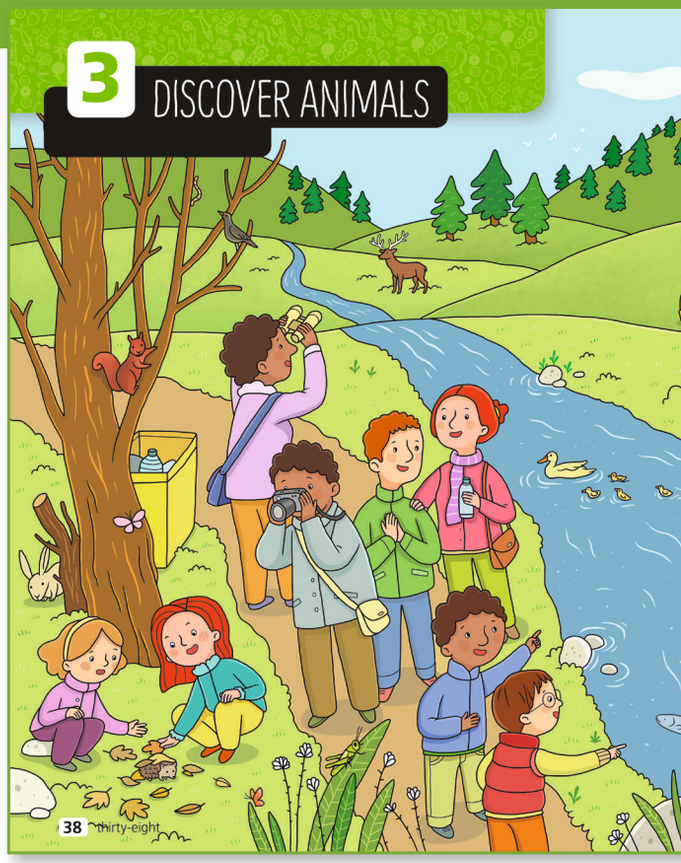
- Rabbit, deer, fox, hedgehog, squirrel, horse, blackbird, duck, duckling, kingfisher, heron, frog, lizard, fish, ant, dragonfly, grasshopper, butterfly, snail, caterpillar
- It can (hurt) them. Can it (fly)?

MATERIALS

Flashcards: bee, bird, butterfly, crocodile, duck, fish, fox, frog, penguin, rabbit, shark, snail, snake, squirrel, turtle.

1.42 Activity 4 (*The animal kingdom* song)

1.43 Activity 5 (*The animal kingdom* song)



GETTING STARTED

A-Z of Animals. Elicit the alphabet and write it on the board. Ask pupils to work in threes and think of an animal for every letter of the alphabet. Set a time limit and when time is up, encourage groups to take turns to name an animal for the different letters of the alphabet. Write the animal on the board next to the correct letter. *(Ant, bat, cat, etc.)*

STEP BY STEP PAGES 38–39

- Tell pupils to point to Ben and Katie. Ask: *Where are they? (In the countryside / Next to a river) What are they doing? (Ben is pointing at the ducks and Katie is looking at a hedgehog.)* Ask the class what animals they can see and write the names on the board. Then ask them to identify anything that is neither a plant nor an animal.
- Play 'What's missing'. Ask pupils to look carefully at the list of animals on the board. Then ask one pupil to leave the classroom for a few minutes. While the pupil is not in the class, rub out one of the animals. The pupil must try to identify which animal is missing. Repeat with other pupils.
- Talk with the pupils about their own visits to the countryside and ask them which other animals they could expect to see.

Activity 1

Write: *Living things* on the left-hand side of the board and *Non-living things* on the right-hand side. Ask pupils if they remember the differences between the two. *(Living things need water and food. They are alive. They grow and reproduce. Non-living things don't.)*

Activity 2

Ask: *Is a horse the same as a duck? (No)* Encourage pupils to say why not. Review animal groups by encouraging pupils to tell you that a horse is a mammal and a duck is a bird. Ask: *What types of animals are there? Write mammals and birds* on the board and elicit insects, fish, amphibians and reptiles.

Activity 3

Tell the class to point to the different animals. Point and ask: *Are Katie and her friend touching the hedgehog? Why not? Are any of the other children touching the animals?* Point out the importance of not disturbing wild animals. Ask pupils what might happen to the animals or the pupils themselves if they disturb animals. Discuss the ways the children in the picture

39

1.42 **THE ANIMAL KINGDOM**

Some living things can fly, *[mime flying]*
Yes they can, yes they can, *[nod your head]*
A dragonfly and a bird can fly, *[mime flying]*
Yes they can! *[nod your head]*
Some living things can swim, *[mime swimming]*
Yes they can, yes they can, *[nod your head]*
A duck and a fish can swim, *[mime swimming]*
Yes they can! *[nod your head]*
Some living things can run, *[mime running]*
Yes they can, yes they can, *[nod your head]*
A fox and a deer can run, *[mime running]*
Yes they can! *[nod your head]*
Some living things can jump, *[mime jumping]*
Yes they can, yes they can, *[nod your head]*
A grasshopper and a frog can jump, *[mime jumping]*
Yes they can! *[nod your head]*
Some living things can crawl, *[mime crawling]*
Yes they can, yes they can, *[nod your head]*
An ant and a snail can crawl, *[mime crawling]*
Yes they can! *[nod your head]*

are enjoying the animals without touching them. Focus on the Language tips box to help pupils answer.

Activity 4 **1.42**

Point to the photo of the dragonfly and ask: *What type of animal is a dragonfly? Can it swim / fly / jump / run / crawl?* Demonstrate the actions. Repeat for all the photos.

Activity 5 **1.43**

Encourage pupils to stand up and do the actions as they listen.

TARGETED QUESTIONS

⊙ **What can you see in the countryside?** Pupils point to animals and things in the picture of the countryside and name them.

⊙⊙ **What animal in the picture isn't wild?** Pupils identify the horses in the picture.

⊙⊙⊙ **What should we do with our rubbish in the countryside?** Pupils suggest ways of disposing rubbish, e.g. put it in bins or in your bag and take it home.

⊙⊙⊙⊙ **How can we look after wild animals?** Pupils suggest ways of treating wild animals and protecting them.

- Provide time and support so that the pupils can express themselves.
- Review any new vocabulary.

WRAP IT UP

Show pupils the flashcards for different animals and elicit the type of animals they are. Write: *mammals, birds, insects, fish, amphibians* and *reptiles* on the board and play a team game with a member of each team taking turns to put the flashcard in the correct column.

FAST FINISHERS

Fast finishers choose one class of animals and list as many animals in that group as they can.

360° EVALUATION

Download, print and distribute the Diagnostic test and Self-evaluation for the pupils to complete.

40 STORY

SUMMARY

The story sets the scene for the unit and introduces some key vocabulary and concepts. In the story, Katie and Ben are doing an art project.

LANGUAGE

- Living things: heron, ducks, ducklings, horse, fish, plants, trees, rabbit
- Non-living things: tractor, boat, car, road, rock
- Reproduce

MATERIALS

Flashcards: bird, butterfly, cat, duck, fish, grass, squirrel, stone, tree.
Additional pictures of living and non-living things: car, book, table, etc.

1.44 Story *(Living and non-living things)*. Script, page 220

1.45 Activity 1. Script, page 221

GETTING STARTED

Play 'Odd one out' with flashcards or other pictures. Hold up the picture side of the flashcards: stone, grass, tree, duck, to practise identifying living and non-living things. They can also be used to revise the types of animals or to differentiate between plants and animals.

