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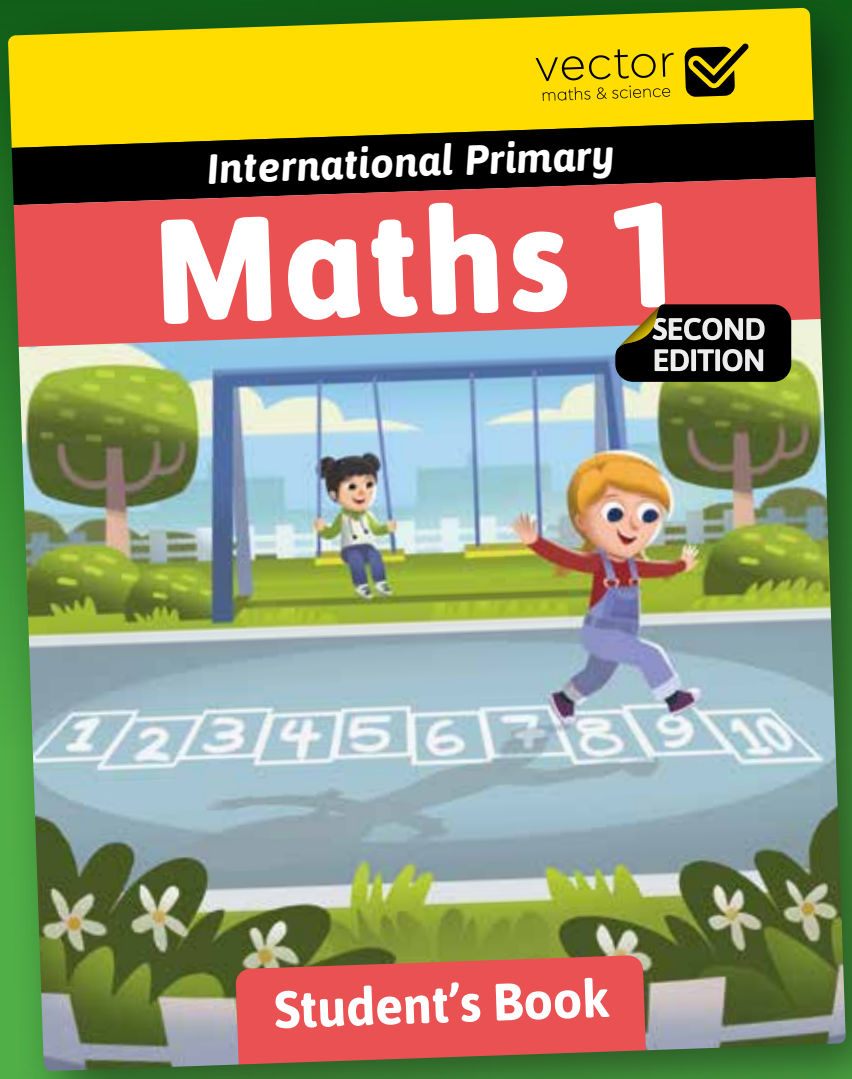
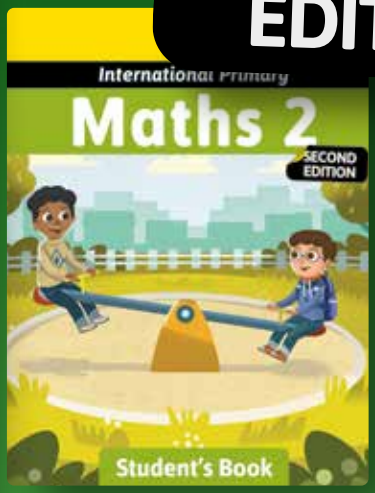
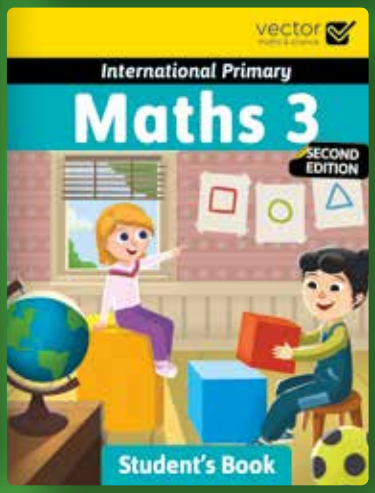
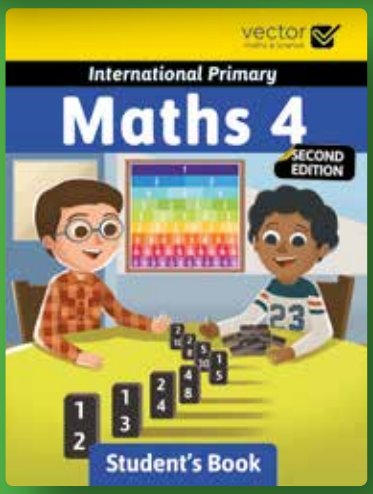
International Primary Maths

