vector

Ma Sc

Maths & Science

sharp minds, bright futures

Catalogue 2021

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Welcome!

Vector Maths & Science is the newest member of MM Educational Group.

Comprehending the needs of the times, MM Educational Group decided to extend its activities in 2017, through a company that specialises in the production of materials for Maths and Science. These subjects play a key role in our lives, while a good grasp of them can help learners understand crucial concepts and processes of everyday life.

The materials of **Vector Maths & Science** aim at specific age groups and include a variety of components for teachers and students, such as full-colour workbooks, CD-ROMs, Teacher's Resources and Tests in electronic format.

The company's mission is to provide quality materials with an emphasis on creativity as well as analysis. Vector materials encourage users to dive deep into the subject matter and guide them in the process of discovering and understanding facts and phenomena.

The slogan **'Sharp Minds, Bright Futures'** emphasises the objective of the company, which is to challenge the minds of young people and encourage them to achieve what they believe is unachievable.

Put on your white coats, get your calculators and let's start an exciting journey!

The Vector team

At **Vector Maths & Science**, we value the ongoing pursuit of knowledge, skills and abilities. Hence, we have established a clear goal - to sharpen students' minds and shape their path towards educational excellence.

To achieve this, we offer more than theories and procedures.

> We build a strong understanding of the fundamentals in Maths and Science.

> We equip students with practical skills necessary, not only for a successful academic development but also in everyday life.

> We develop materials that correspond to the needs of the 21st century, preparing our students to excel in the modern world.

The significant experience of MM Educational Group in education, from pre-school to university, over the last 47 years, is our long-time companion in the dawn of a new era.

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vector
maths & science

Contents

Key to icons

Student's Book

Teacher's Book

Teacher's Resource CD-ROM

Workbook

Workbook Teacher's Edition

What do our Maths books offer?

They promote the development of thinking skills that are linked to the mental strategies used when we process information, make decisions, solve problems, etc.

And we achieve this, using innovative, creative and practical materials!

Ma

Maths

Our Science courses offer a chance to experience an exciting adventure into the mysteries of nature. The students need only to be persistent, open-minded and use their critical thinking. It is our responsibility to equip them with the resources, materials and skills necessary to succeed.

Science

Domains

Numbers

Geometry

Measurement

Data

Problem Solving

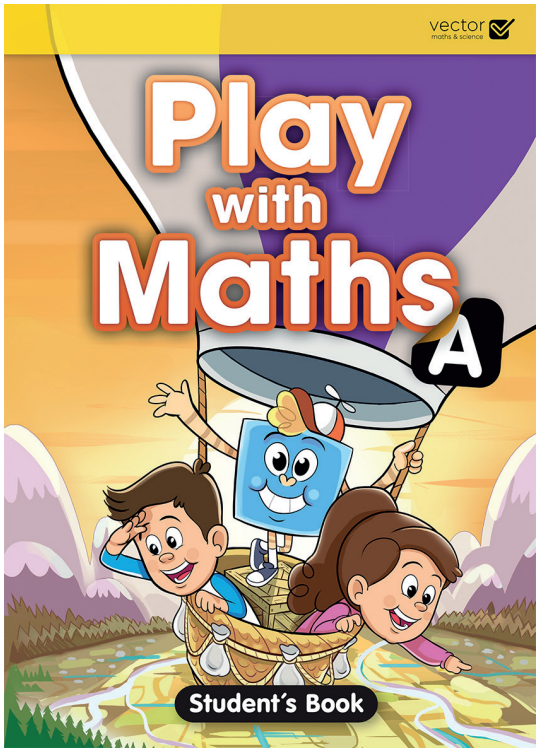
Ma

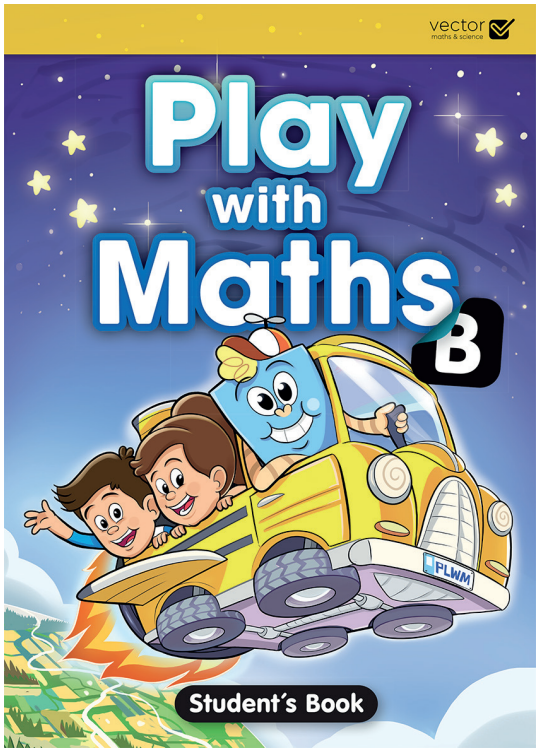
Maths

CEFR		A1		A2	
LEVELS		A1.1	A1.2	A2.1	A2.2
Play with Maths (Pre-Primary)	p. 8				
Let's Start! Maths (Primary)	p. 14				
Maths (Primary)	p. 20				

Play with Maths

Pre-Primary





Designed for very young learners, Play with Maths, which consists of two books, is sure to thrill children. The purpose of the series is to bring children into contact with Mathematics in a fun and entertaining way, through an abundance of interactive activities.

Children are familiarised with basic mathematical concepts such as numbers, patterns, tables etc., that help them enter the world of mathematics in their school life more easily.

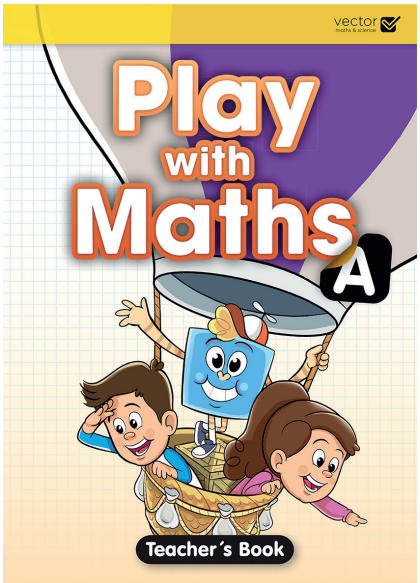
Components

- Student's Book
- Teacher's Book
- Teacher's Resource CD-ROM

Course features

FOR STUDENTS:

- visual problem-solving strategies that help learners understand the relationship between numbers and quantities
- extra activities and games to recycle and consolidate learning
- various activities that activate the mathematical thinking of young learners in a fun way
- illustrated cover pages that trigger the interest of young learners
- examples in every unit that help the learners understand the concept taught
- colour-in pages

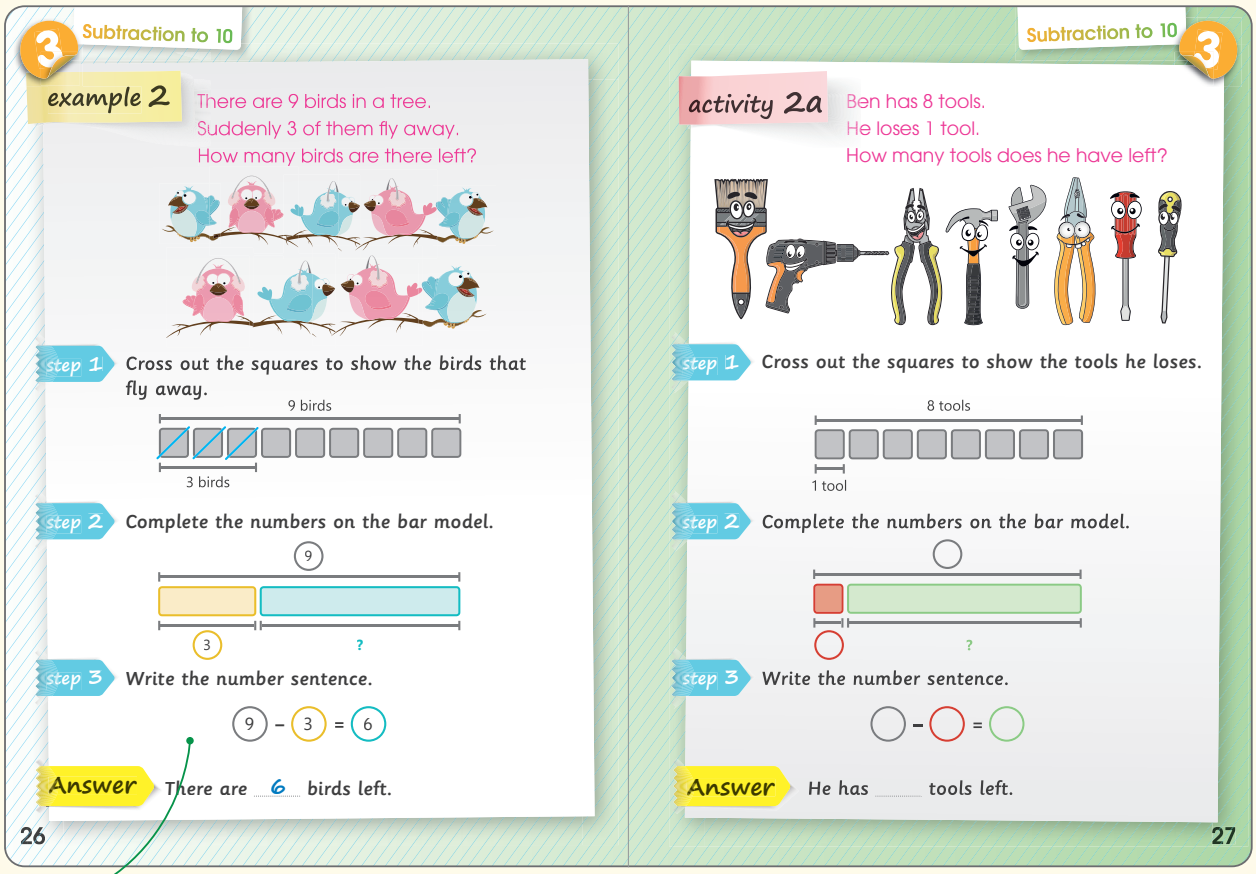


FOR TEACHERS:

- main learning objectives presented at the beginning of each unit
- suggested vocabulary that can be used throughout the unit
- list of the corresponding flashcards to every activity
- a section with students' common difficulties also presented in the example pages
- extra material (activities, games, flashcards etc.) that helps the teacher conduct the lesson
- a pictorial tool (Bar Model Method) used to organise and visualise relationships between known and unknown quantities in word problems
- a key to all activities
- a brief list of everything learners were taught at the end of each unit
- a glossary to support the use of mathematical terms

Ma Play with Maths

Pre-Primary • Sample Pages



3 Subtraction to 10

example 2

There are 9 birds in a tree.
Suddenly 3 of them fly away.
How many birds are there left?

step 1 Cross out the squares to show the birds that fly away.

9 birds

3 birds

step 2 Complete the numbers on the bar model.

9

3 ?

step 3 Write the number sentence.

9 – 3 = 6

Answer There are 6 birds left.

26

Subtraction to 10 3

activity 2a

Ben has 8 tools.
He loses 1 tool.
How many tools does he have left?

step 1 Cross out the squares to show the tools he loses.

8 tools

1 tool

step 2 Complete the numbers on the bar model.

?

step 3 Write the number sentence.

– =

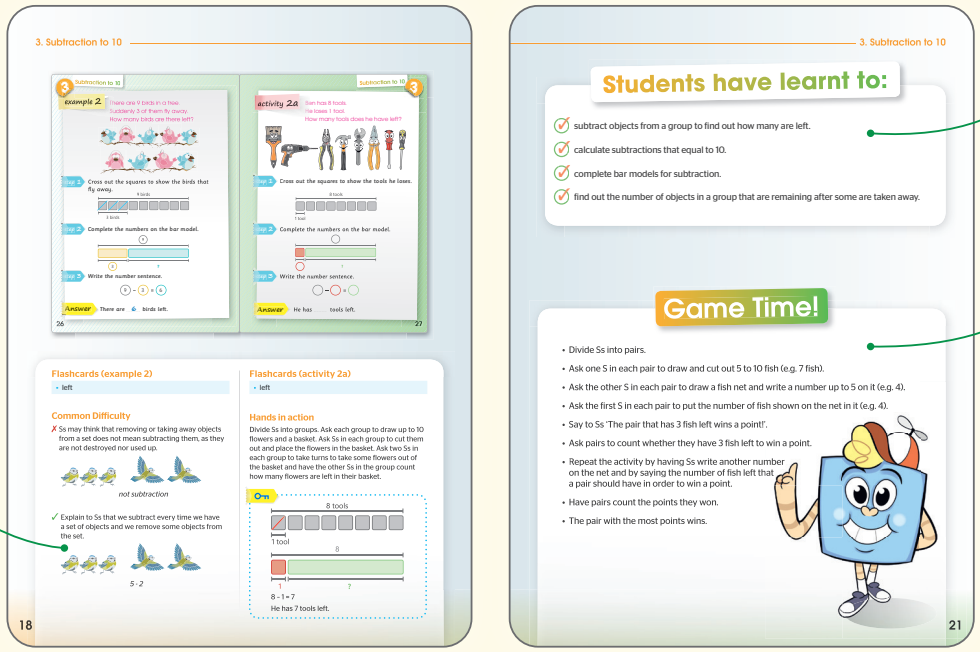
Answer He has ..... tools left.

27

example pages to facilitate teaching

Play with Maths A, Student's Book

important concepts taught in the unit



3. Subtraction to 10

Flashcards (example 2)

- left

Common Difficulty

✗ Ss may think that removing or taking away objects from a set does not mean subtracting them, as they are not destroyed nor used up.

not subtraction

✓ Explain to Ss that we subtract every time we have a set of objects and we remove some objects from the set.

5 - 2

Flashcards (activity 2a)

- left

Hands in action

Divide Ss into groups. Ask each group to draw up to 10 flowers and a basket. Ask Ss in each group to cut them out and place the flowers in the basket. Ask two Ss in each group to take turns to take some flowers out of the basket and have the other Ss in the group count how many flowers are left in their basket.

8 tools

1 tool

8 - 1 = 7

He has 7 tools left.

18

3. Subtraction to 10

Students have learnt to:

- subtract objects from a group to find out how many are left.
- calculate subtractions that equal to 10.
- complete bar models for subtraction.
- find out the number of objects in a group that are remaining after some are taken away.

Game Time!

- Divide Ss into pairs.
- Ask one S in each pair to draw and cut out 5 to 10 fish (e.g. 7 fish).
- Ask the other S in each pair to draw a fish net and write a number up to 5 on it (e.g. 4).
- Ask the first S in each pair to put the number of fish shown on the net in it (e.g. 4).
- Say to Ss 'The pair that has 3 fish left wins a point!'.
- Ask pairs to count whether they have 3 fish left to win a point.
- Repeat the activity by having Ss write another number on the net and by saying the number of fish left that a pair should have in order to win a point.
- Have pairs count the points they won.
- The pair with the most points wins.

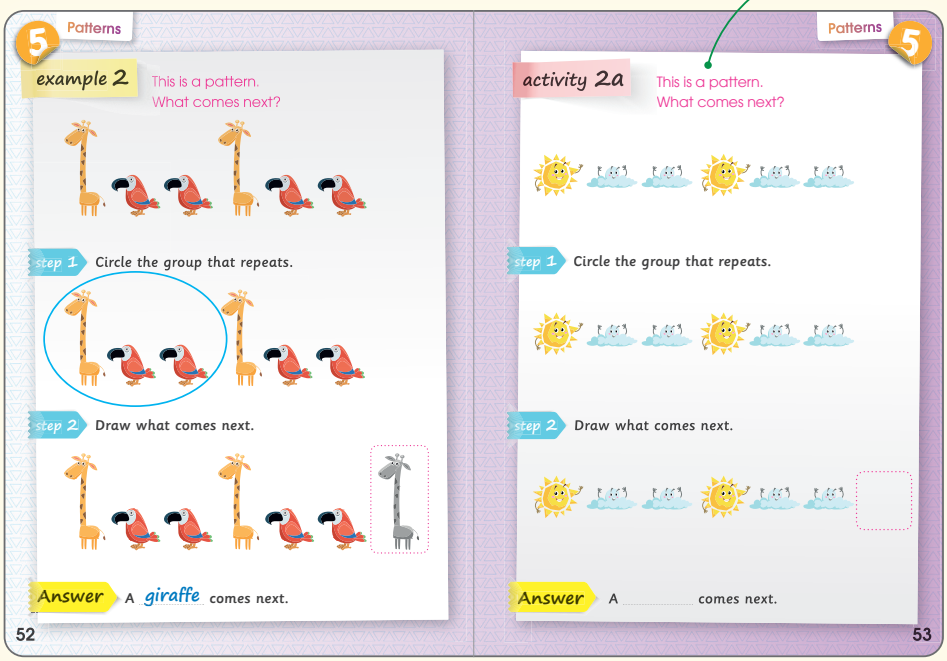
21

extra games

a 'Common Difficulty' section

Play with Maths A, Teacher's Book

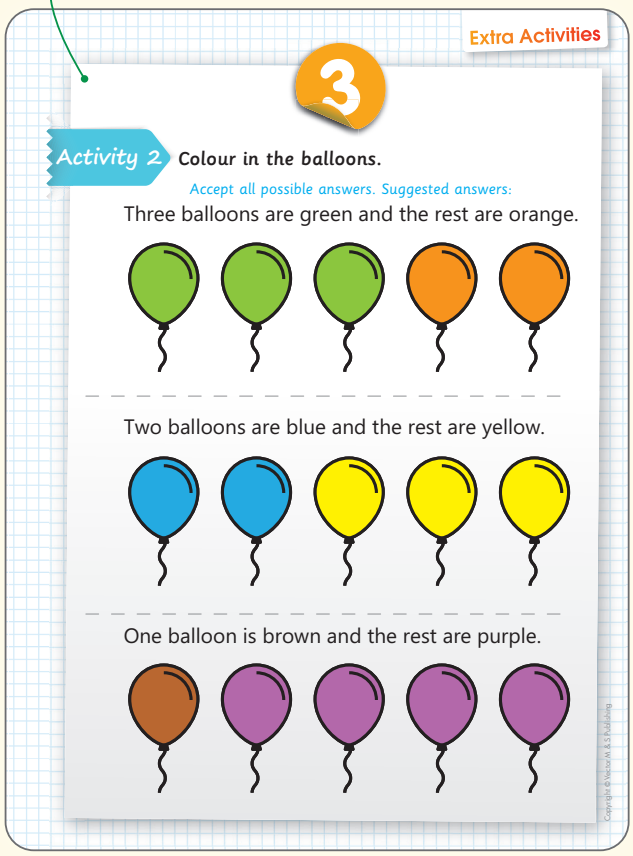
activities for practice

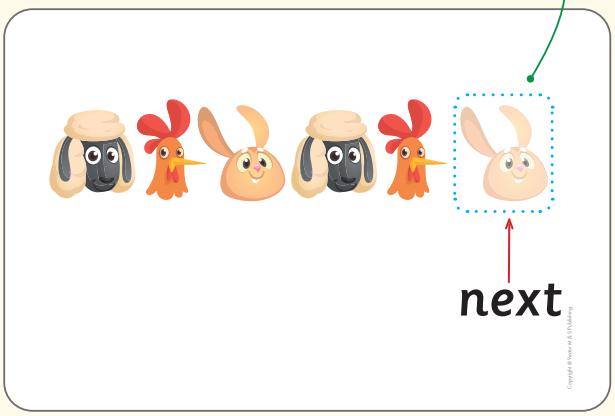


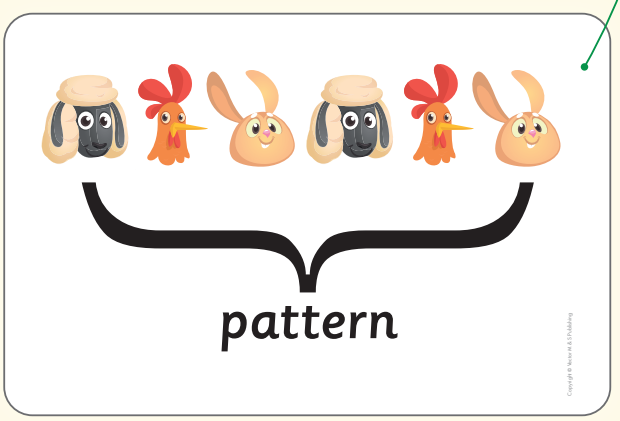
Play with Maths A, Student's Book

key to extra activities provided

flashcards



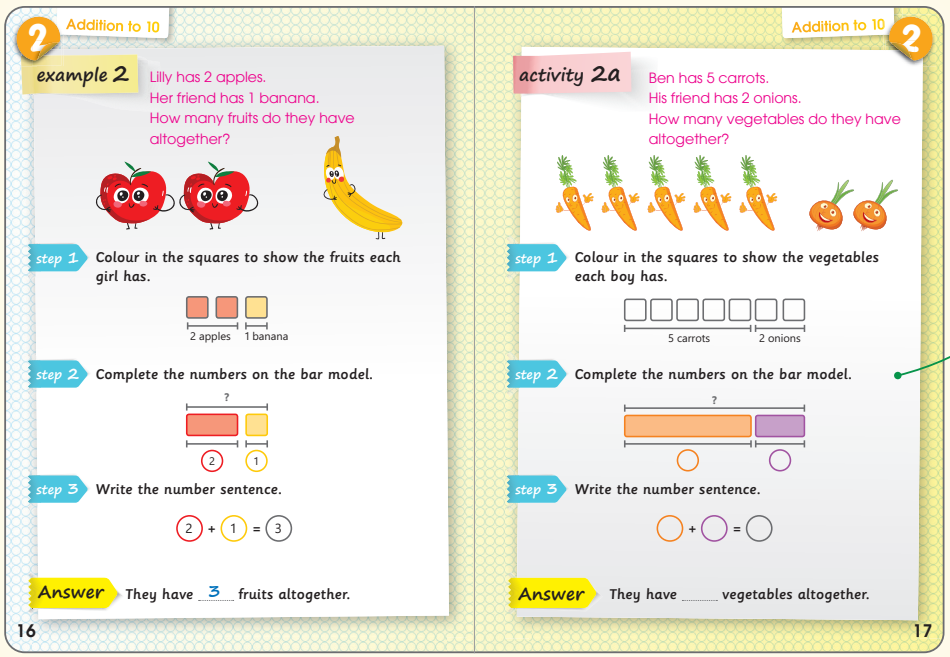




Play with Maths A, Teacher's Resource CD-ROM

Play with Maths

Pre-Primary • Sample Pages



2 Addition to 10

example 2 Lilly has 2 apples. Her friend has 1 banana. How many fruits do they have altogether?

step 1 Colour in the squares to show the fruits each girl has.

2 apples 1 banana

step 2 Complete the numbers on the bar model.

step 3 Write the number sentence.