STEP BY STEP PAGE 40

Living and non-living things 1.44

- Ask questions about the story: *What are Ben and Katie going to do? What things are they going to paint? What's the difference between Katie and Ben's paintings?*
- Play the audio and listen to the story. Encourage pupils to follow by pointing to the person speaking in each case.
- Then ask: *What did Katie paint? Is it a living or non-living thing? What other living things can she paint?* Repeat with Ben's painting. Ask: *Why is the teacher happy with Katie and Ben's pictures?*

Activity 1 1.45

Say: *Explain how living and non-living things are different*. Focus on the first picture and read *All living things reproduce.* Ask pupils: *Is this true?* Repeat for the other pictures. Pupils tick the correct boxes, then listen to check their answers.

WRAP IT UP

- Play an alphabet game. Call out a letter of the alphabet and pupils name one living thing and one non-living thing that begins with that letter.
- Take the class to the playground. Tell pupils to choose a living or a non-living thing to draw.

FAST FINISHERS

Fast finishers can draw a countryside scene. They circle the living things in blue and the non-living things in red.

WORK TOGETHER 41


Work together

Make a model of an arthropod

Find out about grasshoppers and make a model to show their body parts.

Materials:

1 Work on your own.

Label the grasshopper on your template.

2 Work with a partner.

Your teacher will assign you two or three body parts. Make your parts from plasticine.

3 Work in a group.

Join all the parts together. Make labels. Label the body parts.

What are the differences between grasshoppers and spiders?

Language tips

Grasshoppers have … legs.

Spiders have … / Spiders don't have …

Evaluate your cooperative learning.

forty-one 41

SUMMARY

Pupils will use the *Think-Pair-Share* technique to help them develop their team-working and collaboration skills. First, the pupils will work on their own to answer a question or develop ideas. Next, they will work with a partner to complete the next step in the sequence. Finally, the pupils will work in a group to finalise the activity.

LANGUAGE

- Arthropod, grasshopper, spider
- Legs, head, body, wings, antennae
- Grasshoppers / Spiders have / don't have …

MATERIALS

Flashcard: grasshopper.
Plasticine, modelling tools, toothpicks, sticky labels, pencil, grasshopper template.

GETTING STARTED

Play a game of 'What am I thinking of?'. Tell pupils you are thinking of something in the picture on pages 38–39 and they have to ask you questions to find out what it is. The person who guesses correctly chooses the next item in the picture.

STEP BY STEP PAGE 41

- **Step 1:** Show the class the flashcard of a grasshopper. Ask: *What is this?* Point to the different parts of the grasshopper and ask pupils to name the different body parts. Write the words on the board. Hand out the templates for pupils to complete individually.
- **Step 2:** Pupils compare their answers to activity 1 in pairs. Give alternate pairs the names of two or three body parts. Find out how many of each body part the grasshopper has by asking: *How many (legs) does a grasshopper have?* Working together they make the relevant parts. Make sure when they are going to join another pair that they have all five parts between them.
- **Step 3:** Read the instructions with the pupils and check any problems. Each pair joins another pair that has the body parts they don't have. In groups of four they complete the model. Ask pupils to call out the body parts of a spider. As they name a part, draw it on the board. Refer the pupils to the Language tips box and encourage them to use complete sentences.

WRAP IT UP

- Pupils display their grasshoppers.
- Individually, pupils write some true and false sentences about grasshoppers and spiders. In pairs, they read each other their sentences for their partner to say true or false and correct the false sentences.

360° EVALUATION

Download, print and distribute the Cooperative learning evaluation for the pupils to complete.

42 VERTEBRATES AND INVERTEBRATES

SUMMARY

In this lesson, pupils will learn to distinguish between animals which have a skeleton (vetebrates) and animals which don't (invertebrates) and also classify animals according to these descriptions.

LANGUAGE

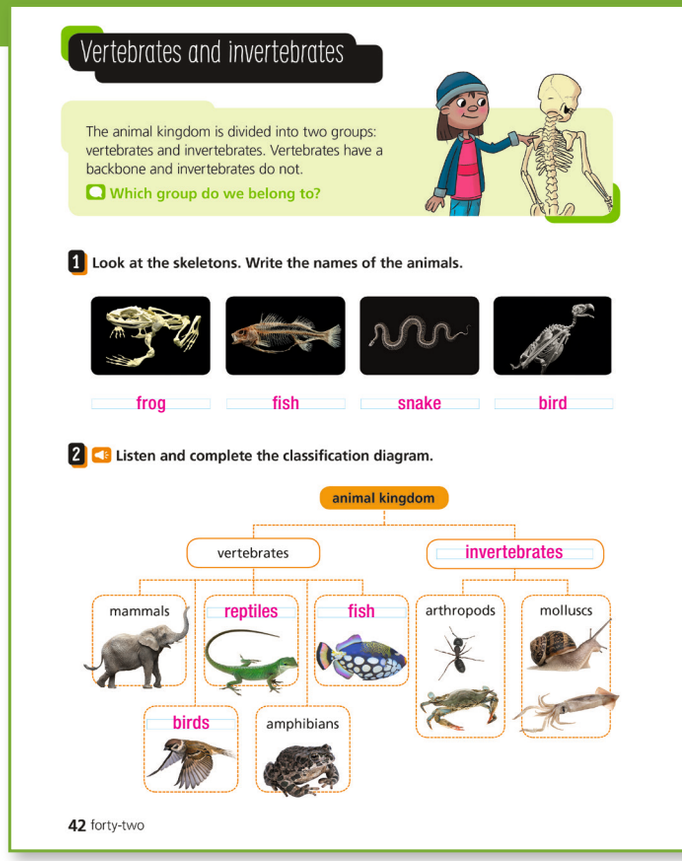
- Vertebrates, invertebrates, skeleton, backbone
- Mammals, birds, fish, reptiles, amphibians, arthropods, molluscs
- Is it a vertebrate or an invertebrate?

MATERIALS

Flashcards: skeleton.

1.46 Vertebrates and invertebrates

1.47 Activity 2. Script, page 221


Vertebrates and invertebrates

The animal kingdom is divided into two groups: vertebrates and invertebrates. Vertebrates have a backbone and invertebrates do not.

Which group do we belong to?

1 Look at the skeletons. Write the names of the animals.

frog fish snake bird

2 Listen and complete the classification diagram.

animal kingdom
vertebrates
invertebrates
mammals
reptiles
fish
arthropods
molluscs
birds
amphibians

42 forty-two

GETTING STARTED

Play 'Vocabulary bee' with the words *vertebrate, invertebrate* and *skeleton.* Write a line for each letter on the board and pupils guess the letters to complete the word. For each incorrect guess, draw a part of the bee (body, head, each wing, legs and antenna). If the pupils guess the word before the picture is complete, give a point for the answer.

STEP BY STEP PAGE 42

Ask: *Do invertebrates or vertebrates have a skeleton?* Show the flashcard of the skeleton and elicit whether humans are vertebrates or invertebrates. Explain that all animals are either vertebrates or invertebrates. Focus on the picture and ask: *What is Laura pointing to? (The backbone)*

Activity 1

Ask pupils to look at the first X-ray and tell you which animal they can see. Elicit which bones they can see in the X-ray. Repeat with the other X-rays.

Activity 2 1.47

- Focus pupils' attention on the diagram and ask pupils to name the animals they see. Ask questions about each animal, e.g. *What type of animal is (an elephant)? Is (a fish) a mammal? Is (an ant) a vertebrate or an invertebrate?* Then ask pupils what the name of the diagram is and to say how many groups there are. Elicit from the class why they think there are two classifications.
- Play the first part of the audio. Ask pupils what word goes in the first gap. Pupils complete the first gap. Continue with the rest of the listening.