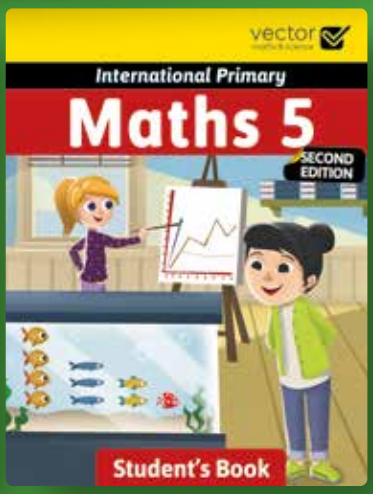
SECOND EDITION

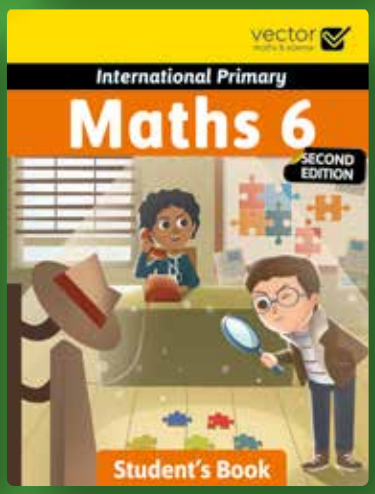












sample pages catalogue

International

6 LEVELS

1 

2 

3 

4 

5 

6 

International Primary Maths Second Edition 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.

International Primary Maths Second Edition 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.

Domains

- Numbers
- Geometry
- Measurement
- Data
- Problem Solving

Primary Maths

SECOND EDITION

Course features

FOR STUDENTS:

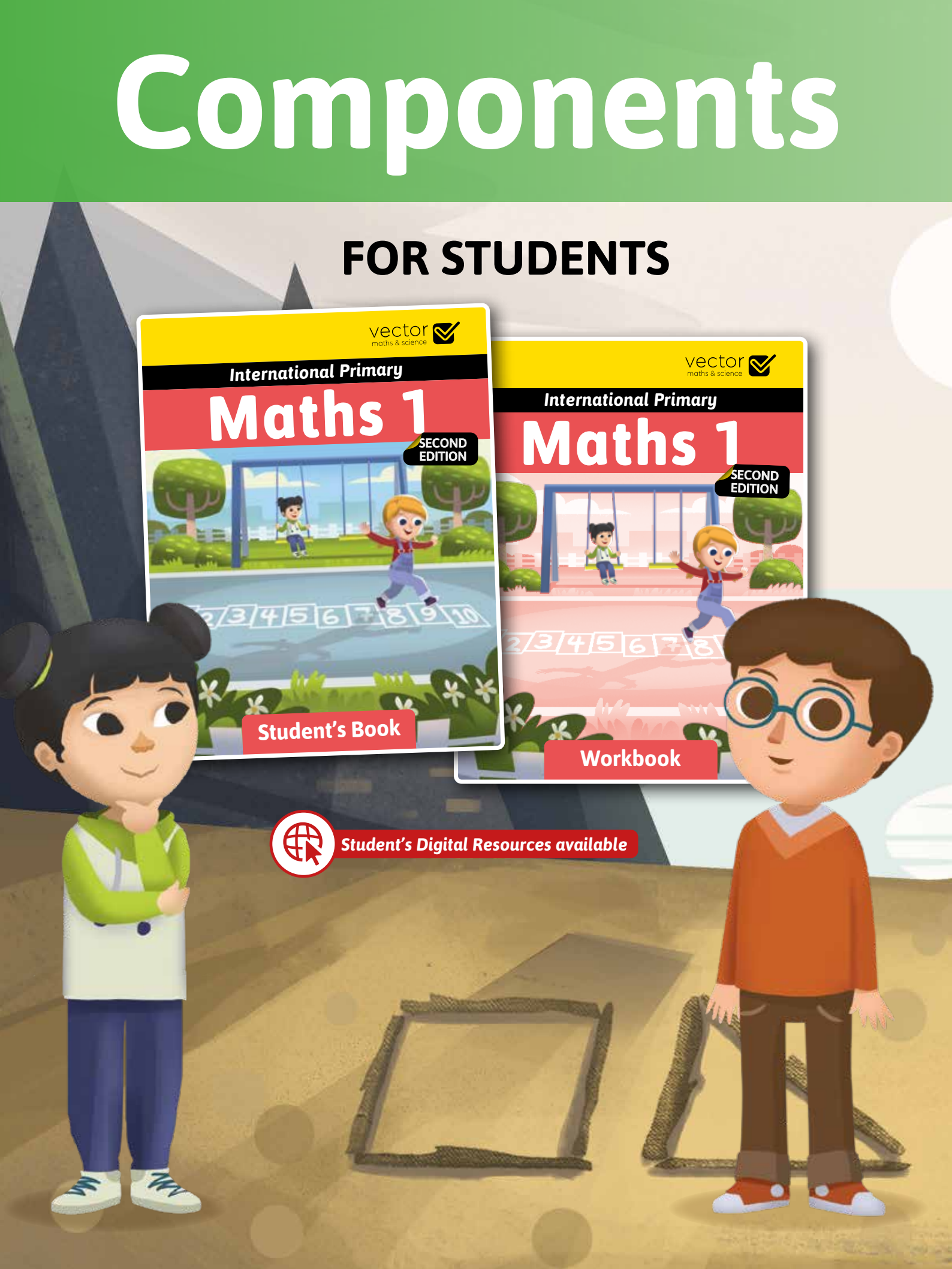
- **Age-appropriate** mathematical learning objectives
- A **gradual and spiral development** of mathematical knowledge
- Lessons based on the teaching model of **Engage, Explore, Explain, Elaborate and Evaluate (5 Es' Model)**
- Simple and comprehensible **vocabulary to support EAL (English as an Additional Language) students**
- Gradual development of mathematical terminology and literacy
- **Visuals and pictorial representations** that facilitate learning
- Stimulating activities that enhance the consolidation of knowledge and reinforce **critical thinking** and **mathematical reasoning skills**
- A 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 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 illustration
- Extension of mathematical concepts in real-life contexts

FOR TEACHERS:

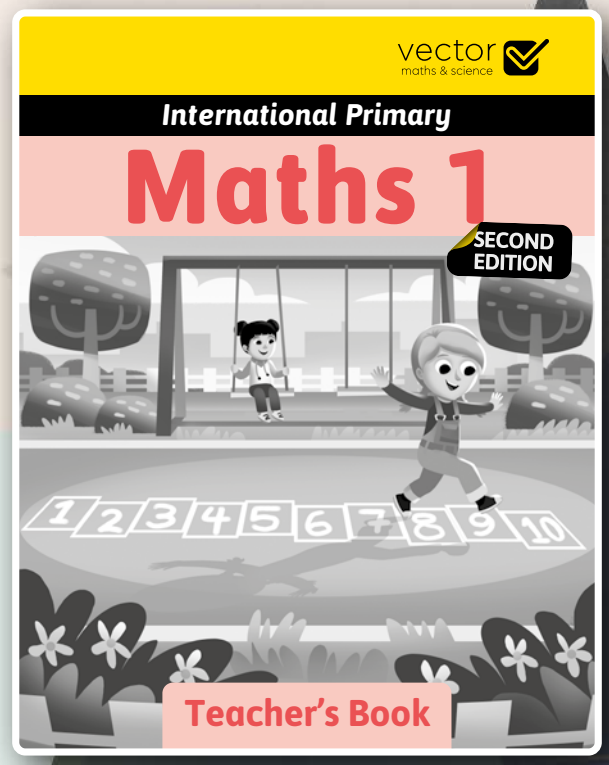
- Specific learning objectives for each lesson
- **Consistency** of the mathematical content throughout the series
- **Unit maps** at the beginning of each unit to provide well-organised information about the mathematical content of each lesson as well as students' prior knowledge
- List of possible **common student preconceptions** for each lesson
- **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 available on our website www.vectormsint.com
- Suggested digital activities using age-appropriate and user-friendly applications for coding, geometry, etc. easily accessible with the **use of QR codes**