2 + 1 = 3

Answer They have 3 fruits altogether.

16

Addition to 10 2

activity 2a Ben has 5 carrots. His friend has 2 onions. How many vegetables do they have altogether?

step 1 Colour in the squares to show the vegetables each boy has.

5 carrots 2 onions

step 2 Complete the numbers on the bar model.

step 3 Write the number sentence.

+ =

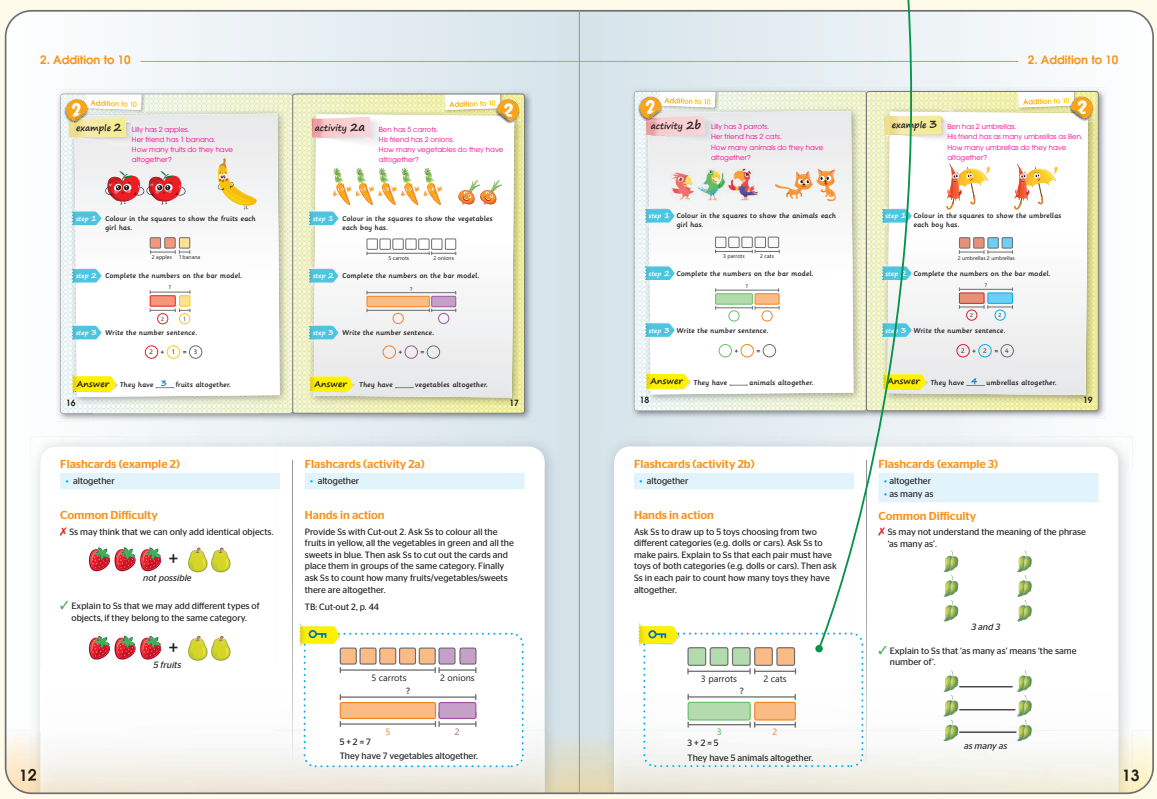
Answer They have ..... vegetables altogether.

17

detailed instructions to facilitate teaching

Play with Maths A, Student's Book

clear activity keys



2. Addition to 10

Flashcards (example 2)
- altogether

Common Difficulty
✗ Ss may think that we can only add identical objects.
not possible
✓ Explain to Ss that we may add different types of objects, if they belong to the same category.
5 fruits

Flashcards (activity 2a)
- altogether

Hands in action
Provide Ss with Cut-out 2. Ask Ss to colour all the fruits in yellow, all the vegetables in green and all the sweets in blue. Then ask Ss to cut out the cards and place them in groups of the same category. Finally ask Ss to count how many fruits/vegetables/sweets there are altogether.
TB: Cut-out 2, p. 44

5 carrots 2 onions
5 + 2 = 7
They have 7 vegetables altogether.

12

2. Addition to 10

Flashcards (activity 2b)
- altogether

Hands in action
Ask Ss to draw up to 5 toys choosing from two different categories (e.g. dolls or cars). Ask Ss to make pairs. Explain to Ss that each pair must have toys of both categories (e.g. dolls or cars). Then ask Ss in each pair to count how many toys they have altogether.

3 parrots 2 cats
3 + 2 = 5
They have 5 animals altogether.

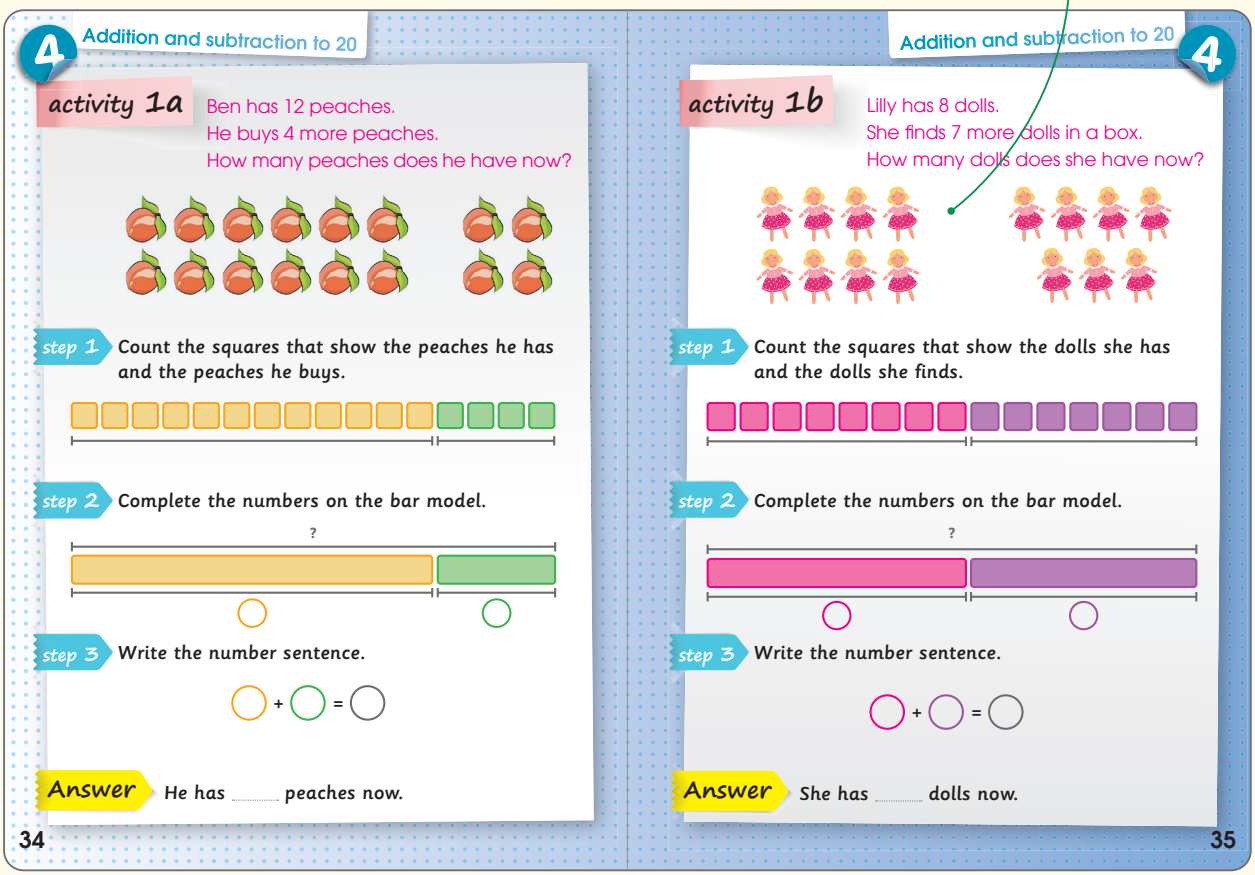
Flashcards (example 3)
- altogether
- as many as

Common Difficulty
✗ Ss may not understand the meaning of the phrase 'as many as'.
3 and 3
✓ Explain to Ss that 'as many as' means 'the same number of'.
as many as

13

Play with Maths A, Teacher's Book

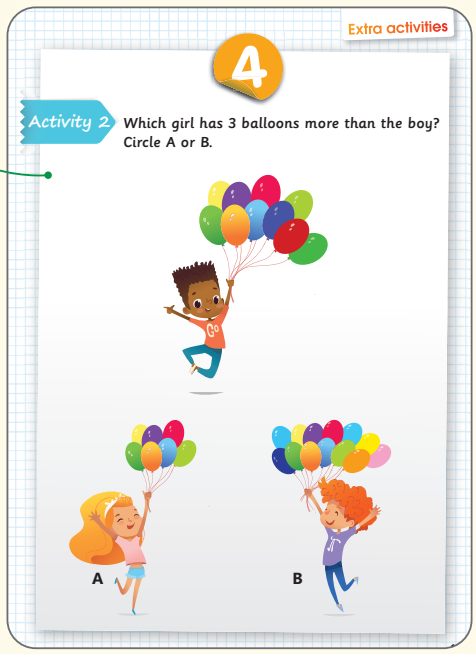
attractive illustrations

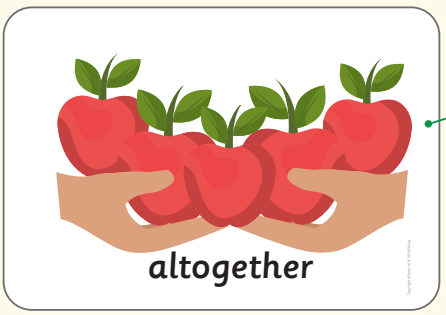


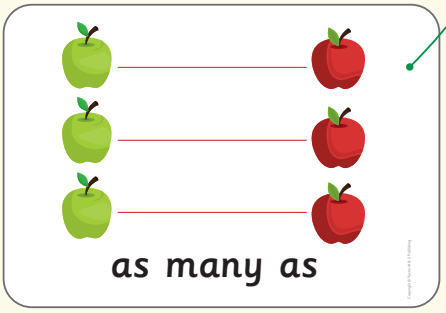
Play with Maths B, Student's Book

extra activities provided

flashcards



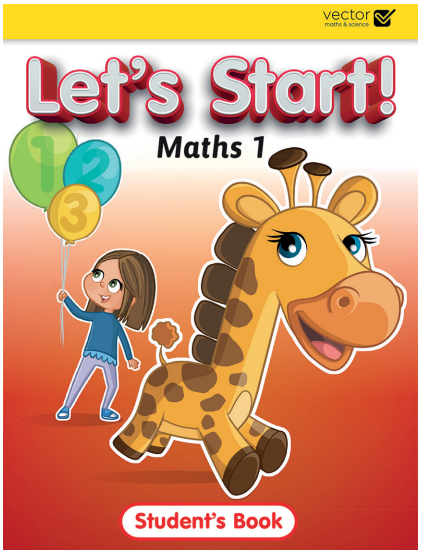


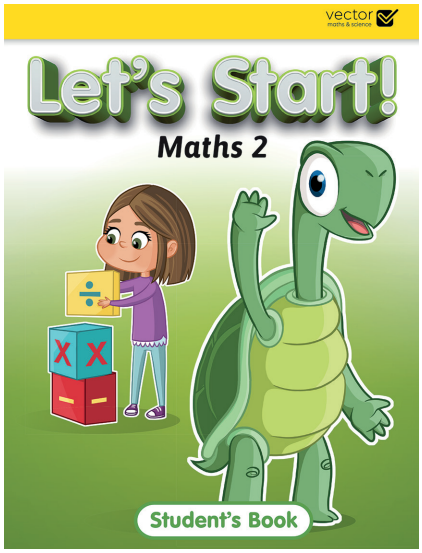


Play with Maths B, Teacher's Resource CD-ROM

Let's Start! Maths

Primary





Let's Start! Maths is a robust series, which uses effective learning and teaching methodologies in order to smoothly ease primary learners into the exciting world of maths. Aimed at the development of problem-solving skills in young learners, the series introduces a variety of word problems to challenge them. The main goal of the series is the improvement of students' deductive skills in order to help them achieve mathematical proficiency.

The six-level curriculum of Let's Start! Maths follows internationally recognised standards in Mathematics. The series adopts the Bar Model Method, which encourages students to develop a wide range of problem-solving strategies. It also aims to enhance thinking skills such as sequencing, comparing, classifying, and analysing. Each lesson is carefully designed to enable students to gain a deep understanding of core mathematical ideas.

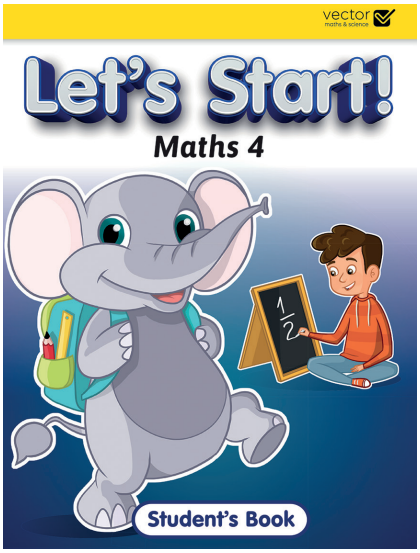
Components

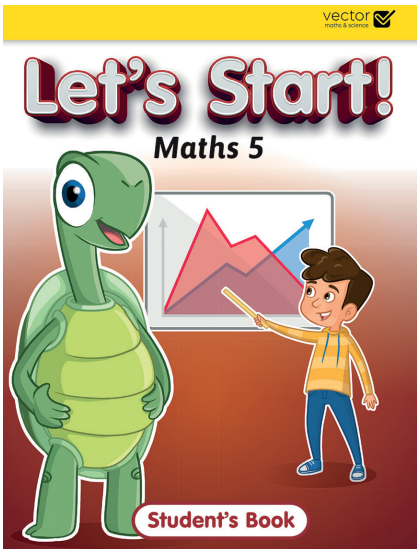
- Student's Book
- Workbook
- Teacher's Book

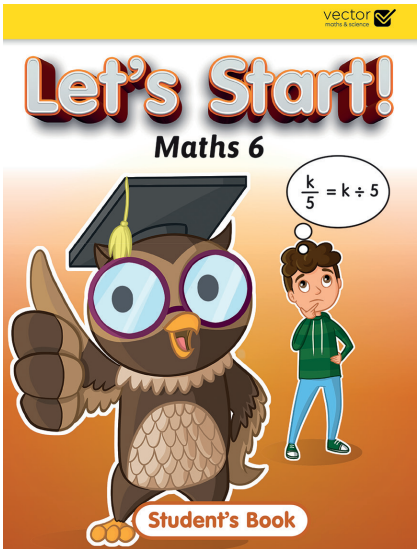
Course features

FOR STUDENTS:

- cover pages with high-quality illustrations to attract the interest of primary students
- visual and pictorial representations that facilitate learning
- colour-defined frames with detailed theory
- graded activities to enable students to comprehend core mathematical concepts and processes and to ensure the gradual development of mathematical knowledge
- a 'Solve the problems' section that aims to help students strengthen essential problem-solving skills in context, with the help of model drawings
- numerous activities to reinforce students' understanding of mathematical concepts and processes, and develop their problem-solving skills
- a glossary with visual representations, age-appropriate definitions and examples that ensure the gradual development of students' vocabulary
- supplementary theory frames assisting students to further understand and complete activities







FOR TEACHERS:

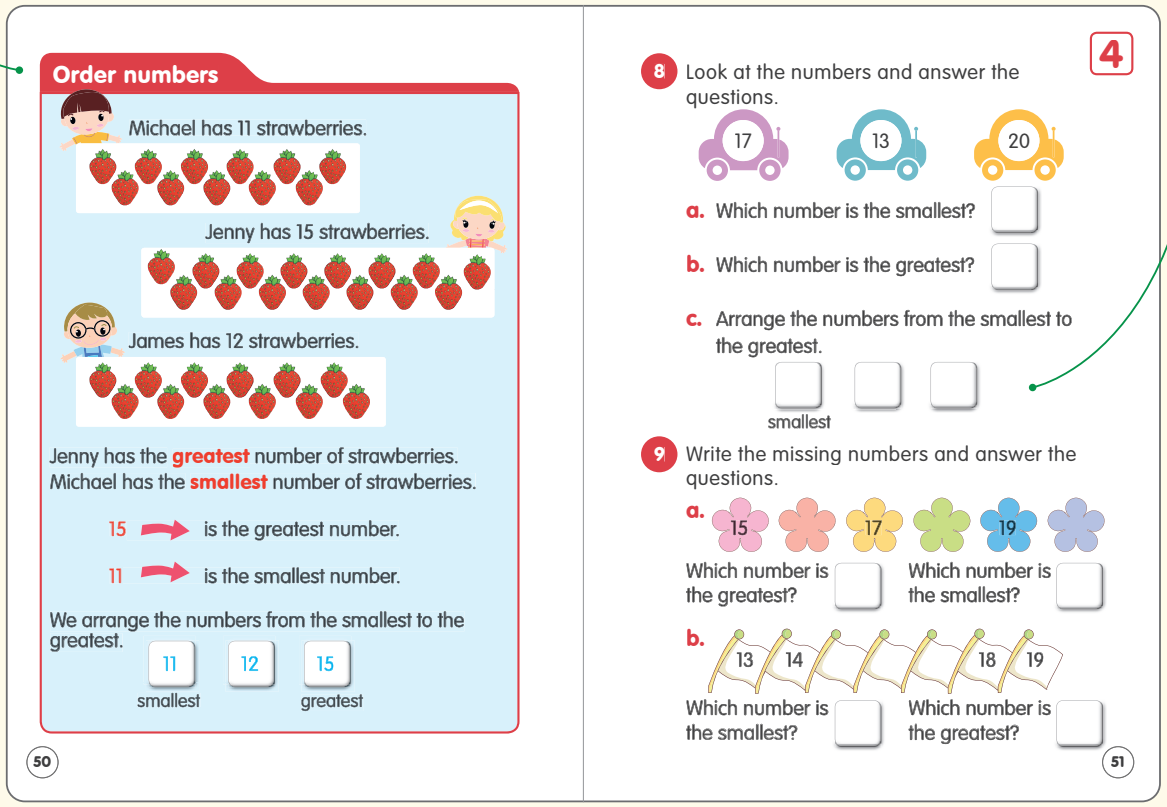
- a detailed map of the Student's Book, Workbook and Teacher's Book that helps the teacher understand the structure of each book
- a cover page with a list of the learning objectives, thinking skills, key concepts and warm-up questions in each unit
- step-by-step lesson plans for each unit
- thought-provoking questions that promote exploration of mathematical concepts and processes
- a Mid-Year and a Final-Year test with activities to assess students' attainment of knowledge and skills
- revision activities to monitor students' progress
- the key to all Student's Book and Workbook activities
- a pictorial tool (Bar Model Method) to organise and visualise relationships between known and unknown quantities in word problems (introduced in the second level)
- consistency of the mathematical content throughout the series

Let's Start! Maths

Primary • Sample Pages

theory section

various activities for practice



Order numbers

Michael has 11 strawberries.

Jenny has 15 strawberries.

James has 12 strawberries.

Jenny has the **greatest** number of strawberries.
Michael has the **smallest** number of strawberries.

15 → is the greatest number.

11 → is the smallest number.

We arrange the numbers from the smallest to the greatest.

11 (smallest) 12 15 (greatest)

50

4

8 Look at the numbers and answer the questions.

17 13 20

a. Which number is the smallest? ☐

b. Which number is the greatest? ☐

c. Arrange the numbers from the smallest to the greatest.

☐ (smallest) ☐ ☐

9 Write the missing numbers and answer the questions.

a. 15 ☐ 17 ☐ 19 ☐

Which number is the greatest? ☐ Which number is the smallest? ☐

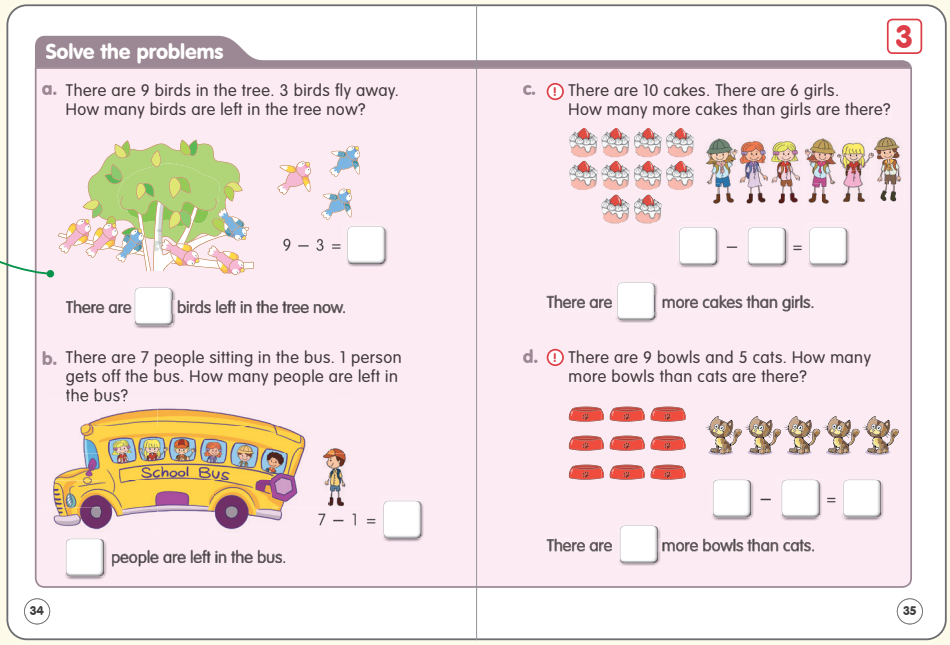
b. 13 14 ☐ ☐ 18 19

Which number is the smallest? ☐ Which number is the greatest? ☐

51

Let's Start! Maths 1, Student's Book

a 'Solve the problems' section



Solve the problems

a. There are 9 birds in the tree. 3 birds fly away. How many birds are left in the tree now?

9 − 3 = ☐

There are ☐ birds left in the tree now.

b. There are 7 people sitting in the bus. 1 person gets off the bus. How many people are left in the bus?

7 − 1 = ☐

☐ people are left in the bus.

34

3

c. ! There are 10 cakes. There are 6 girls. How many more cakes than girls are there?

☐ − ☐ = ☐

There are ☐ more cakes than girls.

d. ! There are 9 bowls and 5 cats. How many more bowls than cats are there?