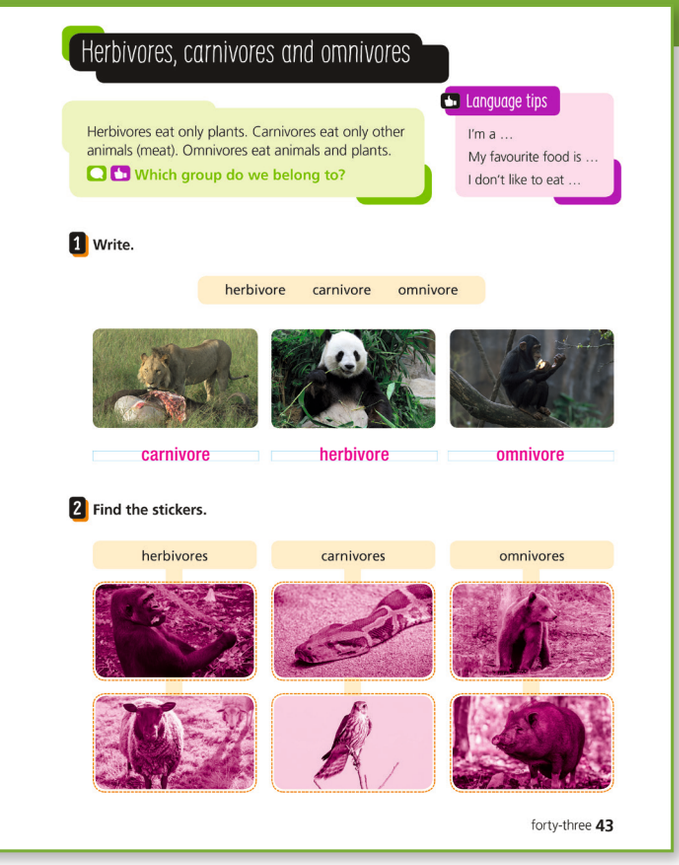
WRAP IT UP

Say: *Name some animals that are vertebrates.* Write the names on the board. Then ask pupils to tell you which of the five groups each animal belongs to. Repeat with invertebrates.

FAST FINISHERS

Fast finishers can make their own diagram using different examples of animals.

HERBIVORES, CARNIVORES AND OMNIVORES 43


Herbivores, carnivores and omnivores

Herbivores eat only plants. Carnivores eat only other animals (meat). Omnivores eat animals and plants.
Which group do we belong to?

Language tips
I'm a …
My favourite food is …
I don't like to eat …

1 Write.

herbivore carnivore omnivore

carnivore herbivore omnivore

2 Find the stickers.

herbivores carnivores omnivores

forty-three 43

SUMMARY

Pupils learn about what animals eat and how to classify animals according to their diet.

LANGUAGE

- Herbivore, carnivore, omnivore
- Lion, panda, chimpanzee, gorilla, snake, bear, sheep, falcon, wild boar

MATERIALS

Flashcards: carrots, fruit, grapes, sausages, vegetables.
Poster: Animals.
Magazines with pictures of animals to cut out.

1.48 Herbivores, carnivores and omnivores

GETTING STARTED

Show the class the Animals poster. Cover some of the words with a piece of card and ask pupils to identify which words are missing. Give them a point for each correct answer. Give them two points for each word that they can correctly spell.

STEP BY STEP PAGE 43

- Write: *herbivore, carnivore* and *omnivore* on the board. Check if pupils can tell you what the words mean. Help pupils by explaining the meaning if necessary. Show pupils flashcards of food items: carrots, sausages, grapes, fruit, vegetables and other pictures of food. Ask if they eat these things and if they are plants or from animals.
- Listen to and read the text. Focus on the Language tips box and ask pupils to tell you about what they eat, what they like and don't like to eat.

Activity 1

- Point to the lion and ask: *What is the lion eating? (Meat)* Ask pupils if they can tell you the difference between what the lion is eating and what the panda is eating.
- Ask: *Is a (lion) a herbivore or carnivore?* Ask similar questions for panda and chimpanzee.

Activity 2

- Ask pupils to work in pairs and think of other animals that are herbivores, carnivores and ominvores. Write their ideas on the board.
- After pupils have found the stickers but before they put them in their book, ask: *What animal is this? What does it eat? Is it a herbivore, carnivore or omnivore?*

WRAP IT UP

- In groups, pupils make a poster with the title Carnivores, herbivores or omnivores and draw or cut out and stick pictures of animals from magazines on it.
- Ask pupils what two ways they can categorise animals.

FAST FINISHERS

Fast finishers can draw an animal eating food and write a sentence about it. (*A tiger is a carnivore.*)

44 MAMMALS

SUMMARY

Pupils will learn about the different features and behaviours that mammals have which distinguish them from other animal groups.

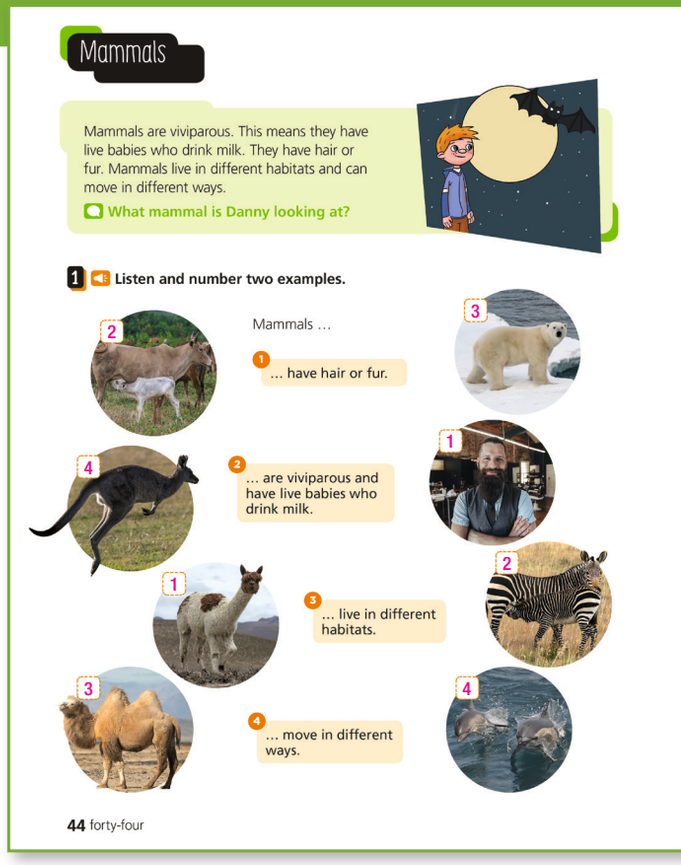
LANGUAGE

- Features: hair, fur, skin
- Mammals: cow, kangaroo, llama, camel, polar bear, human, zebra, dolphin
- Habitat, viviparous

MATERIALS

Poster: Animals.
Flashcard: fox.
Photos or pictures of other mammals.

1.49 Mammals
1.50 Activity 1. Script, page 221



GETTING STARTED

Write the word *viviparous* on the board and explain that this is the name we call animals that have live babies. Elicit the names of of some animals that have live babies. Say: *All mammals are viviparous but they also have differences.* Focus pupils' attention on the animals in the poster and ask them to tell you what differences they can see between the animals in the poster.

STEP BY STEP PAGE 44

Listen to and read the text. Point to the picture of Danny and ask: *What animal can you see? Why is it a mammal? Does it have fur? How does it move?*

Activity 1 1.50

- Focus on the photos and ask: *What do these animals have in common?* Elicit as many ideas as you can, helping with vocabulary. Ask pupils to name the animals and ask them questions about food, habitat, reproduction and movement.
- Play the audio and ask pupils to point to the animals they hear. Play the audio a second time, stop after the first description. Ask pupils which pictures the description is about and which animals are named. Make sure pupils understand they need to put the number 1 in two boxes. Ask pupils to tell you the answers using sentences. *(Llamas have fur. Humans have hair.)* Repeat with the other descriptions.

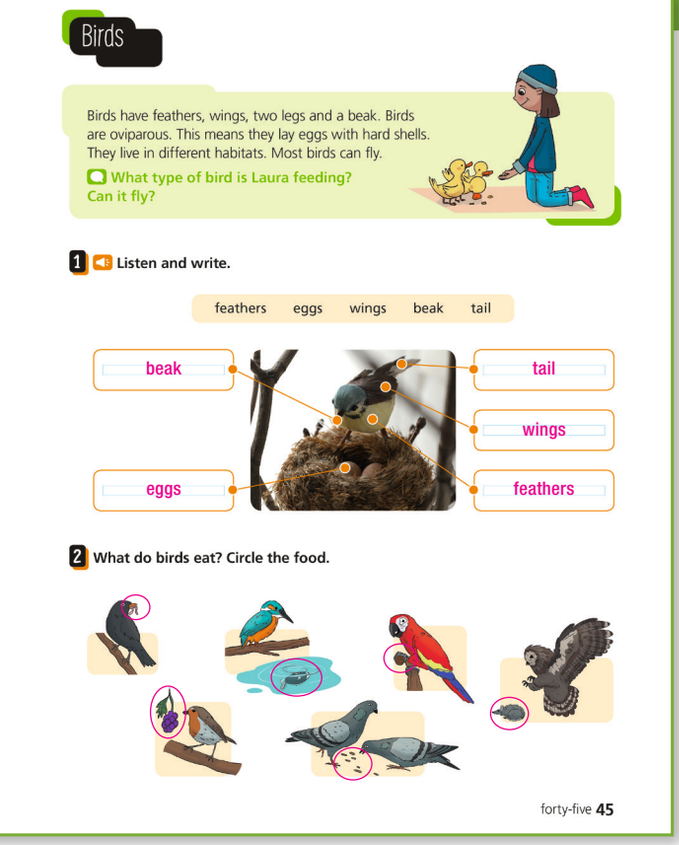
WRAP IT UP

- Show the fox flashcard and ask pupils in pairs to think of as much information as they can about its food, habitat, movement and features. Ask volunteers to say one sentence each to the class. Repeat with photos or pictures of other mammals.
- Tell pupils to group the mammals in the pictures according to the food they eat.

FAST FINISHERS

Fast finishers can draw a mammal and write sentences about it. In pairs, they can describe their mammal for their partner to guess.

BIRDS 45


Birds

Birds have feathers, wings, two legs and a beak. Birds are oviparous. This means they lay eggs with hard shells. They live in different habitats. Most birds can fly.

What type of bird is Laura feeding? Can it fly?

1 Listen and write.

feathers eggs wings beak tail

beak tail wings eggs feathers

2 What do birds eat? Circle the food.

forty-five 45

SUMMARY

Pupils learn about the physical features, reproduction, habitat, movement and nutrition of birds.

LANGUAGE

- Features: feathers, wings, beak, tail
- Reproduction: oviparous, shell, lay eggs
- Nutrition: worms, insects, fish, nuts, seeds, berries, small animals

MATERIALS

Flashcards: bee, bird, butterfly, crocodile, duck, fish, fox, frog, penguin, rabbit, shark, snail, snake, squirrel, turtle.
An egg.
Cards for a fact file.

1.51 Birds

1.52 Activity 1. Script, page 221

GETTING STARTED

- Write the word *vertebrates* on the board and elicit the five groups of animals belonging to this classification. *(Mammals, birds, fish, reptiles and amphibians)*
- Play a game of 'Pictionary'. Give a volunteer one of the animal flashcards. The pupil draws the animal on the board for the rest of the class to guess. Repeat this with other flashcards and pupils.

STEP BY STEP PAGE 45

- Explain that they are going to study birds. Elicit the names of any birds they know.
- Ask the class questions to elicit what they know about birds: the parts of their body, where they live, how they reproduce, how they move, etc. Ask if birds are mammals, and explain that they lay eggs so they are not mammals. Write the word *oviparous* on the board. Show pupils an egg and ask them to describe the shell.

Activity 1 1.52

Draw a bird on the board. Start with the body and head and say: *This is a bird. Here is its body. Here is its head.* Then call on some pupils to name the other parts of a bird's body. Check the vocabulary when you have completed the drawing by pointing to the different parts and asking: *What's this?*

Activity 2

Elicit different types of food birds eat. Help pupils and write the words on the board. *(Insects, fish, nuts, seeds, small animals)* Look at the board and if pupils have suggested worms, put a tick beside the word and say: *Yes, some birds eat worms.* Point to the first picture and ask: *What is the bird eating?* Pupils circle the food. Again, if you have written fish on the board, tick the word and say: *Yes, some birds eat fish.* Repeat for each picture.

WRAP IT UP

Create a Bird fact file. Each pair of pupils creates an information card with a picture and facts about a chosen bird.

FAST FINISHERS

Fast finishers can choose another bird to add to the class fact file.

46 REPTILES AND AMPHIBIANS

SUMMARY

Pupils will learn about the features of, and the differences and similarities between amphibians and reptiles.

LANGUAGE

- Reptile, amphibian, snake, crocodile, lizard, tortoise, salamander, frog, tadpole
- Features: scales, gills, dry / moist / soft skin
- They lay eggs / breathe

MATERIALS

Flashcards: crocodile, toad.

- 1.53 Reptiles and amphibians
- 1.54 Activity 1. Script, page 221
- 1.55 Activity 2 (*What am I?* chant)


Reptiles and amphibians

Reptiles lay hard eggs on land. They breathe with lungs and have scales.
Amphibians lay soft eggs in water. At first they breathe with gills, then develop lungs when they are adults. They have moist skin.
What does Laura have around her neck?

1 Listen and trace the correct arrows.

reptiles
amphibians
They live on land and in water.
They have soft, moist skin.
They have dry skin and scales.
They lay hard eggs on land.
They lay soft eggs in water.
They breathe with lungs.

2 Listen to the *What am I?* chant. Number.
Are they reptiles or amphibians? Tell your partner.
reptile
amphibian
reptile

46 forty-six

GETTING STARTED

Write: *adult, baby, older adult* on the board. Elicit the two missing stages of human life. *(Foetus and child)* Call pupils to the board to draw the life cycle.

STEP BY STEP PAGE 46

Point to the picture of Laura and ask: *What animal has Laura got? Is it a reptile or an amphibian?* Elicit what pupils know about reptiles and amphibians and how they breathe under water. Explain that amphibians have gills when they are young to breathe under water and later they have lungs to breathe when they are out of the water. Find out what pupils know about how frogs and snakes reproduce and what their eggs and skin are like.

Activity 1 1.54

Focus on the photos and ask pupils what they can see in each one and to say where the animals / eggs are.

Activity 2 1.55

Elicit the names of the animals in the photos. Encourage pupils say why each of the animals is a reptile or an amphibian.

WRAP IT UP

Draw a tadpole on the board. Show the flashcards for the *crocodile* and *toad*. Ask: *Which animal looks like this when it is born?* Elicit the differences between the tadpole and the adult toad: where they can live, how they breathe.

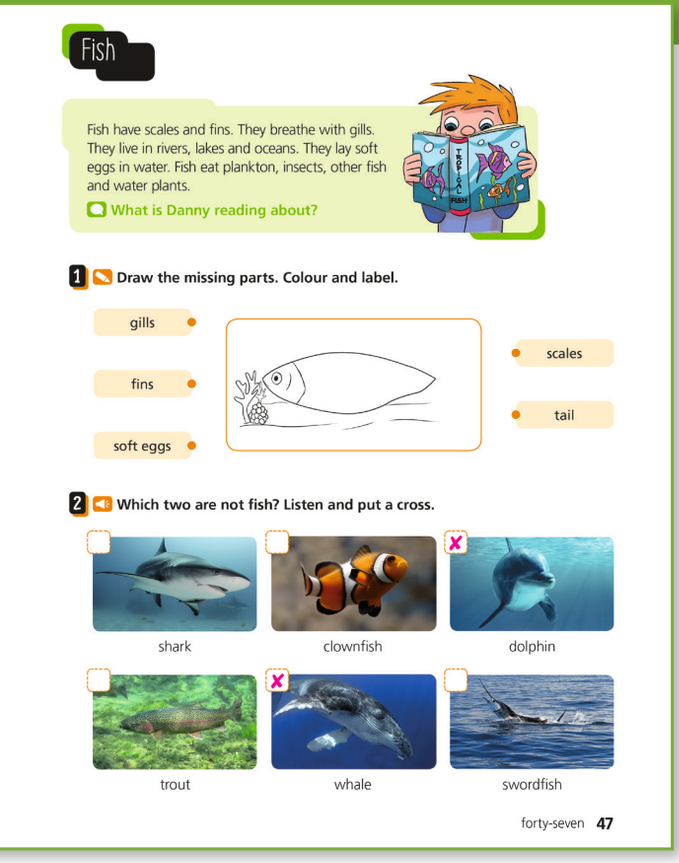
FAST FINISHERS

In pairs, pupils write another verse of the chant.