☐ − ☐ = ☐

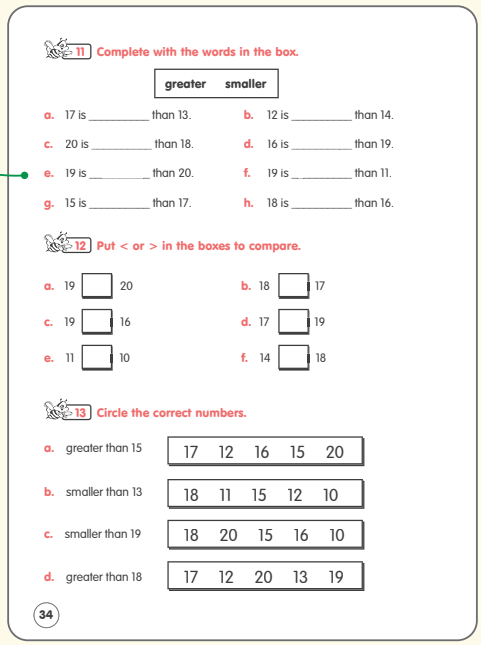
There are ☐ more bowls than cats.

35

Let's Start! Maths 1, Student's Book

vector maths & science

extra activities for practice in the Workbook



11 Complete with the words in the box.

greater smaller

a. 17 is _____ than 13.
b. 12 is _____ than 14.
c. 20 is _____ than 18.
d. 16 is _____ than 19.
e. 19 is _____ than 20.
f. 19 is _____ than 11.
g. 15 is _____ than 17.
h. 18 is _____ than 16.

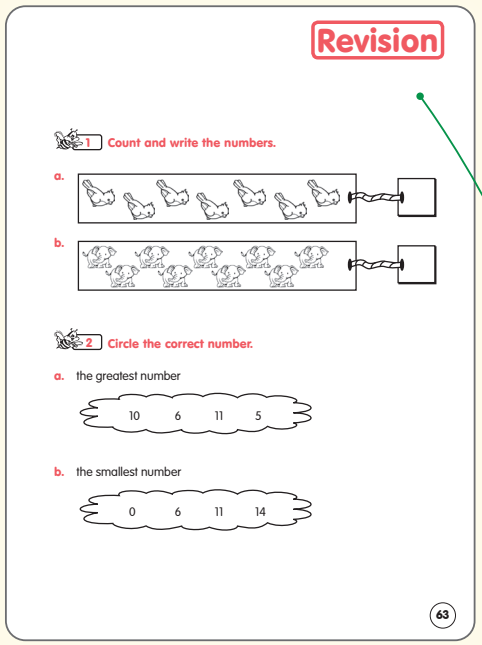
12 Put < or > in the boxes to compare.

a. 19 ☐ 20
b. 18 ☐ 17
c. 19 ☐ 16
d. 17 ☐ 19
e. 11 ☐ 10
f. 14 ☐ 18

13 Circle the correct numbers.

a. greater than 15: 17 12 16 15 20
b. smaller than 13: 18 11 15 12 10
c. smaller than 19: 18 20 15 16 10
d. greater than 18: 17 12 20 13 19

34



Revision

1 Count and write the numbers.

a.
b.

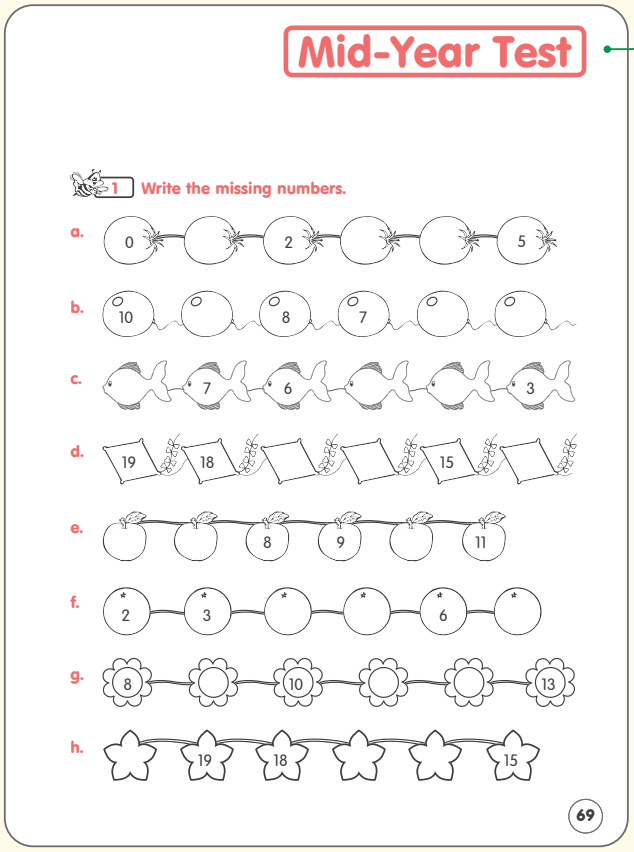
2 Circle the correct number.

a. the greatest number: 10 6 11 5
b. the smallest number: 0 6 11 14

63

Let's Start! Maths 1, Workbook

revision, mid-year and final-year tests included in the Workbook

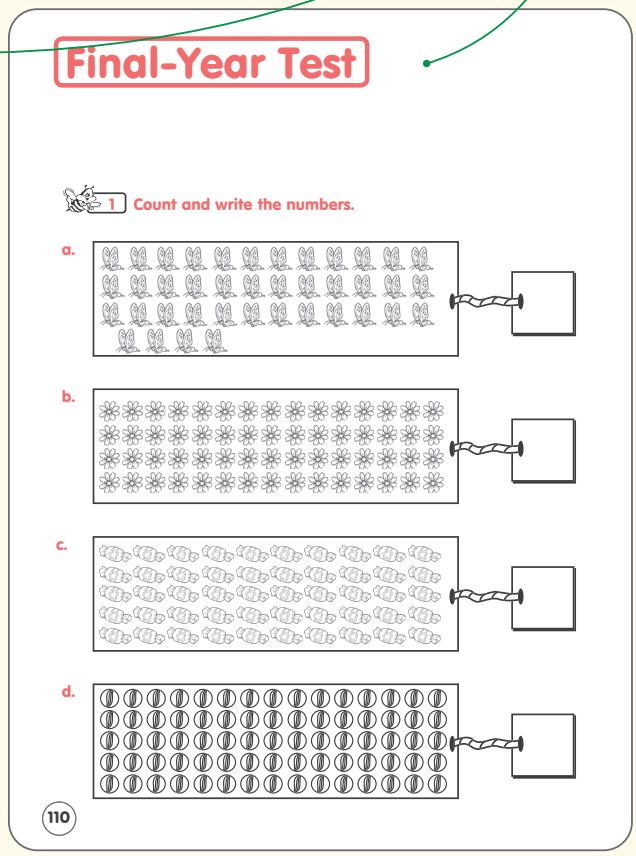


Mid-Year Test

1 Write the missing numbers.

a. 0 _ 2 _ _ 5
b. 10 _ 8 7 _ _
c. _ 7 6 _ _ 3
d. 19 18 _ _ 15 _
e. _ 8 9 _ 11
f. 2 3 _ _ 6 _
g. 8 _ 10 _ _ 13
h. _ 19 18 _ _ 15

69



Final-Year Test

1 Count and write the numbers.

a.
b.
c.
d.

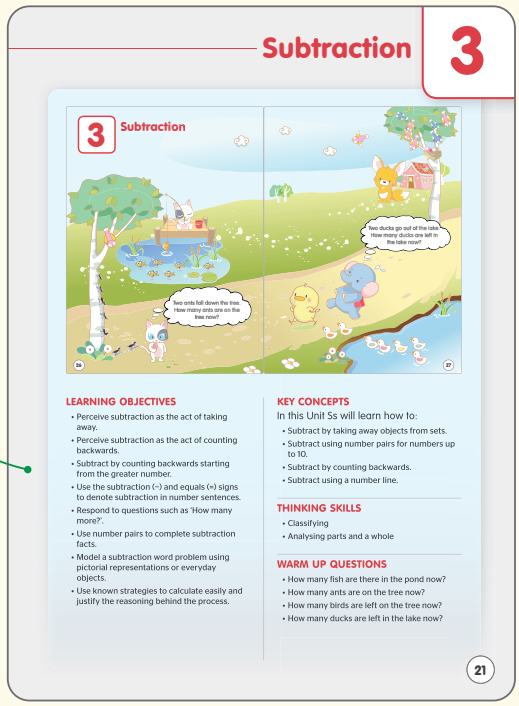
110

Let's Start! Maths 1, Workbook

Let's Start! Maths

Primary • Sample Pages

a brief introduction of the unit



Subtraction 3

3 Subtraction

Two ants fall down the tree. How many ants are on the tree now?

Two ducks go out of the lake. How many ducks are left in the lake now?

LEARNING OBJECTIVES

- Perceive subtraction as the act of taking away.
- Perceive subtraction as the act of counting backwards.
- Subtract by counting backwards starting from the greater number.
- Use the subtraction (–) and equals (=) signs to denote subtraction in number sentences.
- Respond to questions such as 'How many more?'.
- Use number pairs to complete subtraction facts.
- Model a subtraction word problem using pictorial representations or everyday objects.
- Use known strategies to calculate easily and justify the reasoning behind the process.

KEY CONCEPTS

In this Unit Ss will learn how to:

- Subtract by taking away objects from sets.
- Subtract using number pairs for numbers up to 10.
- Subtract by counting backwards.
- Subtract using a number line.

THINKING SKILLS

- Classifying
- Analysing parts and a whole

WARM UP QUESTIONS

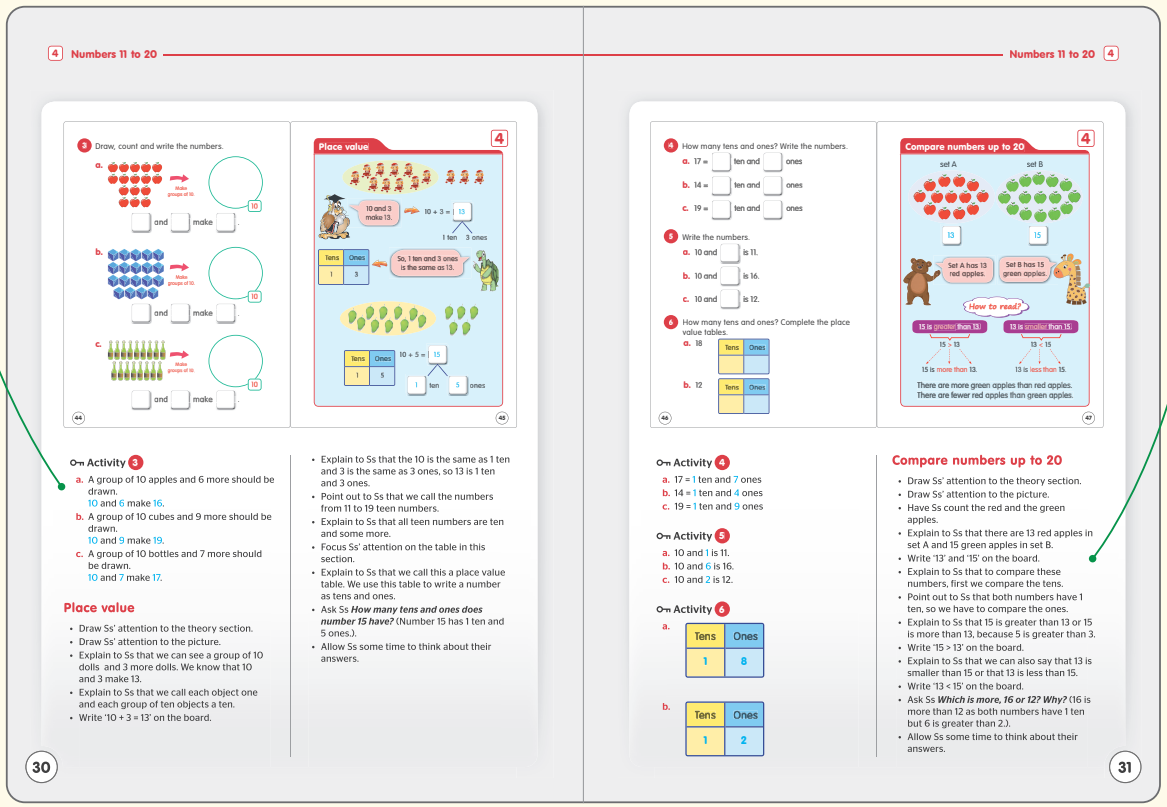
- How many fish are there in the pond now?
- How many ants are on the tree now?
- How many birds are left on the tree now?
- How many ducks are left in the lake now?

21

Let's Start! Maths 1, Teacher's Book

key to the activities of the Student's Book

step-by-step guidelines for the lesson



4 Numbers 11 to 20

3 Draw, count and write the numbers.

a. Make groups of 10. 10 and make .

b. Make groups of 10. 10 and make .

c. Make groups of 10. 10 and make .

44

Place value 4

10 and 3 make 13. 10 + 3 = 13. 1 ten 3 ones

Tens	Ones
1	3

So, 1 ten and 3 ones is the same as 13.

Tens	Ones
1	5

10 + 5 = 15. 1 ten 5 ones

45

Activity 3

a. A group of 10 apples and 6 more should be drawn.
10 and 6 make 16.

b. A group of 10 cubes and 9 more should be drawn.
10 and 9 make 19.

c. A group of 10 bottles and 7 more should be drawn.
10 and 7 make 17.

Place value

- Draw Ss' attention to the theory section.
- Draw Ss' attention to the picture.
- Explain to Ss that we can see a group of 10 dolls and 3 more dolls. We know that 10 and 3 make 13.
- Explain to Ss that we call each object one and each group of ten objects a ten.
- Write '10 + 3 = 13' on the board.
- Explain to Ss that the 10 is the same as 1 ten and 3 is the same as 3 ones, so 13 is 1 ten and 3 ones.
- Point out to Ss that we call the numbers from 11 to 19 teen numbers.
- Explain to Ss that all teen numbers are ten and some more.
- Focus Ss' attention on the table in this section.
- Explain to Ss that we call this a place value table. We use this table to write a number as tens and ones.
- Ask Ss ***How many tens and ones does number 15 have?*** (Number 15 has 1 ten and 5 ones.).
- Allow Ss some time to think about their answers.

30

4 Numbers 11 to 20

4 How many tens and ones? Write the numbers.

a. 17 = ten and ones

b. 14 = ten and ones

c. 19 = ten and ones

5 Write the numbers.

a. 10 and is 11.

b. 10 and is 16.

c. 10 and is 12.

6 How many tens and ones? Complete the place value tables.

a. 18

Tens	Ones

b. 12

Tens	Ones

46

Compare numbers up to 20 4

set A set B

13 15

Set A has 13 red apples. Set B has 15 green apples.

How to read?

13 is greater than 13! 13 is smaller than 15!

15 > 13 13 < 15

15 is more than 13. 13 is less than 15.

There are more green apples than red apples. There are fewer red apples than green apples.

47

Activity 4

a. 17 = 1 ten and 7 ones
b. 14 = 1 ten and 4 ones
c. 19 = 1 ten and 9 ones

Activity 5

a. 10 and 1 is 11.
b. 10 and 6 is 16.
c. 10 and 2 is 12.

Activity 6

a.

Tens	Ones
1	8

b.

Tens	Ones
1	2

Compare numbers up to 20

- Draw Ss' attention to the theory section.
- Draw Ss' attention to the picture.
- Have Ss count the red and the green apples.
- Explain to Ss that there are 13 red apples in set A and 15 green apples in set B.
- Write '13' and '15' on the board.
- Explain to Ss that to compare these numbers, first we compare the tens.
- Point out to Ss that both numbers have 1 ten, so we have to compare the ones.
- Explain to Ss that 15 is greater than 13 or 15 is more than 13, because 5 is greater than 3.
- Write '15 > 13' on the board.
- Explain to Ss that we can also say that 13 is smaller than 15 or that 13 is less than 15.
- Write '13 < 15' on the board.
- Ask Ss ***Which is more, 16 or 12? Why?*** (16 is more than 12 as both numbers have 1 ten but 6 is greater than 2.).
- Allow Ss some time to think about their answers.

31

Let's Start! Maths 1, Teacher's Book

theory section

Number patterns (2)

1150 1200 1250 ? 1350

+50 +50 +50 +50

1150 1200 1250 1300 1350

We add 50 to get the next number.

6000 7000 8000 9000 ?

+1000 +1000 +1000 +1000

6000 7000 8000 9000 10 000

We add 1000 to get the next number.

1

7800 7700 7600 7500 ?

−100 −100 −100 −100

7800 7700 7600 7500 7400

We subtract 100 to get the next number.

15 Complete the number patterns.

a. 4000, 5000, 6000, 7000, ____

b. 2120, 2220, ____, 2420, 2520

c. 6855, 6755, 6655, ____, 6455

d. 3021, ____, 5021, 6021, 7021

e. 7060, 7050, 7040, ____, 7020

Let's Start! Maths 3, Student's Book

From decimal to percentage

How can we write 0.12 as a percentage?

Method 1 We multiply the decimal by 100%.

0.12 x 100% = 12%

Remember, when we multiply a decimal by 100 we move the decimal point 2 places to the right. 0.12 → 1.2 → 12

Method 2

Step 1 Change the decimal to a fraction with a denominator of 100.

Step 2 Write the fraction as a percentage.

$0.12 = \frac{12}{100} = 12\%$

Example 1 Write 0.4 as a percentage.

0.4 x 100% = 40%

OR

$0.4 = 0.40 = \frac{40}{100} = 40\%$

0.4 → 4 → 40

Example 2 Write 0.07 as a percentage.

0.07 x 100% = 7%

OR

$0.07 = \frac{7}{100} = 7\%$

9

5 Write the decimals as percentages.

a. 0.5 = ____ b. 0.9 = ____ c. 0.1 = ____

d. 0.23 = ____ e. 0.28 = ____ f. 0.37 = ____

g. 0.01 = ____ h. 0.02 = ____ i. 0.06 = ____

6 Put <, = or > in the boxes to compare.

a. 37% ____ 0.37 b. 0.03 ____ 30%

c. 0.68 ____ 86% d. 0.8 ____ 8%

e. 12% ____ 0.12 f. 0.1 ____ 10%

g. 9% ____ 0.09 h. $\frac{3}{4}$ ____ 95%

7 Complete the table.

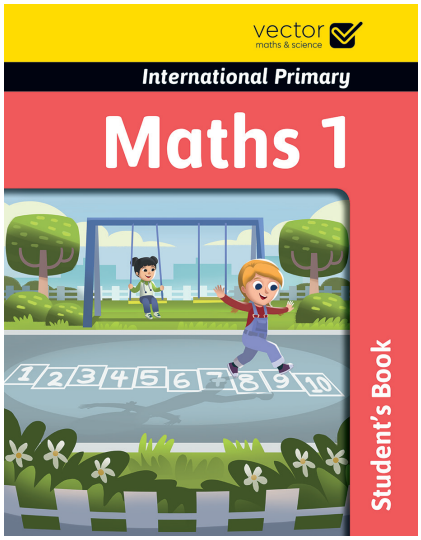
Percentage	Fraction	Simplest Form
20%		
45%		
5%		
25%		

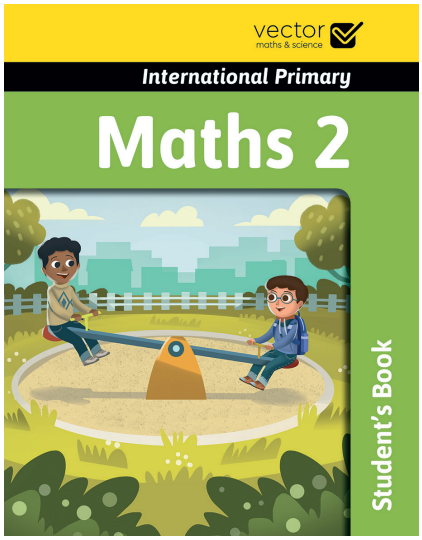
various activities for practice

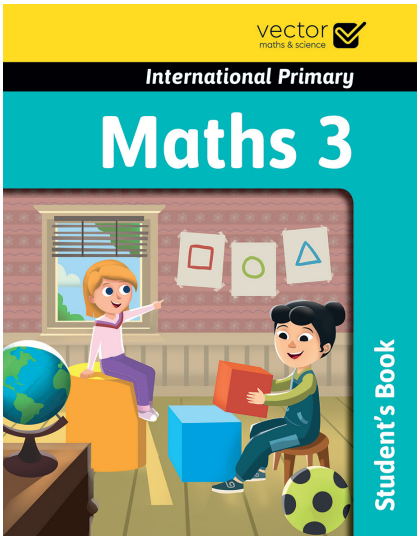
Let's Start! Maths 5, Student's Book

Maths

International Primary







Vector IPM* is a pioneering series based on the modern principles of Maths teaching, which introduces students to the exciting world of maths. The series aims to captivate students' interest, motivate mathematical investigation and assist students in developing and mastering the skills necessary for success.

Vector IPM* is a contemporary six-level series for primary students. Responding to the needs of the 21st century, the course aims to reinforce skills such as critical thinking, problem solving and logical reasoning through a balanced and progressive development of learning objectives. The syllabus is structured in a spiral form to promote a holistic view of Maths and to enhance the interconnection between different domains. Each lesson is carefully designed to enable students to gain a deep understanding of core mathematical ideas.

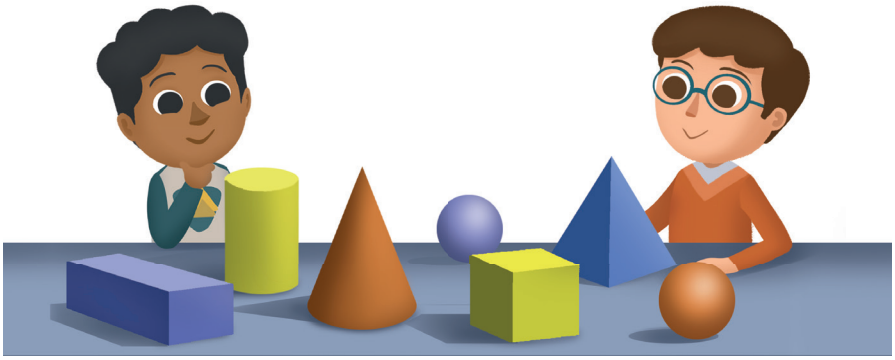
Course features

FOR STUDENTS:

- age-appropriate mathematical learning objectives
- gradual and spiral development of mathematical knowledge
- lessons based on the teaching model of Engage, Explore, Explain, Elaborate and Evaluate (5E Model)
- simple and comprehensible vocabulary to support EAL (English as an Additional Language) students
- gradual development of mathematical terminology and literacy
- visual and pictorial representations that facilitate learning
- stimulating activities that enhance the consolidation of knowledge and reinforce critical thinking and mathematical reasoning skills
- special emphasis on the development of problem solving skills
- enjoyable games, puzzles, riddles and cross-curricular activities that enhance a positive attitude towards Mathematics
- review pages at the end of each unit
- workbook/supplementary activities for individual practice
- resource sheets to support the understanding of mathematical concepts and processes (provided at the back of the Workbook)
- glossary with visual representations, age-appropriate definitions and comprehensible examples
- modern, student-friendly layout with high-quality illustrations
- extension of mathematical concepts in real life context

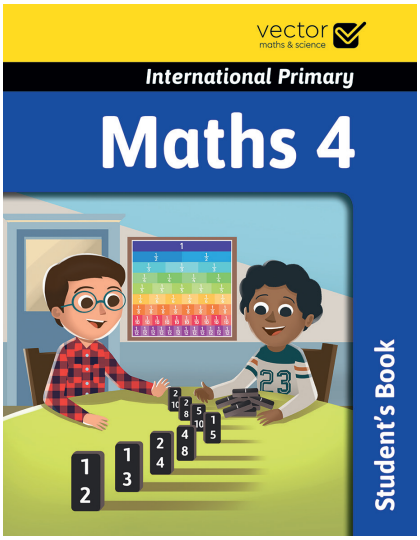
*International Primary Maths

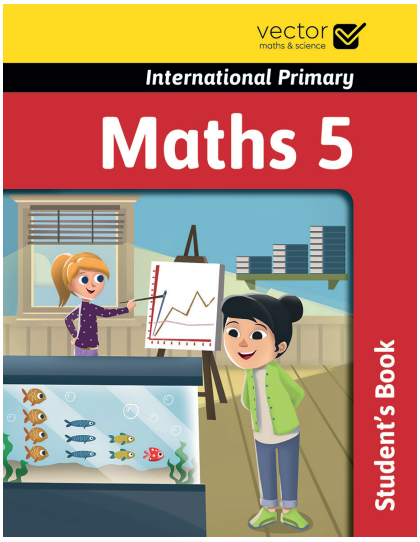
6 Levels | Levels 1-3 up to A1, 4-6 up to A2

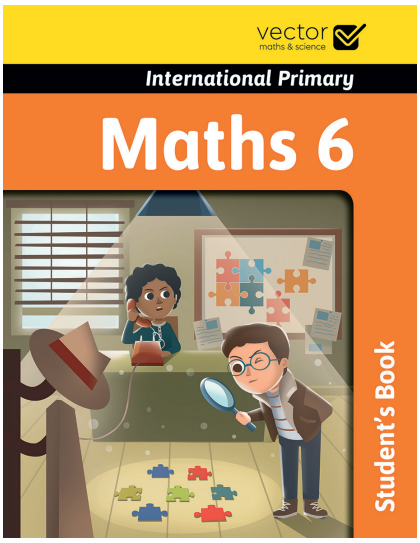


Components

- Student's Book
- Workbook
- Teacher's Book
- Workbook Teacher's Edition
- Teacher's Resource CD-ROM





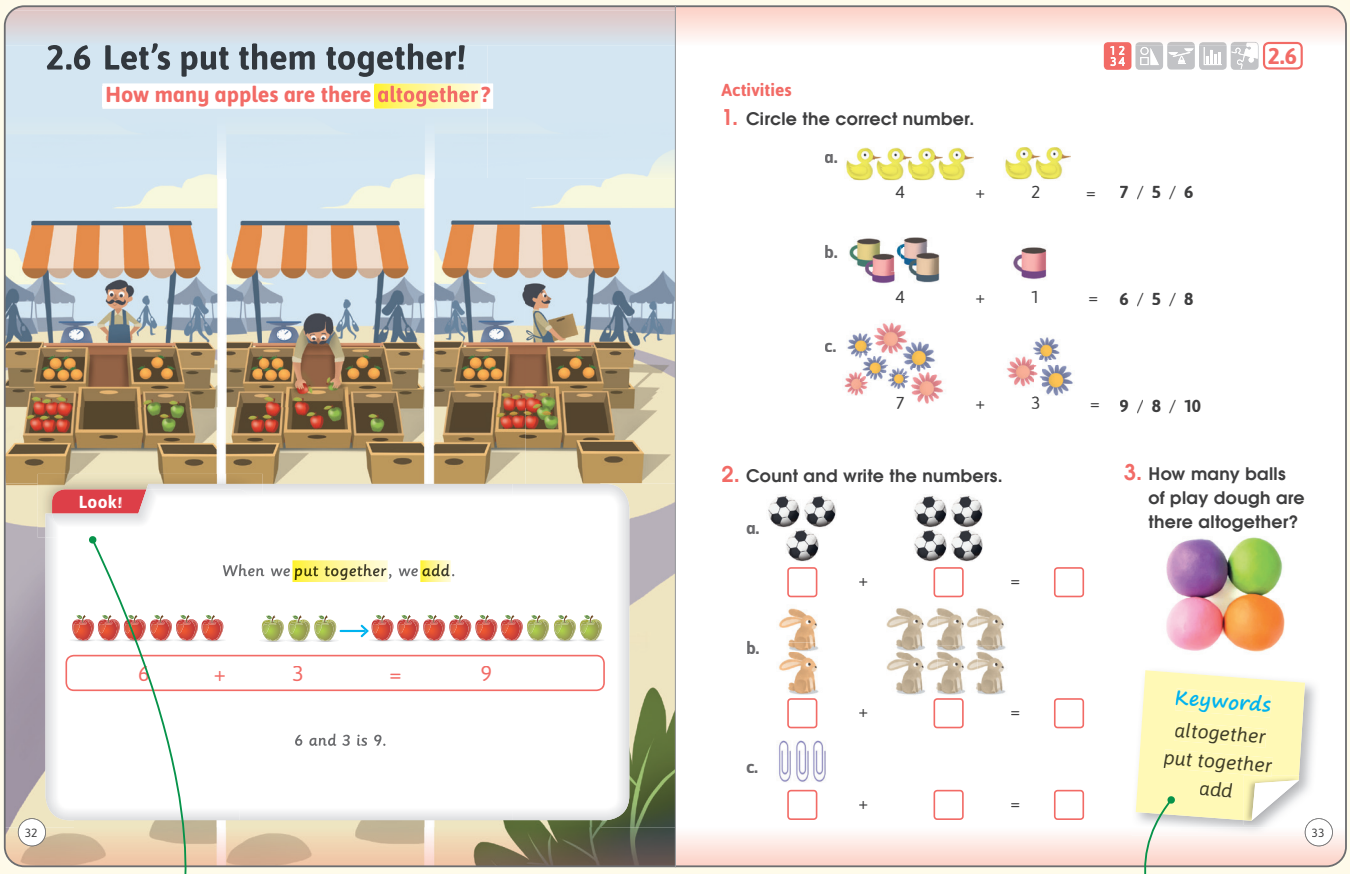


FOR TEACHERS:

- specific learning objectives for each lesson
- consistency of the mathematical content throughout the series
- unit maps at the beginning of each unit that provide well-organised information about the mathematical content of each lesson as well as students' prior knowledge
- list of possible common student preconceptions
- cross-curriculum links
- extensive step-by-step lesson plans for all lessons and the review section
- thought-provoking questions that involve higher-level thinking to enrich the lesson content and trigger critical thinking
- differentiated activities for students of basic or advanced performance
- brief description of games, riddles, puzzles and cross-curricular activities
- EAL (English as an Additional Language) support
- review and assessment pages for each unit with detailed guidelines on how to approach and carry out each activity
- keys provided for all the activities
- safety warnings and guidelines
- reminders to facilitate the teaching procedure
- resources such as Resource Sheets and Worksheets to support comprehension and extension of knowledge (provided in the Teacher's Resource CD-ROM)

Maths

International Primary • Sample Pages



2.6 Let's put them together!

How many apples are there altogether?

Look!

When we put together, we add.

6 + 3 = 9

6 and 3 is 9.

32

Activities

1. Circle the correct number.

a. 4 + 2 = 7 / 5 / 6

b. 4 + 1 = 6 / 5 / 8

c. 7 + 3 = 9 / 8 / 10

2. Count and write the numbers.

a. + =

b. + =

c. + =

3. How many balls of play dough are there altogether?

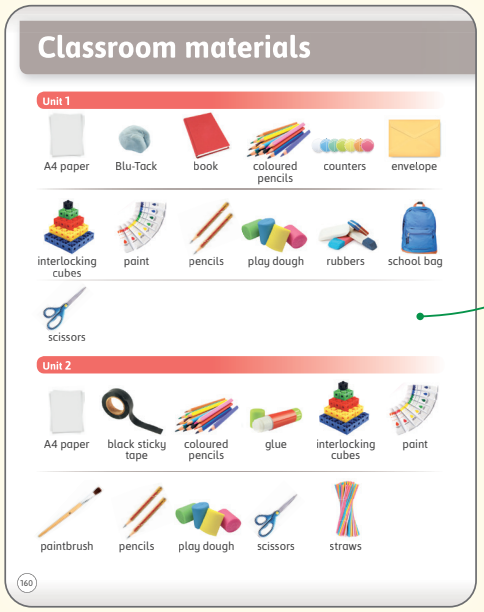
Keywords
altogether
put together
add

33

theory section

Maths 1, Student's Book

a list with keywords



Classroom materials

Unit 1

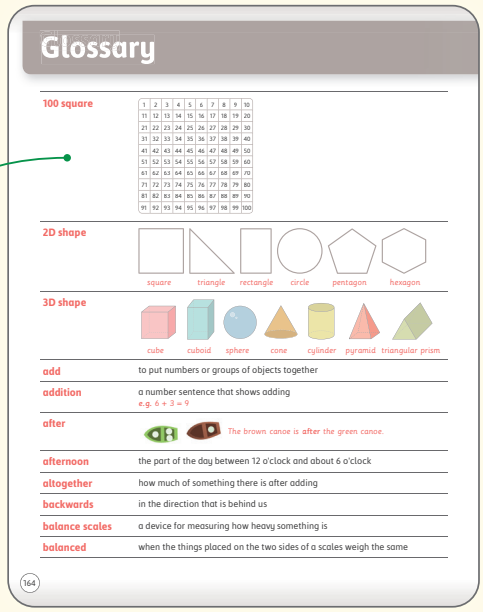
A4 paper, Blu-Tack, book, coloured pencils, counters, envelope, interlocking cubes, paint, pencils, play dough, rubbers, school bag, scissors

Unit 2

A4 paper, black sticky tape, coloured pencils, glue, interlocking cubes, paint, paintbrush, pencils, play dough, scissors, straws

160

detailed presentation of the classroom materials and the glossary



Glossary

100 square

2D shape: square, triangle, rectangle, circle, pentagon, hexagon

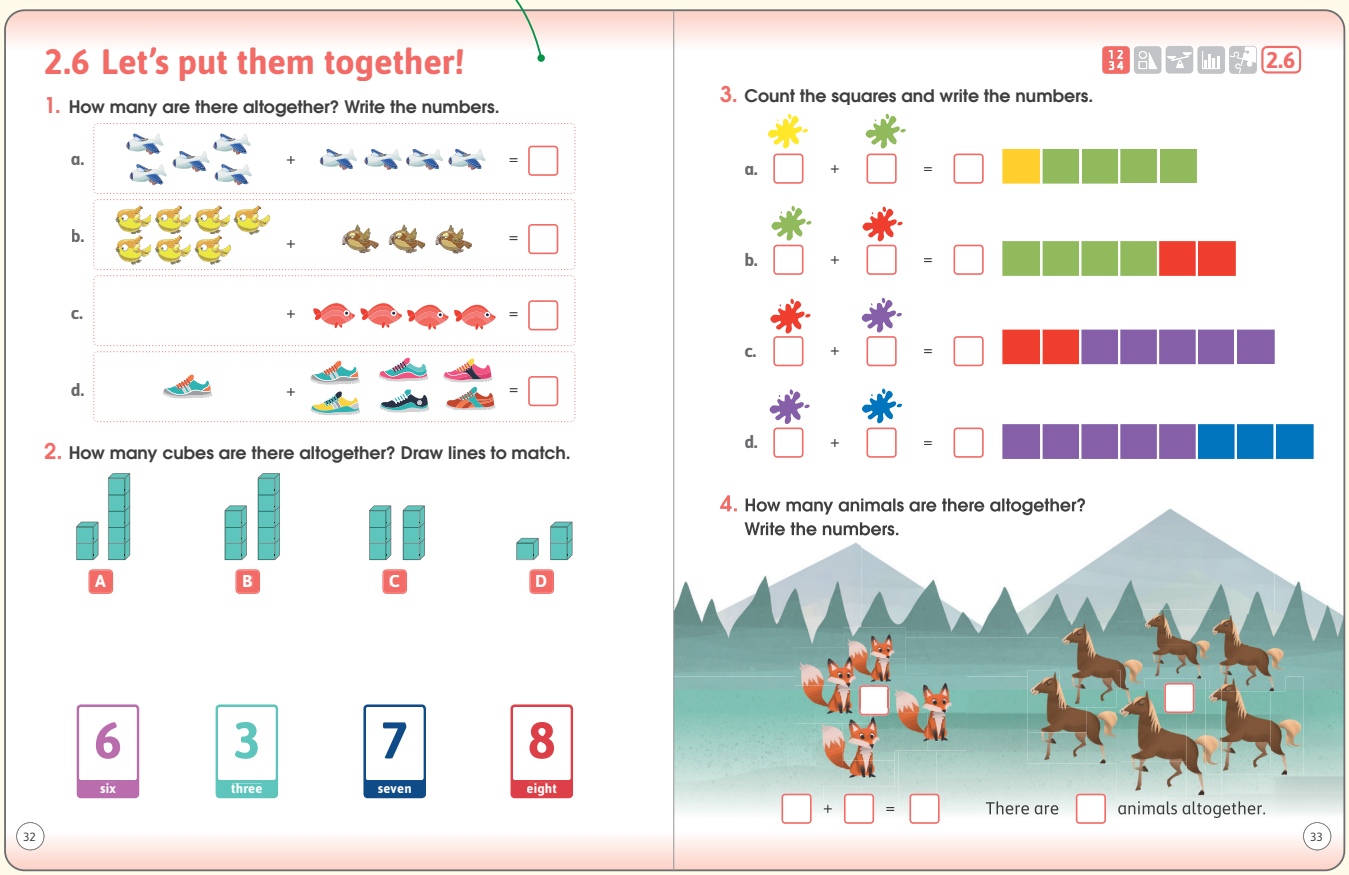
3D shape: cube, cuboid, sphere, cone, cylinder, pyramid, triangular prism

add	to put numbers or groups of objects together
addition	a number sentence that shows adding e.g. 6 + 3 = 9
after	The brown canoe is after the green canoe.
afternoon	the part of the day between 12 o'clock and about 6 o'clock
altogether	how much of something there is after adding
backwards	in the direction that is behind us
balance scales	a device for measuring how heavy something is
balanced	when the things placed on the two sides of a scales weigh the same

164

Maths 1, Student's Book

extra activities for practice in the Workbook



2.6 Let's put them together!

1. How many are there altogether? Write the numbers.

a. + = ☐

b. + = ☐

c. + = ☐

d. + = ☐

2. How many cubes are there altogether? Draw lines to match.

A B C D

6 six | 3 three | 7 seven | 8 eight

32

2.6

3. Count the squares and write the numbers.

a. ☐ + ☐ = ☐

b. ☐ + ☐ = ☐

c. ☐ + ☐ = ☐

d. ☐ + ☐ = ☐

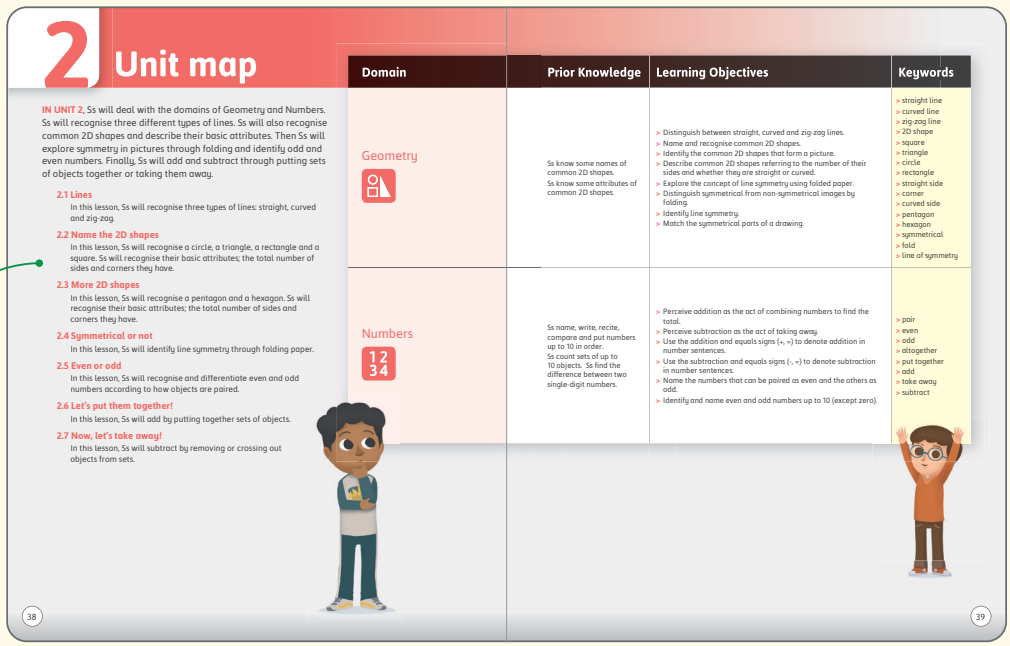
4. How many animals are there altogether? Write the numbers.

☐ + ☐ = ☐ There are ☐ animals altogether.

33

Maths 1, Workbook

a brief introduction to each unit



2 Unit map

IN UNIT 2, Ss will deal with the domains of Geometry and Numbers. Ss will recognise three different types of lines. Ss will also recognise common 2D shapes and describe their basic attributes. Then Ss will explore symmetry in pictures through folding and identify odd and even numbers. Finally, Ss will add and subtract through putting sets of objects together or taking them away.

2.1 Lines
In this lesson, Ss will recognise three types of lines: straight, curved and zig-zag.

2.2 Name the 2D shapes
In this lesson, Ss will recognise a circle, a triangle, a rectangle and a square. Ss will recognise their basic attributes; the total number of sides and corners they have.

2.3 More 2D shapes
In this lesson, Ss will recognise a pentagon and a hexagon. Ss will recognise their basic attributes; the total number of sides and corners they have.

2.4 Symmetrical or not
In this lesson, Ss will identify line symmetry through folding paper.

2.5 Even or odd
In this lesson, Ss will recognise and differentiate even and odd numbers according to how objects are paired.

2.6 Let's put them together!
In this lesson, Ss will add by putting together sets of objects.

2.7 Now, let's take away!
In this lesson, Ss will subtract by removing or crossing out objects from sets.

Domain	Prior Knowledge	Learning Objectives	Keywords
Geometry	Ss know some names of common 2D shapes. Ss know some attributes of common 2D shapes.	> Distinguish between straight, curved and zig-zag lines. > Name and recognise common 2D shapes. > Identify the common 2D shapes that form a picture. > Describe common 2D shapes referring to the number of their sides and whether they are straight or curved. > Explore the concept of line symmetry using folded paper. > Distinguish symmetrical from non-symmetrical images by folding. > Identify line symmetry. > Match the symmetrical parts of a drawing.	> straight line > curved line > zig-zag line > 2D shape > square > triangle > circle > rectangle > straight side > corner > curved side > pentagon > hexagon > symmetrical > fold > line of symmetry
Numbers	Ss name, write, recite, compare and put numbers up to 10 in order. Ss count sets of up to 10 objects. Ss find the difference between two single-digit numbers.	> Perceive addition as the act of combining numbers to find the total. > Perceive subtraction as the act of taking away. > Use the addition and equals signs (+, =) to denote addition in number sentences. > Use the subtraction and equals signs (-, =) to denote subtraction in number sentences. > Name the numbers that can be paired as even and the others as odd. > Identify and name even and odd numbers up to 10 (except zero).	> pair > even > odd > altogether > put together > add > take away > subtract

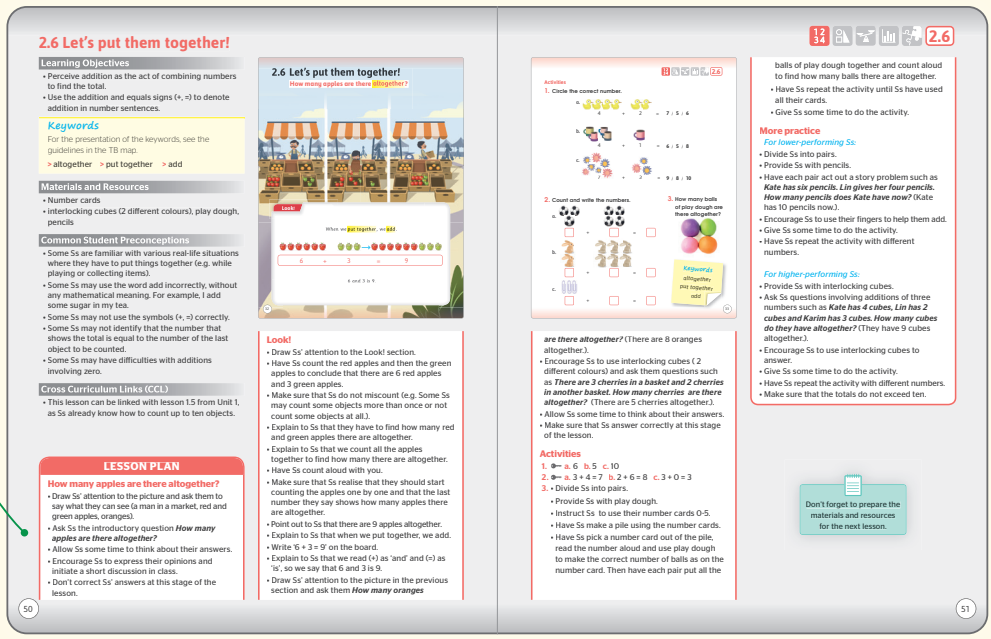
38 39

Maths 1, Teacher's Book

Maths

International Primary • Sample Pages

detailed and step-by-step lesson plans



2.6 Let's put them together!

Learning Objectives
- Perceive addition as the act of combining numbers to find the total.
- Use the addition and equals signs (+, =) to denote addition in number sentences.

Keywords
For the presentation of the keywords, see the guidelines in the TB map.
> altogether > put together > add

Materials and Resources
- Number cards
- interlocking cubes (2 different colours), play dough, pencils

Common Student Preconceptions
- Some Ss are familiar with various real-life situations where they have to put things together (e.g. while playing or collecting items).
- Some Ss may use the word add incorrectly, without any mathematical meaning. For example, I add some sugar in my tea.
- Some Ss may not use the symbols (+, =) correctly.
- Some Ss may not identify that the number that shows the total is equal to the number of the last object to be counted.
- Some Ss may have difficulties with additions involving zero.

Cross Curriculum Links (CCL)
- This lesson can be linked with lesson 1.5 from Unit 1, as Ss already know how to count up to ten objects.