1.55 WHAT AM I?

1. I've got lots of teeth
   And a very happy smile
   I swim in rivers
   And visit land for a while.
2. I've got a big shell
   Very cosy inside
   When I get scared
   It's a good place to hide!
3. I've got four legs
   I can jump very high
   My skin is soft and moist
   And I've got big red eyes.

FISH 47


Fish

Fish have scales and fins. They breathe with gills. They live in rivers, lakes and oceans. They lay soft eggs in water. Fish eat plankton, insects, other fish and water plants.

What is Danny reading about?

1 Draw the missing parts. Colour and label.

gills
fins
soft eggs
scales
tail

2 Which two are not fish? Listen and put a cross.

shark
clownfish
dolphin
trout
whale
swordfish

forty-seven 47

SUMMARY

Pupils will learn about the features of fish, their habitat, reproduction and nutrition.

LANGUAGE

- Features: scales, fins, gills, tail
- Fish and mammals: shark, clownfish, dolphin, trout, whale, swordfish
- Nutrition: plankton, insects, water plants
- Habitat: oceans, lakes, rivers

MATERIALS

A5 sheets of paper and coloured pencils.

1.56 Fish

1.57 Activity 2. Script, page 221

GETTING STARTED

- Say: *Amphibians live in water and on land.* Elicit which animals only live in water.
- Write: *fish* on the board and in mind map format write the words *skin, breathing, habitat, eggs* and *food*. Ask pupils to tell you what they know about these characteristics of fish. Note ideas on the board.

STEP BY STEP PAGE 47

Listen to and read the text. Ask pupils to look at the picture of Danny, and ask: *What is he doing?*

Activity 1

Invite a volunteer to the board. Give instructions to draw and colour in a fish: *Draw a big fish. Give it eyes, scales, gills, etc.* When the drawing is complete, give instructions to colour each part: *Colour the tail blue.* Hand out the A5 sheets of paper. In pairs, pupils instruct each other to draw and colour in a fish.

Activity 2 1.57

- Ask pupils if they know the names of any fish. Write any fish pupils suggest on the board. If pupils suggest dolphin or whale, write them on the board too. Pupils look at the photos and the names. Before listening, ask pupils to tell their partner which animals in the photos are not fish.
- After listening ask: *What types of animals are whales and dolphins? Why?*

WRAP IT UP

- Draw a Venn diagram on the board. Write: *dolphins* above one circle, *clownfish* above the second circle, and the word *both* above the centre. Elicit the differences and similarities between the two. Encourage pupils to use full sentences. *(Dolphins have live babies. They don't lay eggs.)* Add information onto the Venn diagram in note form: *lungs / gills; skin / scales.*
- In pairs, pupils make life cycle posters for mammals, reptiles, amphibians and fish.

FAST FINISHERS

Fast finishers can draw their own Venn diagram of a swordfish and a whale.

48 ARTHROPODS AND MOLLUSCS

SUMMARY

Pupils will learn about two types of invertebrates: arthropods and molluscs. They will learn to distinguish them and recognise their features.

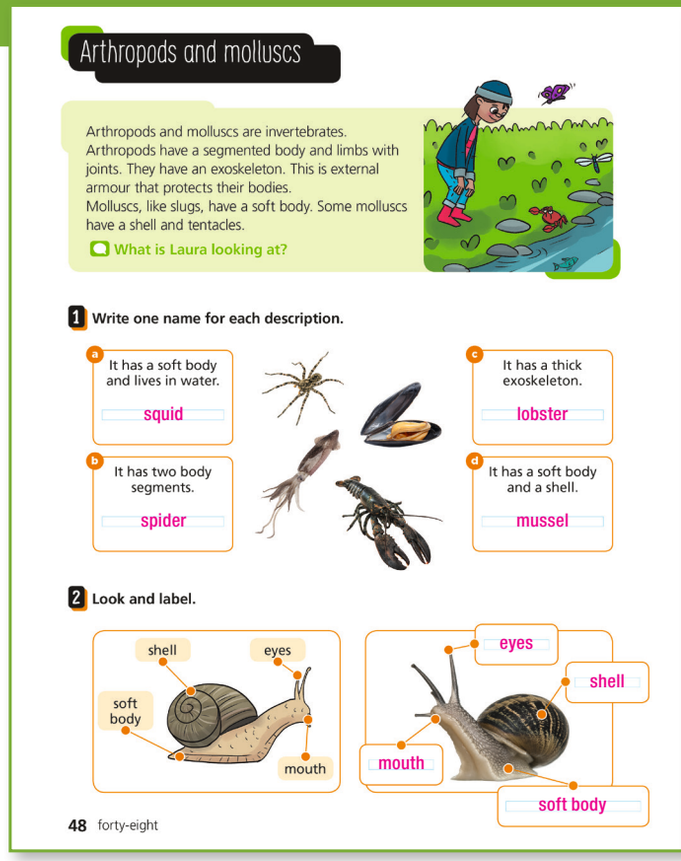
LANGUAGE

- Features: segmented body, limbs, joints, antennae, exoskeleton, armour, tentacles, shell, soft body
- Arthropods and molluscs: lobster, spider, squid, mussel, snail, butterfly, dragonfly

MATERIALS

Poster: Animals.
Pictures of other arthropods and molluscs. Video or a cartoon or documentary about insects.

1.58 Arthropods and molluscs


Arthropods and molluscs

Arthropods and molluscs are invertebrates. Arthropods have a segmented body and limbs with joints. They have an exoskeleton. This is external armour that protects their bodies. Molluscs, like slugs, have a soft body. Some molluscs have a shell and tentacles.

What is Laura looking at?

1 Write one name for each description.

a It has a soft body and lives in water. squid

b It has two body segments. spider

c It has a thick exoskeleton. lobster

d It has a soft body and a shell. mussel

2 Look and label.

shell, eyes, soft body, mouth

eyes, shell, mouth, soft body

48 forty-eight

GETTING STARTED

Divide the class into two teams. Each team nominates a volunteer. Tell them you are going to say an animal classification, e.g. *amphibian* and each volunteer has to mime how an animal from that group moves, eats or breathes. Their teammates have to guess the animal. Give the team one point for correctly choosing an animal from the assigned group and another for the first team to guess the animal correctly.

STEP BY STEP PAGE 48

- Remind pupils of the classification diagram earlier in the unit. Write: *Animal kingdom* as a title. Below write *vertebrates* on the left-hand side and *invertebrates* on the right-hand side. Elicit the five groups of vertebrates. Explain that this lesson is about invertebrates. Ask pupils if they remember the two groups. Show pupils the Animals poster to check their answers.
- Listen to and read the text. Focus pupils attention on the picture. Ask: *What animals can you see? Are they vertebrates or invertebrates?*

Activity 1

Focus on the photo of the spider. Ask questions to establish if it an arthropod or a mollusc: *Does it have an exoskeleton / a segmented body?* For the other three photos, ask: *Is it an arthropod or a mollusc? Why?* to encourage pupils to explain the features.