LESSON PLAN

How many apples are there altogether?
- Draw Ss' attention to the picture and ask them to say what they can see (a man in a market, red and green apples, oranges).
- Ask Ss the introductory question ***How many apples are there altogether?***
- Allow Ss some time to think about their answers.
- Encourage Ss to express their opinions and initiate a short discussion in class.
- Don't correct Ss' answers at this stage of the lesson.

Look!
- Draw Ss' attention to the Look! section.
- Have Ss count the red apples and then the green apples to conclude that there are 6 red apples and 3 green apples.
- Make sure that Ss do not miscount (e.g. Some Ss may count some objects more than once or not count some objects at all.).
- Explain to Ss that they have to find how many red and green apples there are altogether.
- Explain to Ss that we count all the apples together to find how many there are altogether.
- Have Ss count aloud with you.
- Make sure that Ss realise that they should start counting the apples one by one and that the last number they say shows how many apples there are altogether.
- Point out to Ss that there are 9 apples altogether.
- Explain to Ss that when we put together, we add.
- Write '6 + 3 = 9' on the board.
- Explain to Ss that we read (+) as 'and' and (=) as 'is', so we say that 6 and 3 is 9.
- Draw Ss' attention to the picture in the previous section and ask them ***How many oranges are there altogether?*** (There are 8 oranges altogether.).
- Encourage Ss to use interlocking cubes (2 different colours) and ask them questions such as ***There are 3 cherries in a basket and 2 cherries in another basket. How many cherries are there altogether?*** (There are 5 cherries altogether.).
- Allow Ss some time to think about their answers.
- Make sure that Ss answer correctly at this stage of the lesson.

Activities
1. a. 6 b. 5 c. 10
2. a. 3 + 4 = 7 b. 2 + 6 = 8 c. 3 + 0 = 3
3. • Divide Ss into pairs.
   - Provide Ss with play dough.
   - Instruct Ss to use their number cards 0-5.
   - Have Ss make a pile using the number cards.
   - Have Ss pick a number card out of the pile, read the number aloud and use play dough to make the correct number of balls as on the number card. Then have each pair put all the balls of play dough together and count aloud to find how many balls there are altogether.
   - Have Ss repeat the activity until Ss have used all their cards.
   - Give Ss some time to do the activity.

More practice

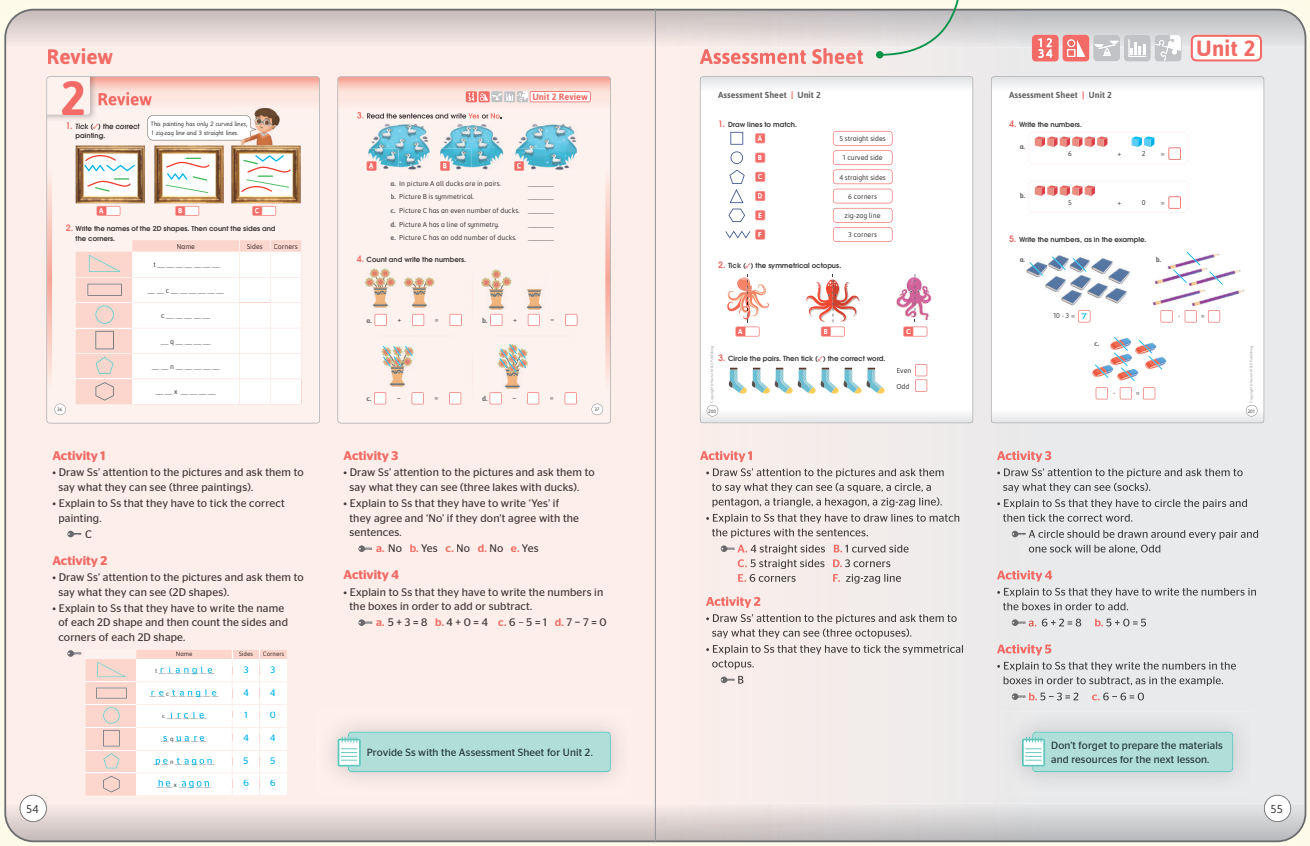
For lower-performing Ss:
- Divide Ss into pairs.
- Provide Ss with pencils.
- Have each pair act out a story problem such as ***Kate has six pencils. Lin gives her four pencils. How many pencils does Kate have now?*** (Kate has 10 pencils now.).
- Encourage Ss to use their fingers to help them add.
- Give Ss some time to do the activity.
- Have Ss repeat the activity with different numbers.

For higher-performing Ss:
- Provide Ss with interlocking cubes.
- Ask Ss questions involving additions of three numbers such as ***Kate has 4 cubes, Lin has 2 cubes and Karim has 3 cubes. How many cubes do they have altogether?*** (They have 9 cubes altogether.).
- Encourage Ss to use interlocking cubes to answer.
- Give Ss some time to do the activity.
- Have Ss repeat the activity with different numbers.
- Make sure that the totals do not exceed ten.

Don't forget to prepare the materials and resources for the next lesson.

Maths 1, Teacher's Book

assessment pages to help teachers assess students' acquired knowledge



Review

2 Review

1. Tick (✓) the correct painting.
   This painting has only 2 curved lines, 1 zig-zag line and 3 straight lines.
2. Write the names of the 2D shapes. Then count the sides and the corners.

	Name	Sides	Corners
	t_____		
	___c_____		
	c_____		
	___q_____		
	___n_____		
	___x_____		

Unit 2 Review

3. Read the sentences and write Yes or No.
   a. In picture A all ducks are in pairs. _____
   b. Picture B is symmetrical. _____
   c. Picture C has an even number of ducks. _____
   d. Picture A has a line of symmetry. _____
   e. Picture C has an odd number of ducks. _____
4. Count and write the numbers.

Activity 1
- Draw Ss' attention to the pictures and ask them to say what they can see (three paintings).
- Explain to Ss that they have to tick the correct painting.
  - C

Activity 2
- Draw Ss' attention to the pictures and ask them to say what they can see (2D shapes).
- Explain to Ss that they have to write the name of each 2D shape and then count the sides and corners of each 2D shape.

	Name	Sides	Corners
	triangle	3	3
	rectangle	4	4
	circle	1	0
	square	4	4
	pentagon	5	5
	hexagon	6	6

Activity 3
- Draw Ss' attention to the pictures and ask them to say what they can see (three lakes with ducks).
- Explain to Ss that they have to write 'Yes' if they agree and 'No' if they don't agree with the sentences.
  - a. No b. Yes c. No d. No e. Yes

Activity 4
- Explain to Ss that they have to write the numbers in the boxes in order to add or subtract.
  - a. 5 + 3 = 8 b. 4 + 0 = 4 c. 6 − 5 = 1 d. 7 − 7 = 0

Provide Ss with the Assessment Sheet for Unit 2.

Assessment Sheet

Unit 2

Assessment Sheet | Unit 2

1. Draw lines to match.
   A – 5 straight sides
   B – 1 curved side
   C – 4 straight sides
   D – 6 corners
   E – zig-zag line
   F – 3 corners
2. Tick (✓) the symmetrical octopus.
3. Circle the pairs. Then tick (✓) the correct word.
   Even ☐ Odd ☐

Assessment Sheet | Unit 2

4. Write the numbers.
   a. 6 + 2 = ☐
   b. 5 + 0 = ☐
5. Write the numbers, as in the example.
   a. 10 - 3 = 7
   b. ☐ - ☐ = ☐
   c. ☐ - ☐ = ☐

Activity 1
- Draw Ss' attention to the pictures and ask them to say what they can see (a square, a circle, a pentagon, a triangle, a hexagon, a zig-zag line).
- Explain to Ss that they have to draw lines to match the pictures with the sentences.
  - A. 4 straight sides B. 1 curved side
    C. 5 straight sides D. 3 corners
    E. 6 corners F. zig-zag line

Activity 2
- Draw Ss' attention to the pictures and ask them to say what they can see (three octopuses).
- Explain to Ss that they have to tick the symmetrical octopus.
  - B

Activity 3
- Draw Ss' attention to the picture and ask them to say what they can see (socks).
- Explain to Ss that they have to circle the pairs and then tick the correct word.
  - A circle should be drawn around every pair and one sock will be alone, Odd

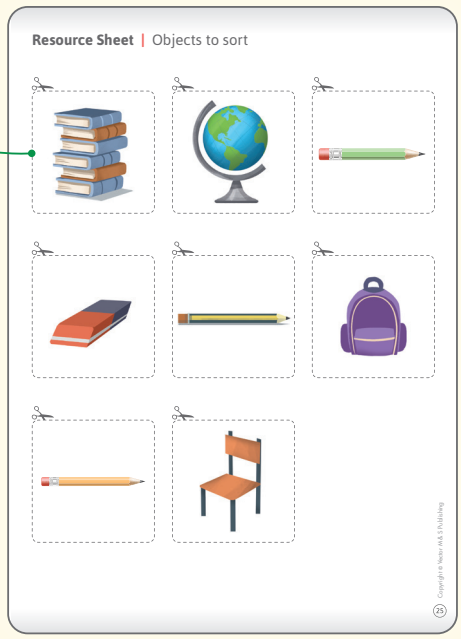
Activity 4
- Explain to Ss that they have to write the numbers in the boxes in order to add.
  - a. 6 + 2 = 8 b. 5 + 0 = 5

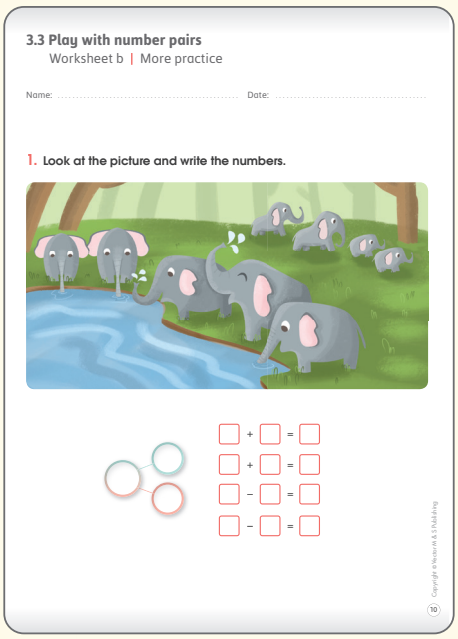
Activity 5
- Explain to Ss that they write the numbers in the boxes in order to subtract, as in the example.
  - b. 5 − 3 = 2 c. 6 − 6 = 0

Don't forget to prepare the materials and resources for the next lesson.

Maths 1, Teacher's Book

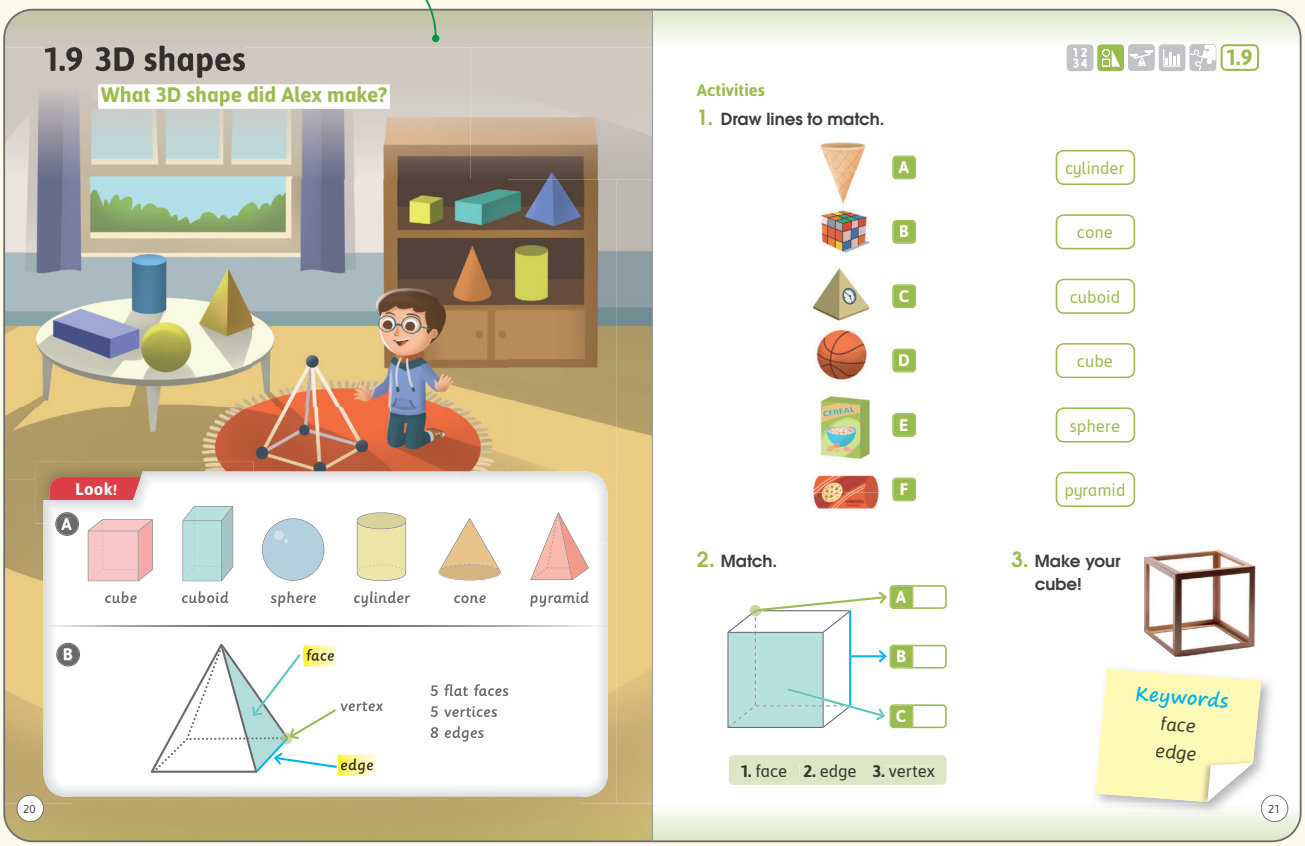
extra resources are provided to support learning comprehension





Maths 1, Teacher's Resource CD-ROM

high quality illustrations



Maths 2, Student's Book

Subjects

Biology

Chemistry

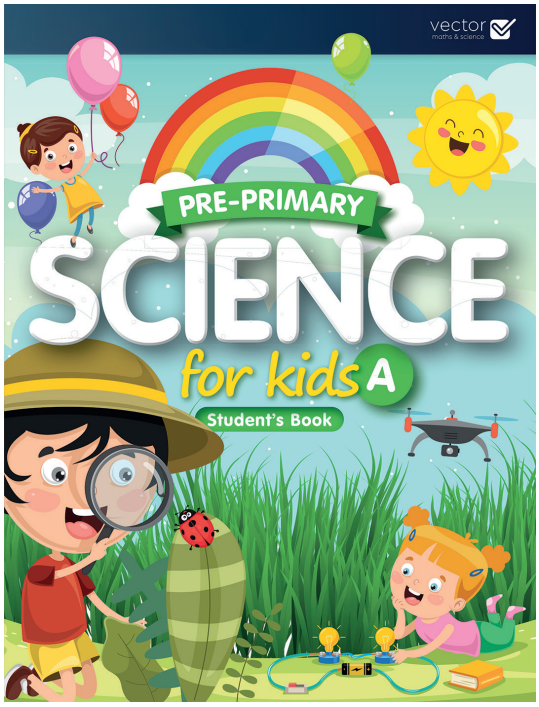
Physics

Science

CEFR	A1		A2	
LEVELS	A1.1	A1.2	A2.1	A2.2
Science for Kids (Pre-Primary) p. 28				
Science (Primary) p. 34				

Science for Kids

Pre-Primary



Science for Kids is a two-year course that introduces very young learners to the world of science. Through this course, students learn about themselves and the environment around them. The series places an emphasis on the observation of the environment and the dynamic of the dialogue. Through questions, our youngest scientists explore their everyday world and develop basic scientific thinking skills which they apply in various subject areas when they enter school.

Children are familiarised with basic scientific concepts, such as family, animals, plants, weather, and the human body.

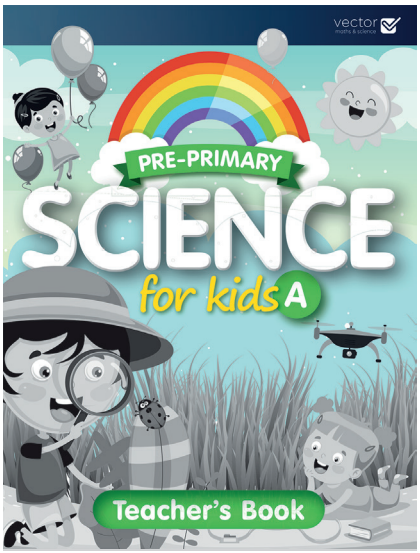
Components

- Student's Book
- Teacher's Book
- Teacher's Resource CD-ROM

Course features

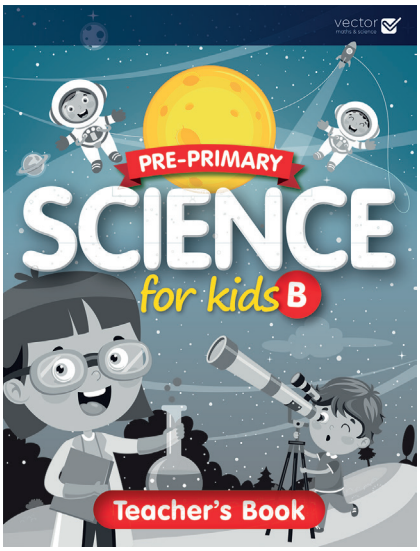
FOR STUDENTS:

- illustrated cover pages and vivid pictures that trigger the interest of young learners
- various activities that activate the thinking skills of young learners in a fun way
- extra activities and games to recycle and consolidate learning
- language support with the use of Resource Sheet pages
- self-evaluation section of everything learners were taught
- flashcards that help students understand the meaning of a word connected to a picture
- revision pages to refresh what students have learnt in each unit
- colour-in pages



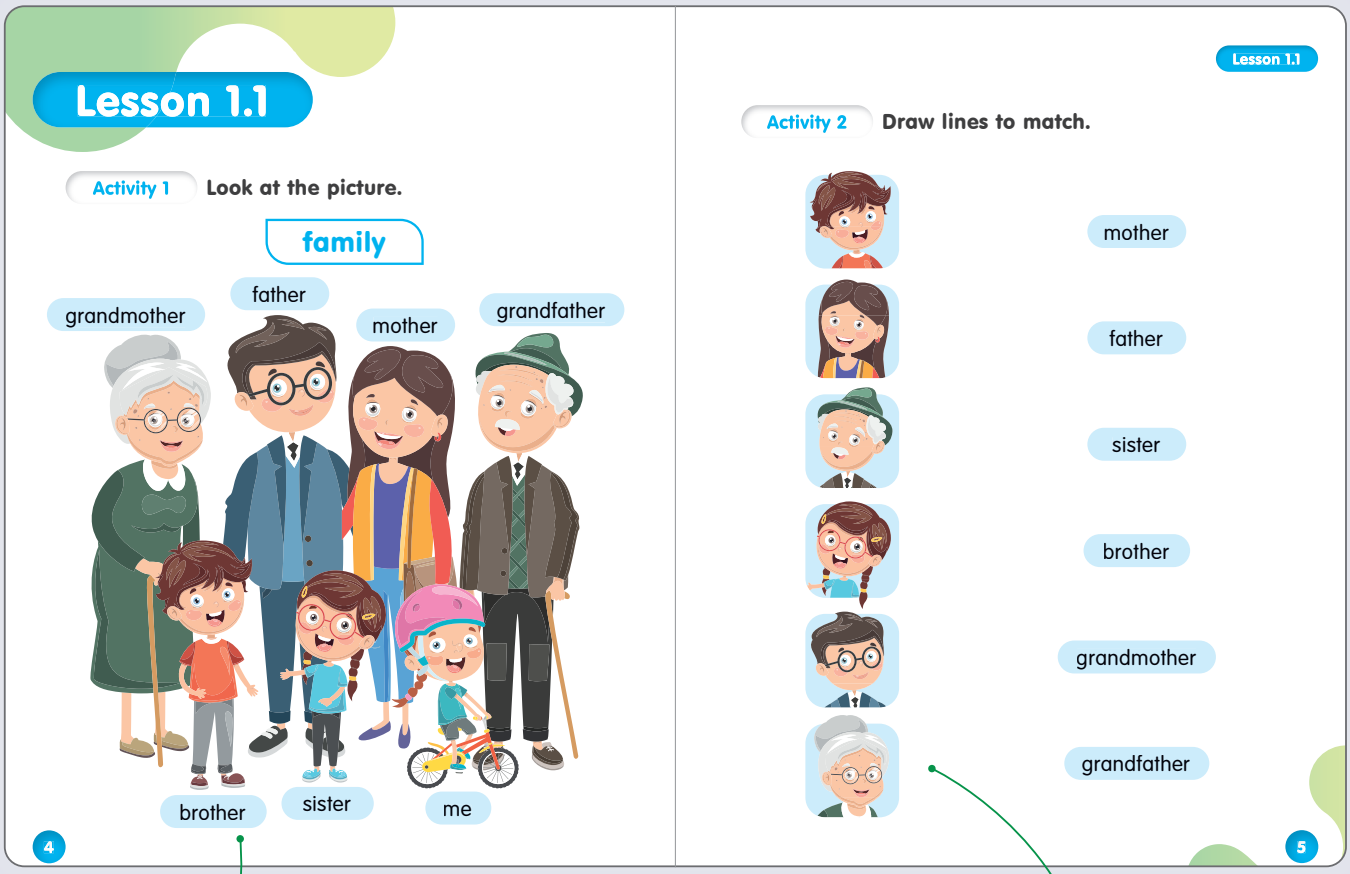
FOR TEACHERS:

- main learning objectives presented at the beginning of each unit
- subjects to spark students' interest
- step-by-step instructions for the teacher to follow
- revision on the vocabulary taught in each unit with the help of flashcards
- lists of the corresponding flashcards, resources and materials necessary for each unit
- crafts section related to the subject taught
- extra material (posters, additional Resource Sheets, etc.) for more practice
- key to all activities
- optional 'Special Day' activities connected with simple projects related to the theme of the unit



Science for Kids

Pre-Primary • Sample Pages



Lesson 1.1

Activity 1 Look at the picture.

family

grandmother father mother grandfather

brother sister me

4

Lesson 1.1

Activity 2 Draw lines to match.

mother

father

sister

brother

grandmother

grandfather

5

Science for Kids A, Student's Book

vivid pictures

simple activities

Lesson 1.3

Resource sheet

family

family family family

family family family

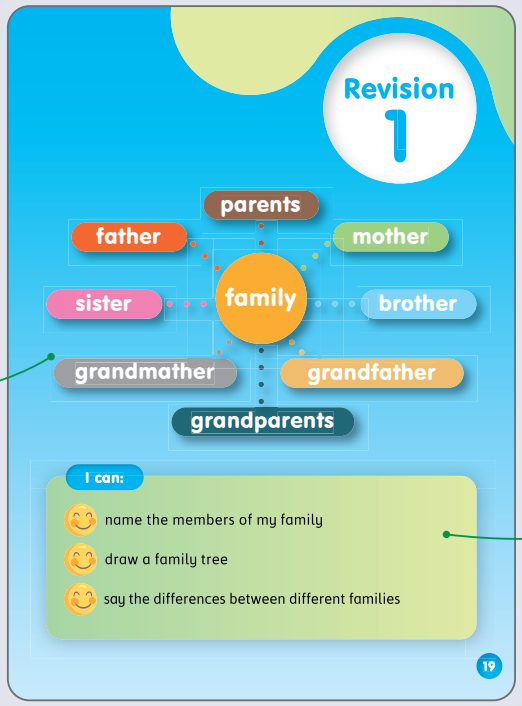
family family family

18

Science for Kids A, Student's Book

Resource Sheets for language support

mind maps that help in the revision of the important words

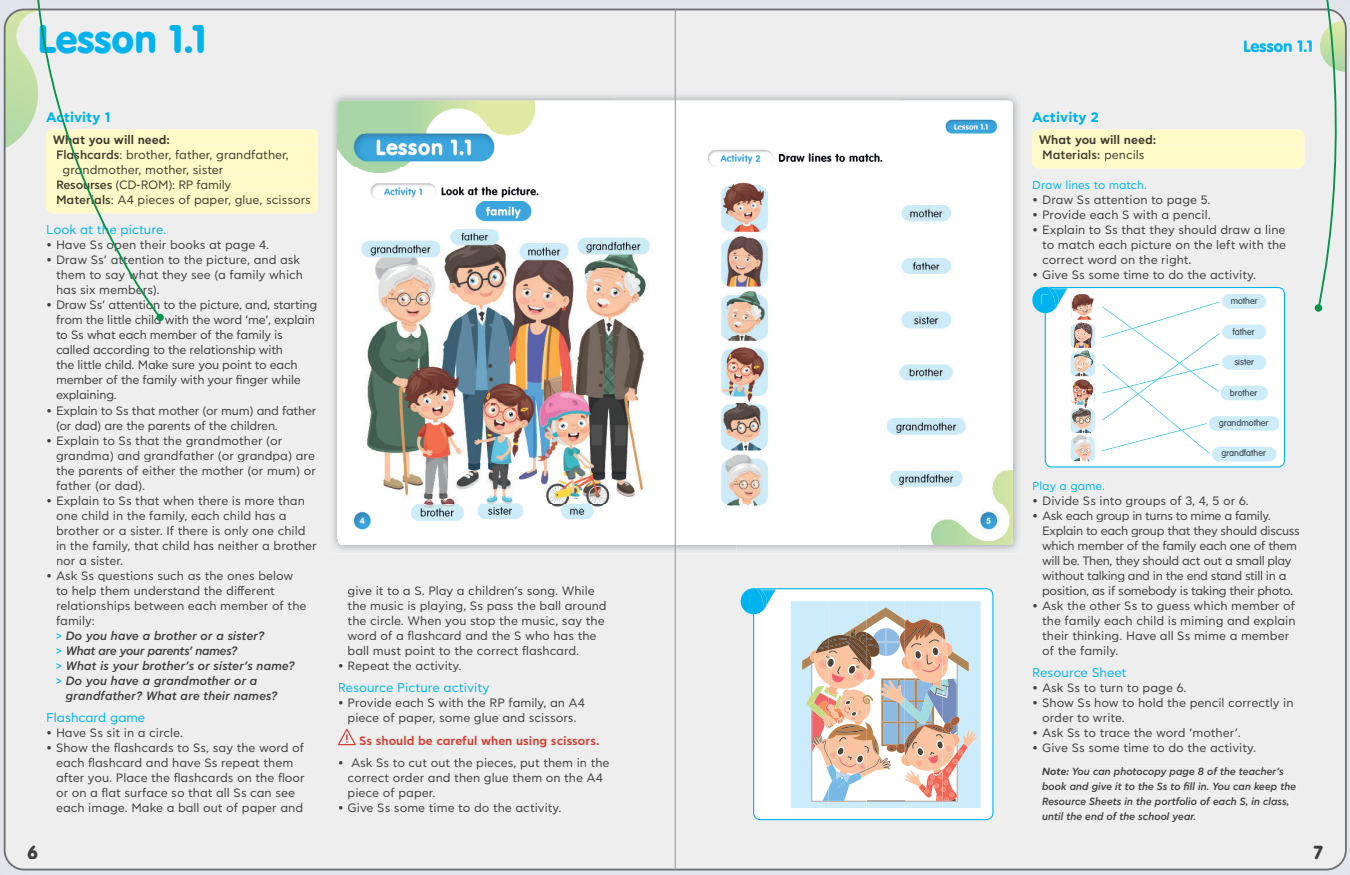


self evaluation section

Science for Kids A, Student's Book

detailed lesson plan

keys to all activities



Lesson 1.1

Activity 1

What you will need:
Flashcards: brother, father, grandfather, grandmother, mother, sister
Resources (CD-ROM): RP family
Materials: A4 pieces of paper, glue, scissors

Look at the picture.
- Have Ss open their books at page 4.
- Draw Ss' attention to the picture, and ask them to say what they see (a family which has six members).
- Draw Ss' attention to the picture, and, starting from the little child with the word 'me', explain to Ss what each member of the family is called according to the relationship with the little child. Make sure you point to each member of the family with your finger while explaining.
- Explain to Ss that mother (or mum) and father (or dad) are the parents of the children.
- Explain to Ss that the grandmother (or grandma) and grandfather (or grandpa) are the parents of either the mother (or mum) or father (or dad).
- Explain to Ss that when there is more than one child in the family, each child has a brother or a sister. If there is only one child in the family, that child has neither a brother nor a sister.
- Ask Ss questions such as the ones below to help them understand the different relationships between each member of the family:
  > *Do you have a brother or a sister?*
  > *What are your parents' names?*
  > *What is your brother's or sister's name?*
  > *Do you have a grandmother or a grandfather? What are their names?*

Flashcard game
- Have Ss sit in a circle.
- Show the flashcards to Ss, say the word of each flashcard and have Ss repeat them after you. Place the flashcards on the floor or on a flat surface so that all Ss can see each image. Make a ball out of paper and give it to a S. Play a children's song. While the music is playing, Ss pass the ball around the circle. When you stop the music, say the word of a flashcard and the S who has the ball must point to the correct flashcard.
- Repeat the activity.

Resource Picture activity
- Provide each S with the RP family, an A4 piece of paper, some glue and scissors.

⚠ **Ss should be careful when using scissors.**

- Ask Ss to cut out the pieces, put them in the correct order and then glue them on the A4 piece of paper.
- Give Ss some time to do the activity.

6

Lesson 1.1

Activity 1 Look at the picture.

family, father, grandmother, mother, grandfather, brother, sister, me

4

Lesson 1.1

Activity 2 Draw lines to match.

mother, father, sister, brother, grandmother, grandfather

5

Lesson 1.1

Activity 2

What you will need:
Materials: pencils

Draw lines to match.
- Draw Ss attention to page 5.
- Provide each S with a pencil.
- Explain to Ss that they should draw a line to match each picture on the left with the correct word on the right.
- Give Ss some time to do the activity.

Play a game.
- Divide Ss into groups of 3, 4, 5 or 6.
- Ask each group in turns to mime a family. Explain to each group that they should discuss which member of the family each one of them will be. Then, they should act out a small play without talking and in the end stand still in a position, as if somebody is taking their photo.
- Ask the other Ss to guess which member of the family each child is miming and explain their thinking. Have all Ss mime a member of the family.

Resource Sheet
- Ask Ss to turn to page 6.
- Show Ss how to hold the pencil correctly in order to write.
- Ask Ss to trace the word 'mother'.
- Give Ss some time to do the activity.

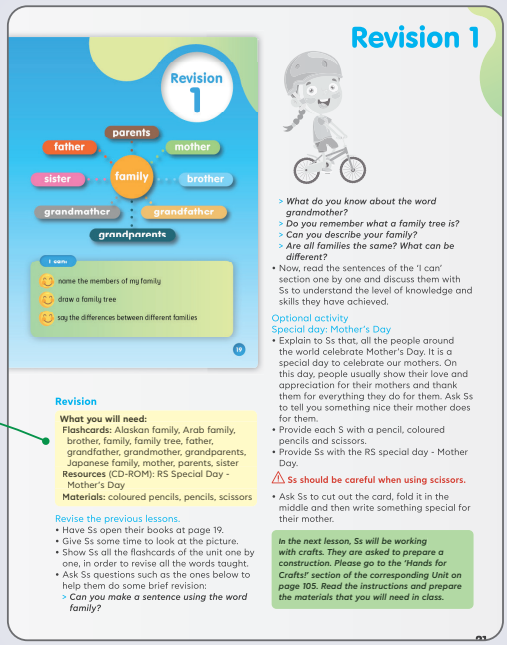
***Note:** You can photocopy page 8 of the teacher's book and give it to the Ss to fill in. You can keep the Resource Sheets in the portfolio of each S, in class, until the end of the school year.*

7

Science for Kids A, Teacher's Book

Science for Kids

Pre-Primary • Sample Pages



Revision 1

Revision 1

parents
father
mother
sister
family
brother
grandmather
grandfather
grandparents

I can:
- name the members of my family
- draw a family tree
- say the differences between different families

19

> What do you know about the word grandmother?
> Do you remember what a family tree is?
> Can you describe your family?
> Are all families the same? What can be different?

• Now, read the sentences of the 'I can' section one by one and discuss them with Ss to understand the level of knowledge and skills they have achieved.

Optional activity
Special day: Mother's Day
• Explain to Ss that, all the people around the world celebrate Mother's Day. It is a special day to celebrate our mothers. On this day, people usually show their love and appreciation for their mothers and thank them for everything they do for them. Ask Ss to tell you something nice their mother does for them.
• Provide each S with a pencil, coloured pencils and scissors.
• Provide Ss with the RS special day - Mother Day.

⚠ Ss should be careful when using scissors.

• Ask Ss to cut out the card, fold it in the middle and then write something special for their mother.

In the next lesson, Ss will be working with crafts. They are asked to prepare a construction. Please go to the 'Hands for Crafts!' section of the corresponding Unit on page 105. Read the instructions and prepare the materials that you will need in class.

Revision

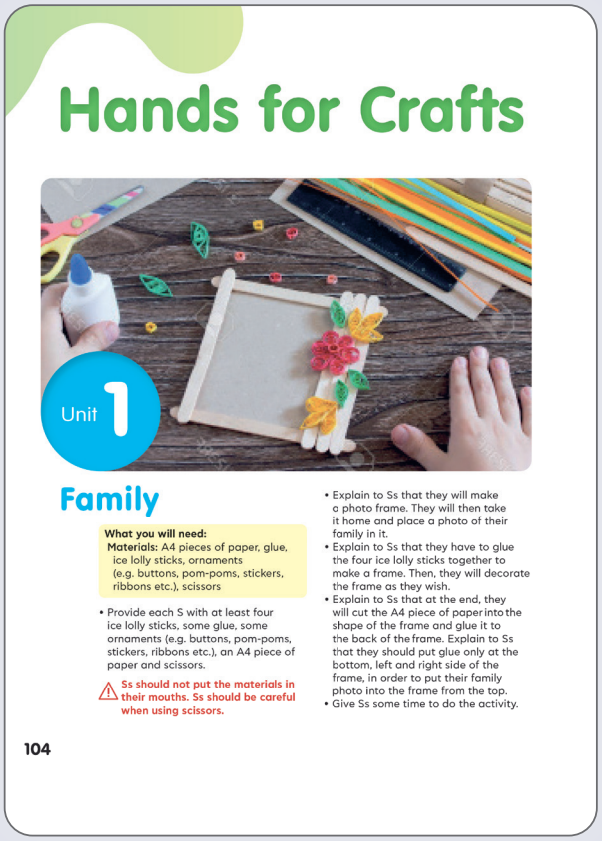
What you will need:
Flashcards: Alaskan family, Arab family, brother, family, family tree, father, grandfather, grandmother, grandparents, Japanese family, mother, parents, sister
Resources (CD-ROM): RS Special Day - Mother's Day
Materials: coloured pencils, pencils, scissors

Revise the previous lessons.
• Have Ss open their books at page 19.
• Give Ss some time to look at the picture.
• Show Ss all the flashcards of the unit one by one, in order to revise all the words taught.
• Ask Ss questions such as the ones below to help them do some brief revision:
> Can you make a sentence using the word family?

revision pages to help Ss revise the important words and concepts of the unit

Science for Kids A, Teacher's Book

Cut-out pictures related to the concept taught



Hands for Crafts

Unit 1

Family

What you will need:
Materials: A4 pieces of paper, glue, ice lolly sticks, ornaments (e.g. buttons, pom-poms, stickers, ribbons etc.), scissors

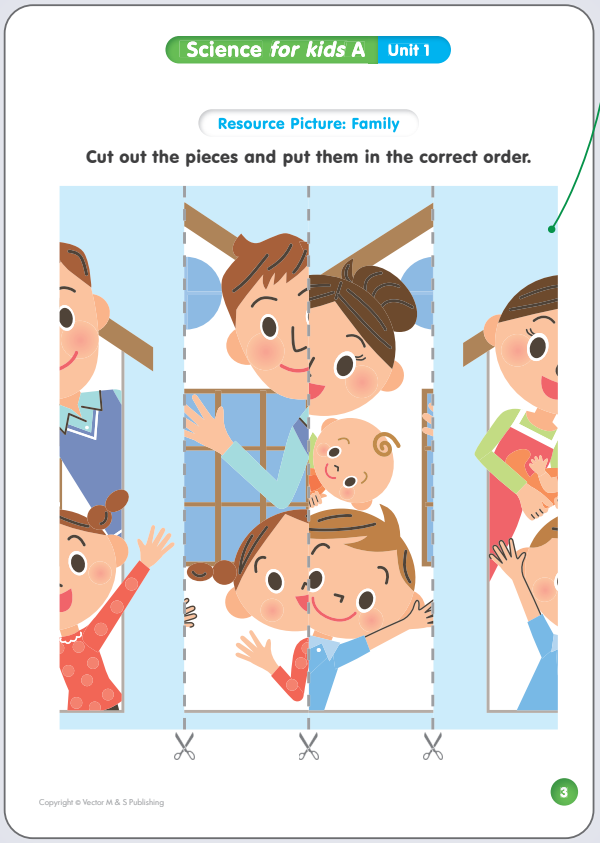
• Provide each S with at least four ice lolly sticks, some glue, some ornaments (e.g. buttons, pom-poms, stickers, ribbons etc.), an A4 piece of paper and scissors.

⚠ Ss should not put the materials in their mouths. Ss should be careful when using scissors.

• Explain to Ss that they will make a photo frame. They will then take it home and place a photo of their family in it.
• Explain to Ss that they have to glue the four ice lolly sticks together to make a frame. Then, they will decorate the frame as they wish.
• Explain to Ss that at the end, they will cut the A4 piece of paper into the shape of the frame and glue it to the back of the frame. Explain to Ss that they should put glue only at the bottom, left and right side of the frame, in order to put their family photo into the frame from the top.
• Give Ss some time to do the activity.

104

Science for Kids A, Teacher's Book



Science for kids A Unit 1

Resource Picture: Family

Cut out the pieces and put them in the correct order.

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3

Science for Kids A, Teacher's Resource CD-ROM

flashcards

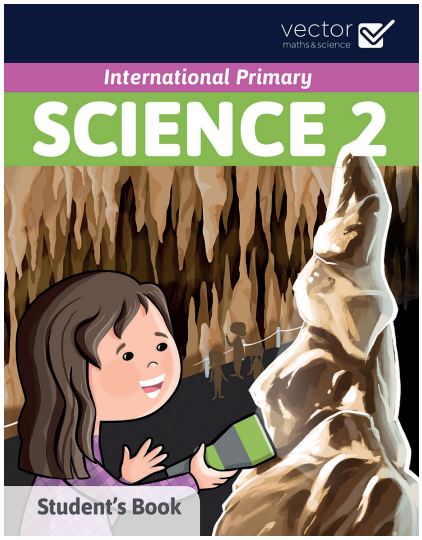
Science for Kids A, Teacher's Resource CD-ROM

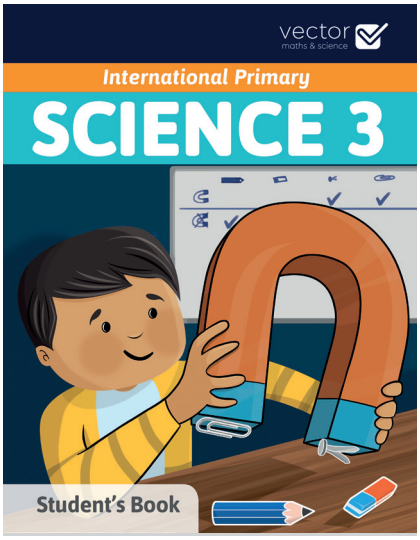
optional 'Special Day' activities

Science for Kids A, Teacher's Resource CD-ROM

Science

International Primary





Vector IPS* is a brand-new exciting series designed to engage students, spark their interest in scientific knowledge and equip them with the skills necessary to excel in the modern, ever-changing world.

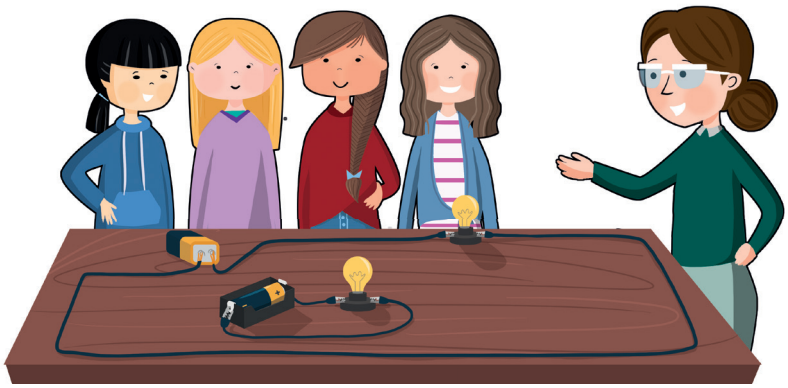
Vector IPS* is an innovative six-level course for primary students. The framework is designed to provide a comprehensive set of progressive learning objectives for Science and aims to systematically develop practical skills through scientific enquiry. These skills are useful in everyday life and are not limited to Science lessons. The course is organised through the topic-based approach, thus allowing learners to investigate a variety of scientific topics in depth and encouraging them to ask questions, predict, observe, explore, explain, practise, and assess their understanding and abilities.

*International Primary Science

Course features

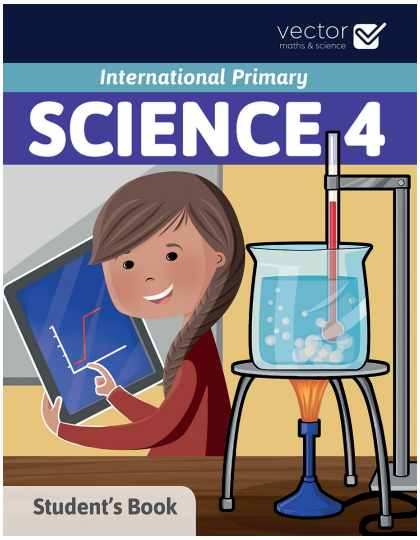
FOR STUDENTS:

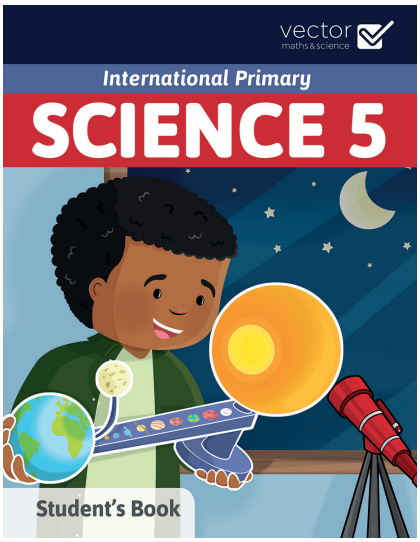
- age-appropriate learning objectives
- an integrated approach to the gradual development of scientific enquiry skills
- lessons based on the teaching model of Engage, Explore, Explain, Elaborate, Evaluate (5E Model)
- a special emphasis on vocabulary building and EAL (English as an Additional Language) support
- a focus on scientific literacy and literacy support
- glossary with definitions and pictures
- a section with the necessary materials for each unit
- resources, such as Resource Sheets and Resource Pictures
- a 'Work like a scientist' section with the necessary scientific methods, procedures and tools for each level
- activities encouraging critical thinking and personal response
- independent exploration and lab activities
- homework activities
- end-of-unit review pages
- colourful, high-quality pictures and visuals that assist scientific knowledge
- questions and activities that challenge students to extend or expand their knowledge into scientific concepts
- extension of topics and ideas in real-life contexts
- unit maps which organise and present the scientific concepts of each unit

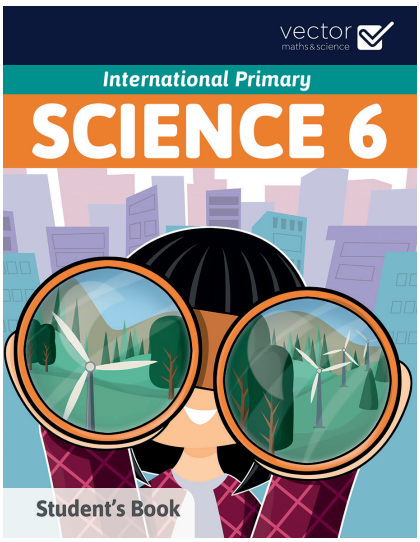


Components

- Student's Book
- Workbook
- Teacher's Book
- Teacher's Resource CD-ROM





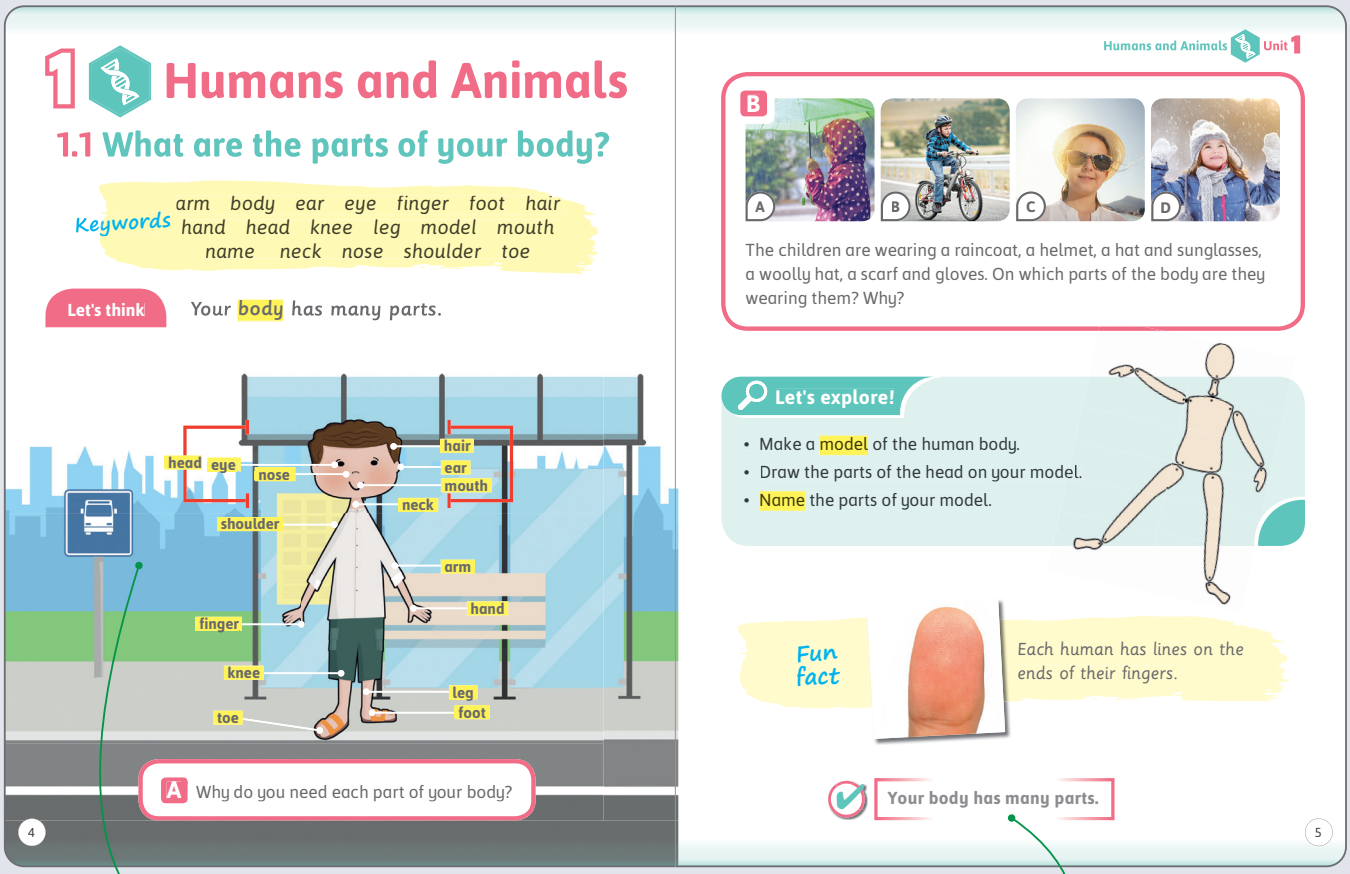


FOR TEACHERS:

- learning objectives identified and scientific enquiry skills developed in each lesson
- scientific background information
- lists of student preconceptions and guidance for detecting and reconstructing them
- extensive and detailed lesson plans for all lessons and review sections; ideas and suggestions for teaching scientific enquiry; as well as differentiated activities and questions for students of basic or advanced performance
- guidance for practical activities
- EAL (English as an Additional Language) support
- a focus on higher order thinking questions according to Bloom's taxonomy
- safety warnings and guidelines
- continuous assessment support by various means
- reminders to facilitate the teaching procedure
- resources, such as Worksheets, Resource Sheets, Resource Pictures, Language Focus activities and Assessment Sheets (these resources are also provided in the Teacher's Resource CD-ROM)
- the keys for all the questions and activities in the Student's Book and the Workbook, as well as the keys for the Worksheets, the Language Focus activities and the Assessment Sheets
- cross-curriculum links
- all sections of the Student's Book are provided for teachers in an easy-to-access form
- optional activities making the lesson more enjoyable and giving further practice

Science

International Primary • Sample Pages



1 Humans and Animals

1.1 What are the parts of your body?

Keywords: arm body ear eye finger foot hair hand head knee leg model mouth name neck nose shoulder toe

Let's think: Your body has many parts.

A Why do you need each part of your body?

Humans and Animals Unit 1

B

The children are wearing a raincoat, a helmet, a hat and sunglasses, a woolly hat, a scarf and gloves. On which parts of the body are they wearing them? Why?

Let's explore!

- Make a model of the human body.
- Draw the parts of the head on your model.
- Name the parts of your model.

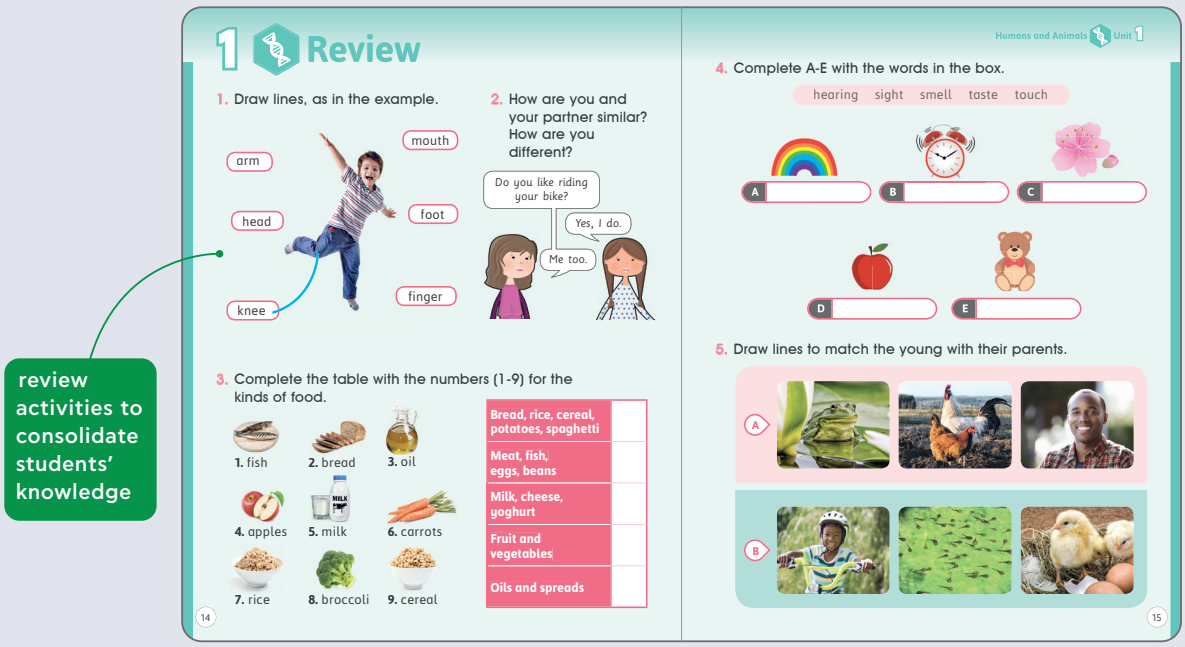
Fun fact: Each human has lines on the ends of their fingers.

Your body has many parts.

visuals and high-resolution pictures

Science 1, Student's Book

important concepts and ideas presented in the lesson



1 Review

1. Draw lines, as in the example.

2. How are you and your partner similar? How are you different?

3. Complete the table with the numbers (1-9) for the kinds of food.

4. Complete A-E with the words in the box.

5. Draw lines to match the young with their parents.

review activities to consolidate students' knowledge

Science 1, Student's Book

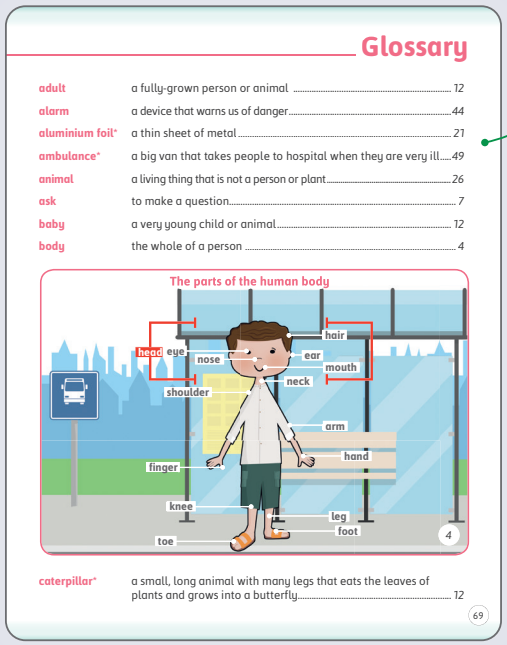
glossary with definitions and pictures

Materials

Unit 1 Humans and Animals

banana, cardboard box, cinnamon sticks, coloured pencils, glue, onions, paper fasteners, pebbles, pencils, rice, scissors

64



Glossary

adult	a fully-grown person or animal	12
alarm	a device that warns us of danger	44
aluminium foil*	a thin sheet of metal	21
ambulance*	a big van that takes people to hospital when they are very ill	49
animal	a living thing that is not a person or plant	26
ask	to make a question	7
baby	a very young child or animal	12
body	the whole of a person	4

The parts of the human body

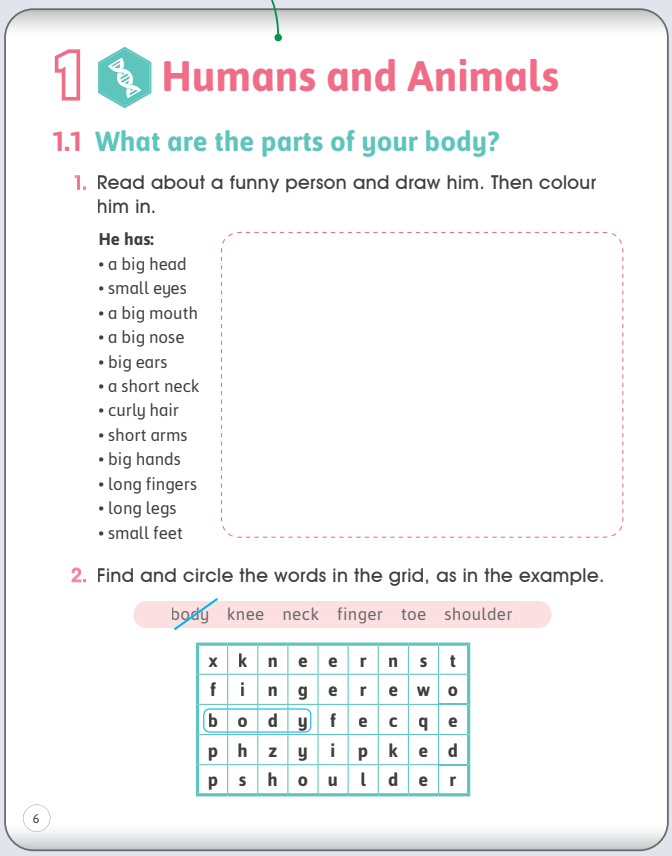
head, eye, nose, hair, ear, mouth, neck, shoulder, arm, hand, finger, knee, leg, foot, toe

caterpillar*	a small, long animal with many legs that eats the leaves of plants and grows into a butterfly	12

69

Science 1, Student's Book

extra activities for practice



1 Humans and Animals

1.1 What are the parts of your body?

1. Read about a funny person and draw him. Then colour him in.

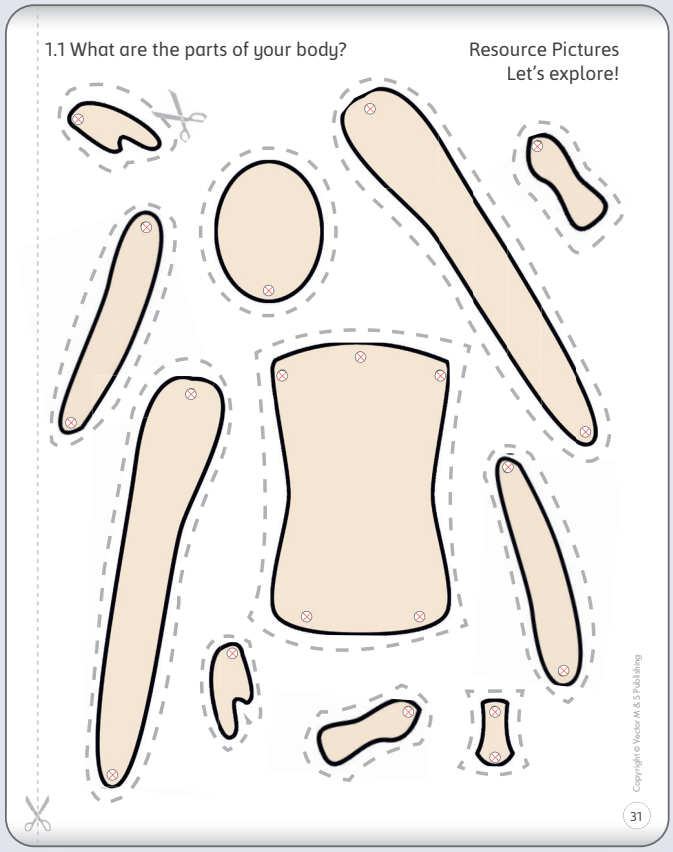
He has:
- a big head
- small eyes
- a big mouth
- a big nose
- big ears
- a short neck
- curly hair
- short arms
- big hands
- long fingers
- long legs
- small feet

2. Find and circle the words in the grid, as in the example.

~~body~~ knee neck finger toe shoulder

x	k	n	e	e	r	n	s	t
f	i	n	g	e	r	e	w	o
b	o	d	y	f	e	c	q	e
p	h	z	y	i	p	k	e	d
p	s	h	o	u	l	d	e	r

6



1.1 What are the parts of your body?

Resource Pictures
Let's explore!

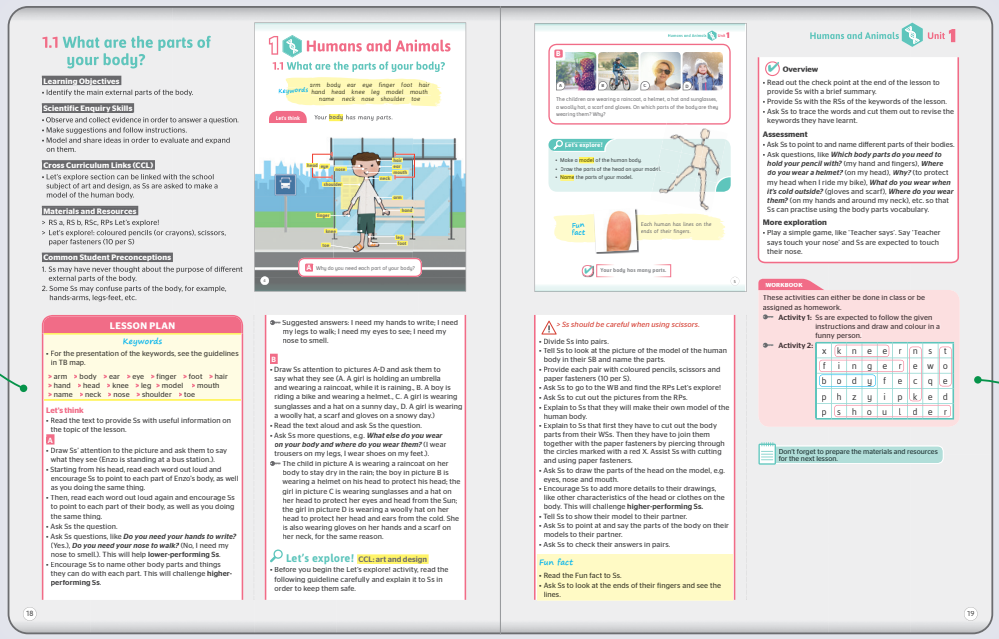
31

Science 1, Workbook

Science

International Primary • Sample Pages

extensive and detailed lesson plan



1.1 What are the parts of your body?

Learning Objectives
- Identify the main external parts of the body.

Scientific Inquiry Skills
- Observe and collect evidence in order to answer a question.
- Make suggestions and follow instructions.
- Model and share ideas in order to evaluate and expand on them.

Cross Curriculum Links (CCL)
- Let's explore! section can be linked with the school subject of art and design, as Ss are asked to make a model of the human body.

Materials and Resources
- RS a, RS b, RSc, RPs Let's explore!
- Let's explore!: coloured pencils (or crayons), scissors, paper fasteners (10 per S)

Common Student Preconceptions
1. Ss may have never thought about the purpose of different external parts of the body.
2. Some Ss may confuse parts of the body, for example, hands-arms, legs-feet, etc.

LESSON PLAN

Keywords
- For the presentation of the keywords, see the guidelines in TB map.

> arm > body > ear > eye > finger > foot > hair > hand > head > knee > leg > model > mouth > name > neck > nose > shoulder > toe

Let's think
- Read the text to provide Ss with useful information on the topic of the lesson.

A
- Draw Ss' attention to the picture and ask them to say what they see (Enzo is standing at a bus station.).
- Starting from his head, read each word out loud and encourage Ss to point to each part of Enzo's body, as well as you doing the same thing.
- Then, read each word out loud again and encourage Ss to point to each part of their body, as well as you doing the same thing.
- Ask Ss the question.
- Ask Ss questions, like ***Do you need your hands to write?*** (Yes.), ***Do you need your nose to walk?*** (No, I need my nose to smell.). This will help **lower-performing Ss**.
- Encourage Ss to name other body parts and things they can do with each part. This will challenge **higher-performing Ss**.

Suggested answers: I need my hands to write; I need my legs to walk; I need my eyes to see; I need my nose to smell.

B
- Draw Ss attention to pictures A-D and ask them to say what they see (A. A girl is holding an umbrella and wearing a raincoat, while it is raining., B. A boy is riding a bike and wearing a helmet., C. A girl is wearing sunglasses and a hat on a sunny day., D. A girl is wearing a woolly hat, a scarf and gloves on a snowy day.)
- Read the text aloud and ask Ss the question.
- Ask Ss more questions, e.g. ***What else do you wear on your body and where do you wear them?*** (I wear trousers on my legs, I wear shoes on my feet.)

The child in picture A is wearing a raincoat on her body to stay dry in the rain; the boy in picture B is wearing a helmet on his head to protect his head; the girl in picture C is wearing sunglasses and a hat on her head to protect her eyes and head from the Sun; the girl in picture D is wearing a woolly hat on her head to protect her head and ears from the cold. She is also wearing gloves on her hands and a scarf on her neck, for the same reason.

Let's explore! CCL: art and design
- Before you begin the Let's explore! activity, read the following guideline carefully and explain it to Ss in order to keep them safe.

> Ss should be careful when using scissors.

- Divide Ss into pairs.
- Tell Ss to look at the picture of the model of the human body in their SB and name the parts.
- Provide each pair with coloured pencils, scissors and paper fasteners (10 per S).
- Ask Ss to go to the WB and find the RPs Let's explore!
- Ask Ss to cut out the pictures from the RPs.
- Explain to Ss that they will make their own model of the human body.
- Explain to Ss that first they have to cut out the body parts from their WSs. Then they have to join them together with the paper fasteners by piercing through the circles marked with a red X. Assist Ss with cutting and using paper fasteners.
- Ask Ss to draw the parts of the head on the model, e.g. eyes, nose and mouth.
- Encourage Ss to add more details to their drawings, like other characteristics of the head or clothes on the body. This will challenge **higher-performing Ss**.
- Tell Ss to show their model to their partner.
- Ask Ss to point at and say the parts of the body on their models to their partner.
- Ask Ss to check their answers in pairs.

Fun fact
- Read the Fun fact to Ss.
- Ask Ss to look at the ends of their fingers and see the lines.

Overview
- Read out the check point at the end of the lesson to provide Ss with a brief summary.
- Provide Ss with the RSs of the keywords of the lesson.
- Ask Ss to trace the words and cut them out to revise the keywords they have learnt.

Assessment
- Ask Ss to point to and name different parts of their bodies.
- Ask questions, like ***Which body parts do you need to hold your pencil with?*** (my hand and fingers), ***Where do you wear a helmet?*** (on my head), ***Why?*** (to protect my head when I ride my bike), ***What do you wear when it's cold outside?*** (gloves and scarf), ***Where do you wear them?*** (on my hands and around my neck), etc. so that Ss can practise using the body parts vocabulary.

More exploration
- Play a simple game, like 'Teacher says'. Say 'Teacher says touch your nose' and Ss are expected to touch their nose.