Activity 2

Show the pictures of arthropods and molluscs. Ask the questions: *Is it an arthropod or a mollusc? Why?* Ask volunteers to name the features they can see.

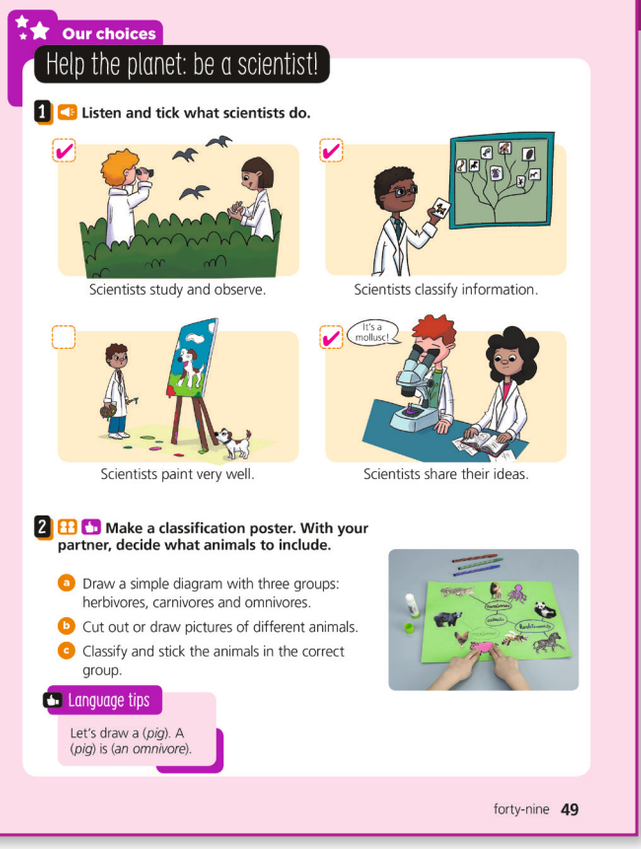
WRAP IT UP

Play a short clip from an animated film, such as *A Bug's Life*, or a documentary about insects and ask pupils to name as many animals as they can.

FAST FINISHERS

Fast finishers can draw a picture of an arthropod or mollusc and label the parts of the body.

OUR CHOICES 49


Our choices

Help the planet: be a scientist!

1 Listen and tick what scientists do.

Scientists study and observe.

Scientists classify information.

Scientists paint very well.

Scientists share their ideas.

2 Make a classification poster. With your partner, decide what animals to include.

a Draw a simple diagram with three groups: herbivores, carnivores and omnivores.

b Cut out or draw pictures of different animals.

c Classify and stick the animals in the correct group.

Language tips

Let's draw a (*pig*). A (*pig*) is (*an omnivore*).

forty-nine 49

SUMMARY

This page helps pupils to become more aware about what scientists do and how to classify information.

LANGUAGE

- Scientific work: study, observe, classify, share ideas
- Herbivores, carnivores, omnivores
- Cut out, draw, stick

MATERIALS

Flashcards: bee, bird, butterfly, cat, clownfish, cow, crab, crocodile, duck, fish, fox, frog, grasshopper, iguana, parrot, penguin, rabbit, shark, snail, snake, squid, squirrel, toad.
A3 card, glue, coloured pencils. Magazines with pictures of animals to cut out.

1.59 Activity 1. Script, page 221

GETTING STARTED

Place all the flashcards of the animals on the board and play a game of 'I spy'. Pupils can choose the name of the animal or a part of the body, say: *I spy with my little eye something beginning with w. (Wing)*

STEP BY STEP PAGE 49

- Ask pupils what they think scientists do. Ask if anyone knows any scientists. If they do, elicit what work they do.
- Use the flashcards of animals. Write the headings: *vertebrates* and *invertebrates* on the board. In teams, pupils take turns to put each flashcard under the correct heading. Explain that they are classifying information. Ask them to think of other groups they could use to classify animals. *(Legs / no legs, live in water / on land)* Write their ideas on the board.

Activity 1 1.59

Ask pupils what the scientists are doing in each picture and if they think it is work that scientists do.

Activity 2

- Point to pupils' suggestions on the board for classifying animals. Ask them if they can think of any other ways to classify them. *(What they eat. Where they live. Features.)* Focus on the Language tips box and encourage pupils to use *Let's …* while they are completing the poster and to describe what is in the poster while they are doing so.
- Pupils join up with another pair and explain their posters.

WRAP IT UP

- Pupils display their posters. Choose one and ask: *Is a (cow) a (herbivore)?* Pupils join a different pair and ask and answer yes / no questions.
- If any of the pupils' parents are scientists, they could come to class to explain what they do at work.

FAST FINISHERS

Fast finishers can draw a picture of themselves as a scientist, doing a scientific activity.

50 REVIEW

SUMMARY

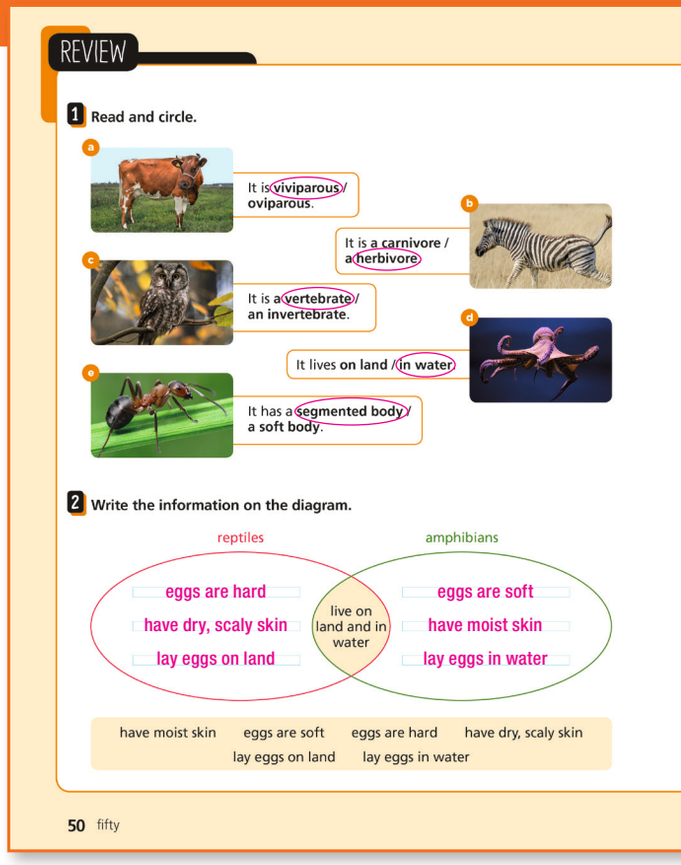
Pupils review unit content and undertake a simple end-of-unit test.

LANGUAGE

- vertebrate, invertebrate, oviparous, viviparous, carnivore, herbivore, omnivore
- Animal categories: mammal, bird, fish, reptile, amphibian, arthropod, mollusc
- Features: moist skin, fins, gills, scales, feathers, tail, shell, tentacles, segmented body, soft body
- It has / lays / lives on / in …

MATERIALS

Flashcards: bee, bird, butterfly, cat, clownfish, cow, crab, crocodile, duck, fish, fox, frog, grasshopper, iguana, parrot, penguin, rabbit, shark, snail, snake, squid, squirrel, toad.
Post-its with the name of a different animal on each.



GETTING STARTED

Play 'Same and different'. Show pupils two flashcards of two different animals, e.g. *bee* and *rabbit*. In pairs, pupils have to think of one thing that is the same and another that is different about the two animals. *(A bee is an invertebrate. A rabbit is a vertebrate.)* Repeat with other pairs of animals. Help by writing some of the vocabulary they might need on the board: *viviparous / oviparous.*

STEP BY STEP PAGES 50–51

Activity 1

Ask about the first photo: *What animal is it?* Then ask pupils to identify the animals in the other photos and say which group they belong to. *(Mammals, birds, molluscs and arthropods)*

Activity 2

- Write: *reptiles* and *amphibians* on the board. Ask pupils to give you examples of animals that are reptiles or amphibians. Write the names on the board under the correct heading. Ask questions about each one: *Does it live on land / in water? Does it have moist skin?*
- Focus on the diagram. Read the first phrase together and ask: *Does a reptile or an amphibian have moist skin?* Pupils write the phrases in the correct space. Pupils continue individually.
- Pupils can prepare another diagram for arthropods and molluscs.

Activity 3 1.60

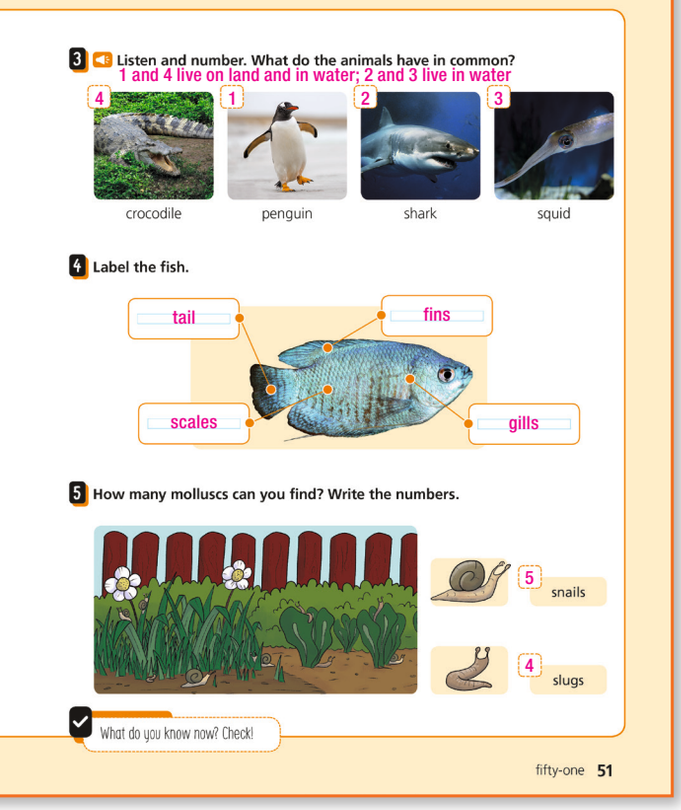
Ask pupils to tell you what they know about each of the animals in the photos. Encourage them to give you as much information as possible about features, reproduction, habitat and diet.

Activity 4

Play 'Vocabulary bee' with parts of a fish: *fin, tail, gills, scales.* Draw a fish on the board. Point to the different parts and ask pupils to tell you what they are. Focus on the photo of the fish. Ask pupils: *What is this?* for each of the labelled parts and give pupils time to write before continuing.

51

1.60 Activity 3. Script, page 221



Activity 5

- Ask pupils to tell you what they know about molluscs and to give you examples. Look at the pictures of the snail and slug and ask: *How are they different?*
- Tell pupils to draw a picture of a snail and to label the parts of it.

WRAP IT UP

- Play 'Who am I?' Write the names of different animals on Post-its. Prepare Post-its for more than the number of pupils in the class. Stick a Post-it on the forehead of each pupil. They should ask yes / no questions to discover what animal they are. Write a model of the question on the board: *Am I an invertebrate?* When they discover which animal they are, they can get a different Post-it.
- Go into the playground and ask pupils to observe all animals they can see. In pairs they should draw examples. They should make notes about what it was doing, how it was moving and where they saw it. Then, in class they tell other pairs what they found and where.

FAST FINISHERS

Fast finishers can draw a map of the playground. They can include a key giving each animal a number. They then insert the numbers on the map to show where they saw each animal.

360° EVALUATION

Download, print and distribute the end-of-unit test. Compare the test at the end of the unit with the ones the pupils did at the beginning and during the unit. Ask: *What did you learn?* Elicit vocabulary and concepts for the unit.

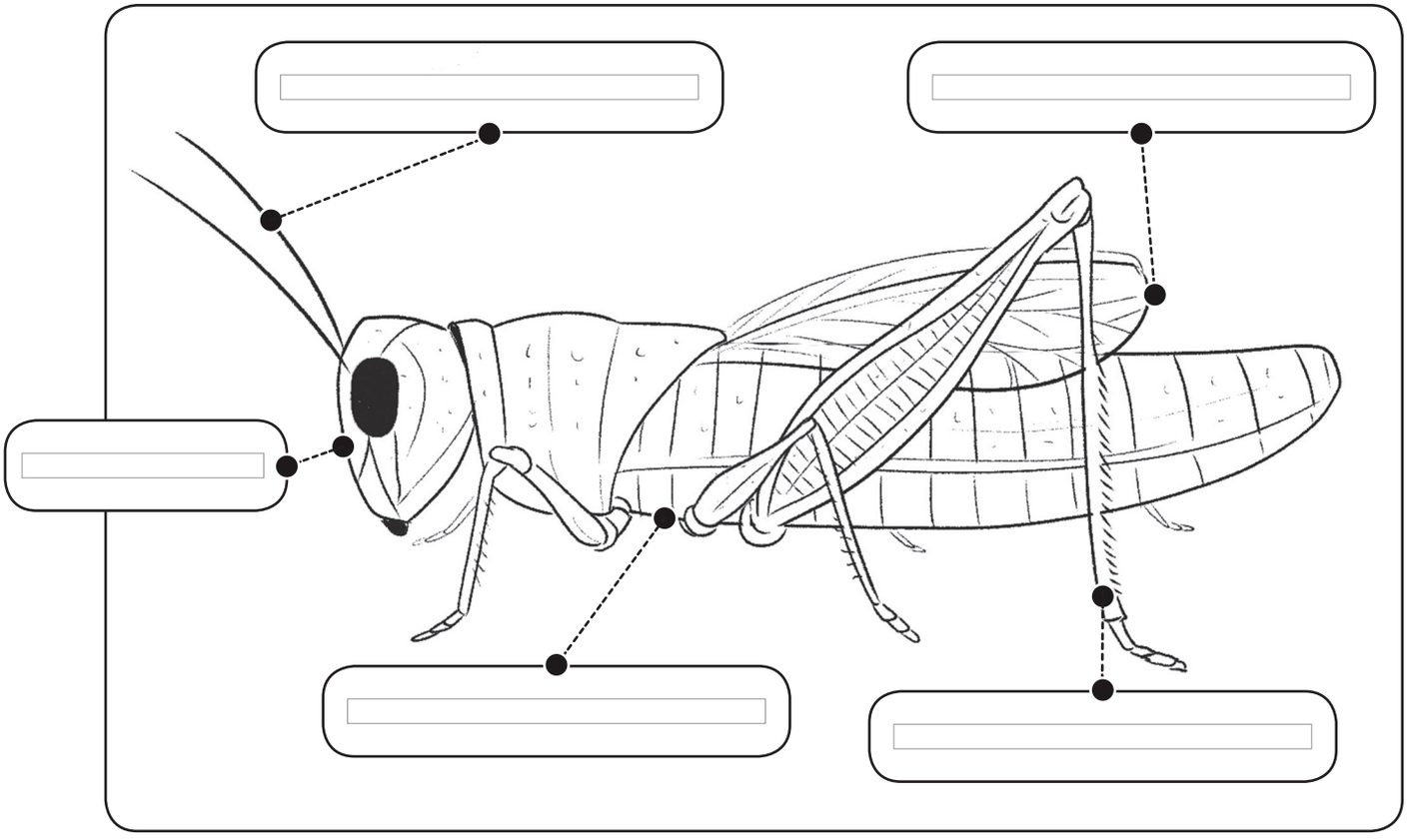
UNIT 3 WORK TOGETHER

Name: _____

Class: _____

Label the grasshopper.