WORKBOOK
These activities can either be done in class or be assigned as homework.
- Activity 1: Ss are expected to follow the given instructions and draw and colour in a funny person.
- Activity 2:

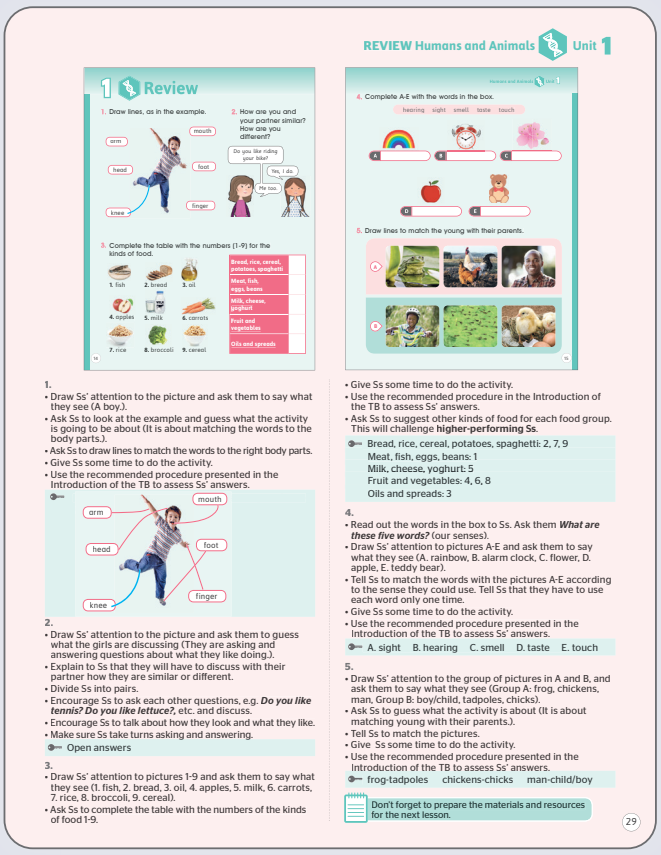
x	k	n	e	e	r	n	s	t
f	i	n	g	e	r	e	w	o
b	o	d	y	f	e	c	q	e
p	h	z	y	i	p	k	e	d
p	s	h	o	u	l	d	e	r

Don't forget to prepare the materials and resources for the next lesson.

keys to the activities in the Workbook

Science 1, Teacher's Book

supportive material for class activities



REVIEW Humans and Animals Unit 1

1 Review

1. Draw lines, as in the example.
2. How are you and your partner similar? How are you different?
3. Complete the table with the numbers (1-9) for the kinds of food.

Bread, rice, cereal, potatoes, spaghetti	
Meat, fish, eggs, beans	
Milk, cheese, yoghurt	
Fruit and vegetables	
Oils and spreads	

4. Complete A-E with the words in the box.
5. Draw lines to match the young with their parents.

1.
- Draw Ss' attention to the picture and ask them to say what they see (A boy.).
- Ask Ss to look at the example and guess what the activity is going to be about (It is about matching the words to the body parts.).
- Ask Ss to draw lines to match the words to the right body parts.
- Give Ss some time to do the activity.
- Use the recommended procedure presented in the Introduction of the TB to assess Ss' answers.

2.
- Draw Ss' attention to the picture and ask them to guess what the girls are discussing (They are asking and answering questions about what they like doing.).
- Explain to Ss that they will have to discuss with their partner how they are similar or different.
- Divide Ss into pairs.
- Encourage Ss to ask each other questions, e.g. ***Do you like tennis? Do you like lettuce?***, etc. and discuss.
- Encourage Ss to talk about how they look and what they like.
- Make sure Ss take turns asking and answering.

Open answers

3.
- Draw Ss' attention to pictures 1-9 and ask them to say what they see (1. fish, 2. bread, 3. oil, 4. apples, 5. milk, 6. carrots, 7. rice, 8. broccoli, 9. cereal).
- Ask Ss to complete the table with the numbers of the kinds of food 1-9.
- Give Ss some time to do the activity.
- Use the recommended procedure in the Introduction of the TB to assess Ss' answers.
- Ask Ss to suggest other kinds of food for each food group. This will challenge **higher-performing Ss**.

Bread, rice, cereal, potatoes, spaghetti: 2, 7, 9
Meat, fish, eggs, beans: 1
Milk, cheese, yoghurt: 5
Fruit and vegetables: 4, 6, 8
Oils and spreads: 3

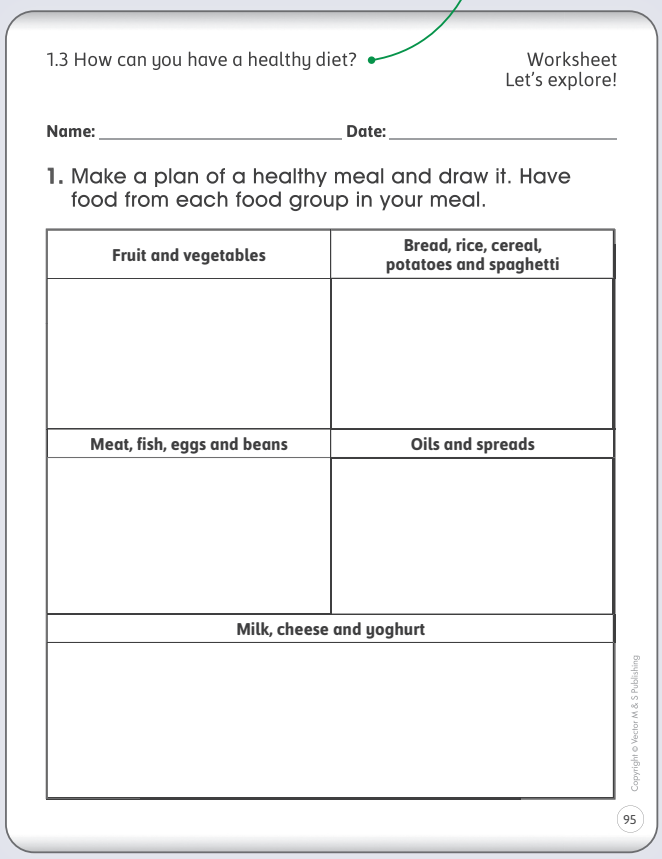
4.
- Read out the words in the box to Ss. Ask them ***What are these five words?*** (our senses).
- Draw Ss' attention to pictures A-E and ask them to say what they see (A. rainbow, B. alarm clock, C. flower, D. apple, E. teddy bear).
- Tell Ss to match the words with the pictures A-E according to the sense they could use. Tell Ss that they have to use each word only one time.
- Give Ss some time to do the activity.
- Use the recommended procedure presented in the Introduction of the TB to assess Ss' answers.

A. sight B. hearing C. smell D. taste E. touch

5.
- Draw Ss' attention to the group of pictures in A and B, and ask them to say what they see (Group A: frog, chickens, man, Group B: boy/child, tadpoles, chicks).
- Ask Ss to guess what the activity is about (It is about matching young with their parents.).
- Tell Ss to match the pictures.
- Give Ss some time to do the activity.
- Use the recommended procedure presented in the Introduction of the TB to assess Ss' answers.

frog-tadpoles chickens-chicks man-child/boy

Don't forget to prepare the materials and resources for the next lesson.



1.3 How can you have a healthy diet?

Worksheet
Let's explore!

Name: _____ Date: _____

1. Make a plan of a healthy meal and draw it. Have food from each food group in your meal.

Fruit and vegetables	Bread, rice, cereal, potatoes and spaghetti
Meat, fish, eggs and beans	**Oils and spreads**
Milk, cheese and yoghurt	

95

Science 1, Teacher's Book

introduction of each lesson without revealing all the scientific concepts

1 Humans and Animals

1.1 What are skeletons?

Keywords: bone conclusion pattern skeleton structure support vertebrate

Let's think Humans and some animals have bones inside their bodies. You can feel some of these bones through your skin.

A

1. Where do you think you have bones in your body?
2. Touch your arms and head. What do they feel like?
3. Who do you think has more bones: an adult or a baby?

Let's explore!

- Make a model of the human body.
- Where do you think you have bones in your body? How can you find out where your bones are?
- Explore the bones you can feel in your body.
- Draw the bones in your model.
- Does your partner's model have bones in the same places? Compare the models.
- Compare your model to your classmates' models. What's your conclusion?

Can you see a pattern in the models?

B

A human skeleton

B cat skeleton

C jellyfish

Bones are hard, strong and not heavy. The human skeleton is the structure of the bones inside the body. The skeleton supports the body and gives it a shape. Most vertebrates have skeletons made of bones. Not all animals have skeletons. Jellyfish have very soft bodies. There is fluid inside the body of a jellyfish, which gives it its shape. Name animals with skeletons made of bones.

How can you make your bones stronger?

Science in action

The body of a baby has about 300 bones. The body of an adult has 206 bones. What do you think happens to some of the bones that a baby has as it grows up?

- **The skeleton is the structure of the bones inside a human's or an animal's body.**
- **Not all animals have skeletons.**
- **Some animals have skeletons made of bones.**
- **A skeleton supports the body and gives it its shape.**

Science 4, Student's Book

activities that focus on the development of the vocabulary

Unit 1: Humans and Animals — Language Focus

Name: _____ **Date:** _____

1. Match. Write **a–e** in the boxes.

1. irregular bone ( )
2. long-term ( )
3. skull ( )
4. spine ( )
5. spinal disc ( )

a. the part of the skeleton that protects the brain
b. an illness that lasts for years or for the whole of a person's life
c. a bone that is not long and straight but has a different shape to other bones
d. a strong elastic structure between each vertebra of the spine
e. the line of bones in an animal's or human's back that are connected together

2. Complete the sentences with the words in the box.

prescription warnings flu short-term fever syrup

1. Diabetes is a long-term illness, but the flu is a _____ illness.
2. When people feel sick, they may have a _____.
3. Sometimes when you cough you take a _____ to feel better.
4. The doctor gives you a _____ with the medicines you have to take.
5. The purpose, the uses, the _____, the directions and the other information are important to read before taking a medicine that doesn't need a doctor's prescription.
6. When people have a _____ his body temperature is higher than it should be.

3. Complete the sentences with the words in the box.

pollen insulin germs

1. _____ are harmful to humans.
2. _____ may cause an allergy.
3. _____ is a substance that keeps the amount of glucose in the blood at the level it should be.

293

Unit 1: Humans and Animals — Assessment Sheet

Name: _____ **Date:** _____

Total score / 40

1. Read the sentences. Write **Yes** or **No.**

1. All animals have skeletons inside their bodies. _____
2. The human skeleton is the structure of bones inside the body. _____
3. Human and animal skeletons have similar bones. _____
4. Muscles can push bones. _____
5. We can see microorganisms with the naked eye. _____
6. Germs cause all illnesses. _____

Score / 6

2. What are the three functions of the skeleton?

_____

_____

Score / 3

3. Complete the sentences with the words in the box.

symptoms pairs skull shapes useful lungs long

1. Bones have different _____ and sizes. There are flat bones, _____ bones, short bones and irregular bones.
2. The _____ protects the brain. The ribs protect the _____, the heart and other important organs.
3. Muscles work in _____.
4. Some microorganisms are harmful and some microorganisms are _____ to humans.
5. When people are not well, they may have _____ like sneezing, coughing, headaches, fever, etc.

Score / 7

308

activities for the evaluation of the knowledge students have acquired

Science 4, Teacher's Resource CD-ROM

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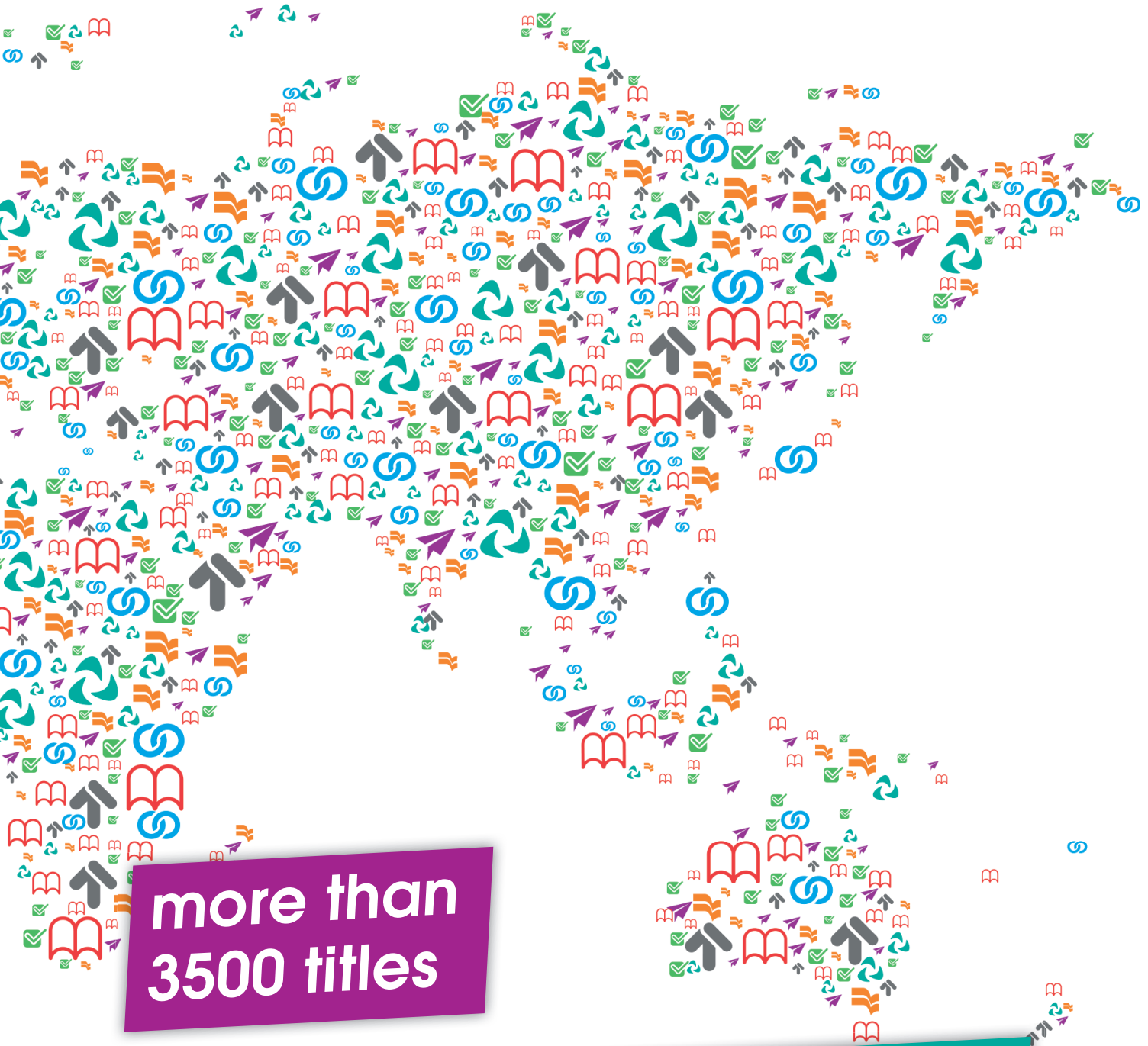

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CEFR LEVELS: Global Scale

Proficient User	C2	Can understand with ease virtually everything heard or read. Can summarise information from different spoken and written sources, reconstructing arguments and accounts in a coherent presentation. Can express himself/herself spontaneously, very fluently and precisely, differentiating finer shades of meaning even in more complex situations.
	C1	Can understand a wide range of demanding, longer texts, and recognise implicit meaning. Can express himself/herself fluently and spontaneously without much obvious searching for expressions. Can use language flexibly and effectively for social, academic and professional purposes. Can produce clear, well-structured, detailed text on complex subjects, showing controlled use of organisational patterns, connectors and cohesive devices.
Independent User	B2	Can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisation. Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.
	B1	Can understand the main points of clear standard input on familiar matters regularly encountered in work, school, leisure, etc. Can deal with most situations likely to arise whilst travelling in an area where the language is spoken. Can produce simple connected text on topics which are familiar or of personal interest. Can describe experiences and events, dreams, hopes and ambitions and briefly give reasons and explanations for opinions and plans.
Basic User	A2	Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment). Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters. Can describe in simple terms aspects of his/her background, immediate environment and matters in areas of immediate need.
	A1	Can understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type. Can introduce himself/herself and others and can ask and answer questions about personal details such as where he/she lives, people he/she knows and things he/she has. Can interact in a simple way provided the other person talks slowly and clearly and is prepared to help.

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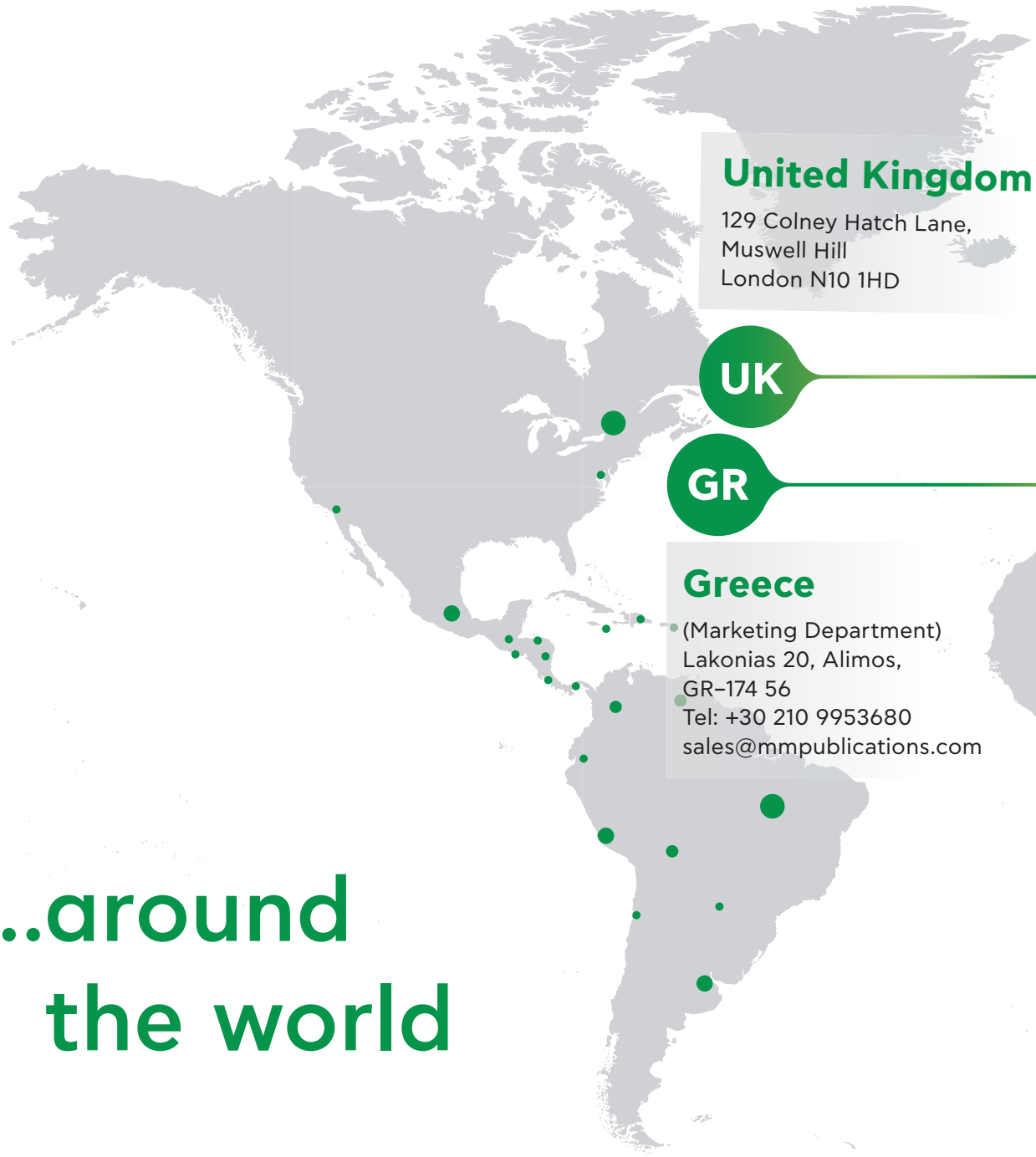

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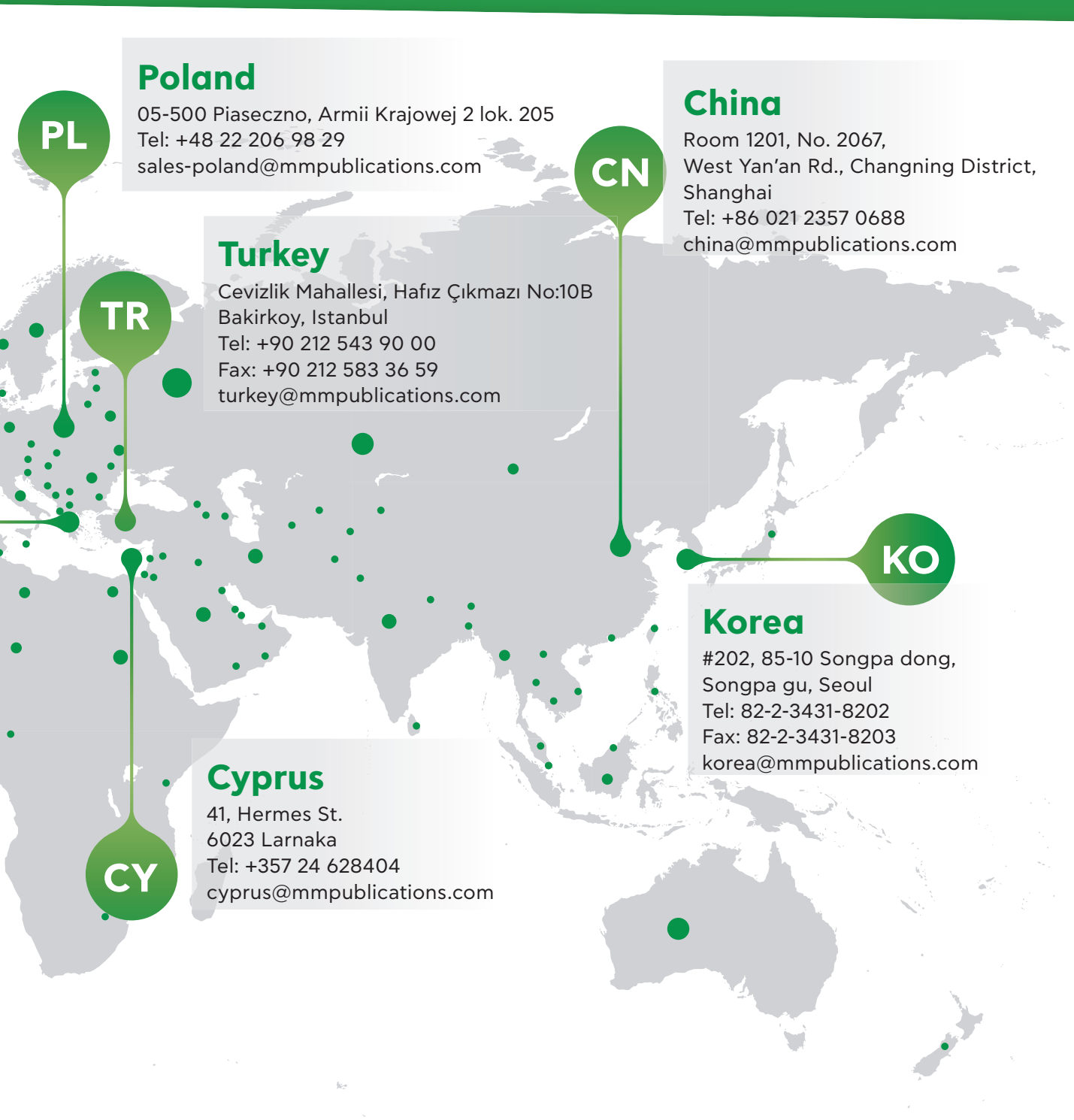

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