head legs wings body antennae

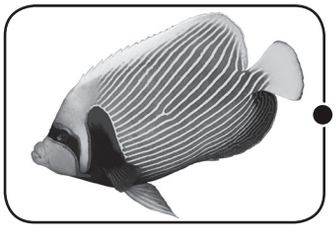
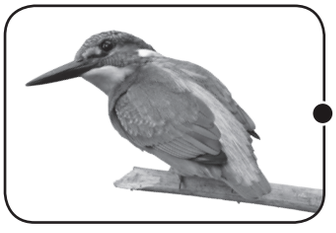
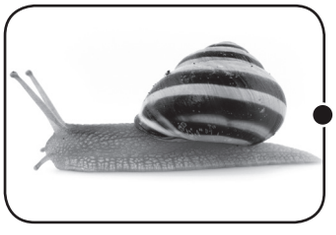


UNIT 3 DIAGNOSTIC TEST

Name: _____

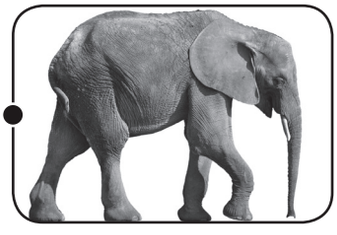
Class: _____

1 Match.

snake
dog
ant
frog
elephant
snail
fish
bird



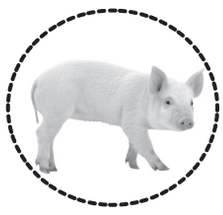



2 Circle the correct word.

Vertebrate / *Invertebrate* animals have a backbone.

Vertebrate / *Invertebrate* animals do not have a backbone.

3 Circle the vertebrate animals.






pig octopus shark butterfly spider owl

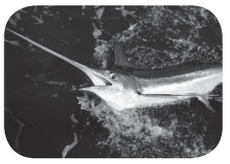
4 Write the correct animal group.

mammals birds reptiles amphibians ~~fish~~

fish





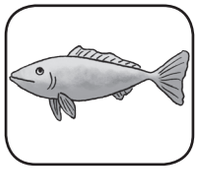



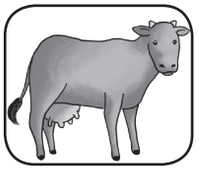


5 Match.

Viviparous animals	eat animals and plants.
Oviparous animals	have live babies.
Herbivores	eat animals.
Carnivores	lay eggs.
Omnivores	eat plants.

6 Where do they live? Tick.






land	☐	land	☐	land	☐	land	☐	land	☐	land	☐
water	☑	water	☐	water	☐	water	☐	water	☐	water	☐

UNIT 3 PUPIL'S SELF-EVALUATION

Name: _____

Class: _____

What do you know about animals? Tick.

	I'm an expert!	I know some things, but I have some questions.	I have lots of questions!
Vertebrates and invertebrates			
What animals eat			
Mammals			
Birds			
Reptiles			
Amphibians			
Fish			
Arthropods			
Molluscs			

UNIT 3 COOPERATIVE LEARNING EVALUATION

Name: _____

Class: _____

Evaluate your cooperative learning. Tick.

Self-evaluation

	Great work!	Good job!	I can do better next time!
I worked well with my group.			
I waited my turn to speak.			
I listened to the rest of the group members.			
I asked for help when I needed it.			

Group evaluation

	Great work!	Good job!	We can do better next time!
We all contributed to the project.			
We shared our ideas and listened to each other.			
We respected each other's opinions.			
We finished our task on time.			
We all helped to prepare the model.			
We solved any problems we had effectively.			
We all enjoyed working together.			

UNIT 3 END-OF-UNIT TEST

Name: _____

Class: _____

1 Complete the sentences.

~~carnivores~~ backbone live oviparous plants animals

Carnivores eat animals.

Herbivores eat _____.

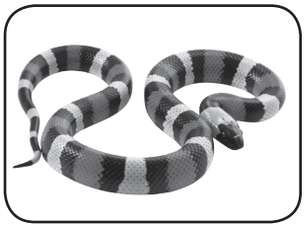
Omnivores eat plants and _____.

Vertebrate animals have a _____ and invertebrate animals do not.

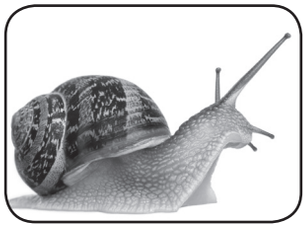
Viviparous animals have _____ babies.

_____ animals lay eggs.

2 Categorise.



snake



snail

crab

cat

vertebrates: snake, _____

invertebrates: _____, _____

3 Write.

mammal fish

mollusc bird

amphibian ~~arthropod~~

reptile

invertebrates:

arthropod

vertebrates:

4 Match the characteristics to mammals or birds.

hair or fur

beak and wings

have live babies

feathers

lay eggs

5 Tick.

They have moist skin.	☐ reptiles	☑ amphibians
They lay soft eggs in water.	☐ reptiles	☐ amphibians
They have scales.	☐ reptiles	☐ amphibians
They breathe with lungs.	☐ reptiles	☐ amphibians
They lay hard eggs on land.	☐ reptiles	☐ amphibians
They breathe with gills and later with lungs.	☐ reptiles	☐ amphibians

6 Write the correct letter. Circle.

a. It has ~~six legs.~~

b. It has many tentacles.

c. It has a thick exoskeleton.

d. It has two body segments.

e. It has a soft body.

☐ 

lobster

arthropod / mollusc

☐ 

octopus

arthropod / mollusc

a 

beetle

arthropod / mollusc

☐ 

snail

arthropod / mollusc

☐ 

spider

arthropod / mollusc

UNIT 3 EVALUATION GRID

Pupils	Explain the characteristics of the different groups of vertebrate animals.	Describe the characteristics of some invertebrate animals.	Classify animals according to what they eat.

UNIT 3 LETTER HOME

Dear Parent / Carer,

In this unit, your child will begin by looking at the illustration related to animals, the unit topic, on the first two pages. This illustration will act as a tool to help the pupils brainstorm ideas and opinions on the subject matter and to assess their previous knowledge. Your child will then listen to and read the story about the course characters, Katie and Ben, who are doing an art project. The story will be accompanied by audio and fun illustrations which will ease your child into the unit subject matter while encouraging curiosity and participation.

After the story, your child will move on to the *Work together* section in which they will use a cooperative learning technique to carry out a group project. Pupils will learn about the body parts of an arthropod and how to make one with plasticine while also developing important team-working and communication skills.

This unit on discovering animals will expand on your child's previous knowledge of the animal kingdom. This will include taking a closer look at different groups of animals and the characteristics that make them different from each other. Your child will also review animal behaviour, what they eat, their habitat, and whether they are viviparous or oviparous. They will learn how to classify animals in different ways and how to create a classification key. Finally, the *Our choices* page will encourage your child to reflect on what scientists do and how they work together.

Useful language tips throughout the unit will provide language support to your child as they talk about the unit content.

KEY VOCABULARY

- Types of animal: vertebrate, invertebrate, carnivore, herbivore, omnivore, oviparous, viviparous
- Animal classification: mammal, bird, fish, reptile, amphibian, arthropod, mollusc
- Features: fur, feathers, wings, tail, beak, scales, gills, moist / dry skin, fins, segmented body, exoskeleton, shell, tentacles, hair, skin, teeth, joints, limbs, backbone, antennae
- Nutrition: worms, insects, fish, nuts, seeds, berries, small animals, plankton, water plants

Have fun!

Best wishes,

Science teacher

Notes


NATURAL
SCIENCE
LEARN TOGETHER