Components

FOR STUDENTS



FOR TEACHERS



Teacher's Digital Resources available

UNIT 1

UNIT 2

UNIT 3

UNIT 4

UNIT 5

UNIT 6

UNIT 7

UNIT 8

UNIT 9

UNIT 1

UNIT 2

UNIT 3

UNIT 4

UNIT 5

UNIT 6

UNIT 7

UNIT 8

UNIT 9

high-quality illustrations to introduce the topic, capture students' interest and motivate mathematical investigation

an introductory question to engage students in the lesson and trigger whole-class discussion

2.3 More 2D shapes

What 2D shapes do you see on the football?

Look!

keywords highlighted in each lesson

pentagon

5 straight sides
5 corners

hexagon

6 straight sides
6 corners

the main mathematical concepts presented using pictorial representations and age-appropriate vocabulary

26

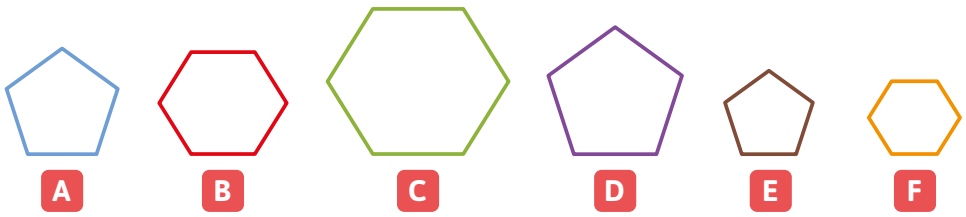
activities that reinforce mathematical skills and acquired knowledge through practice

domain(s) taught in each lesson highlighted

2.3

Activities

1. Draw lines to match.

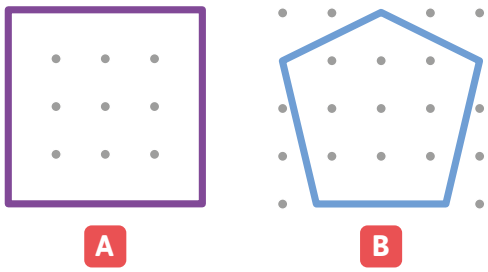


hexagon

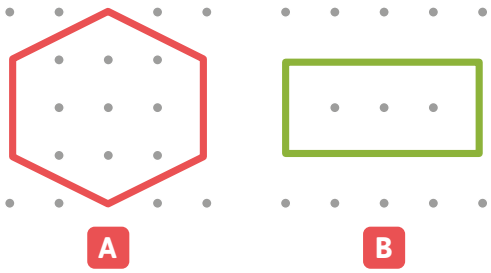
pentagon

2. Circle the correct 2D shape.

a. 5 sides

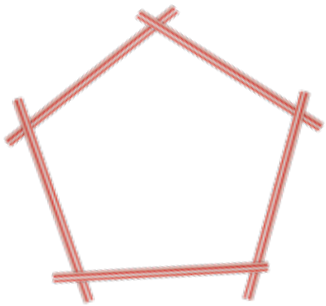


b. 6 corners



enjoyable cooperative/individual games, puzzles or cross-curricular activities that promote creative thinking and involve the application of knowledge and skills in different contexts

3. Make pentagons and hexagons!



a keyword list with the significant words of the lesson

Keywords
pentagon
hexagon

27

The materials needed for the activities of each unit, accompanied by pictures, are presented at the back of the book.

Materials

Maths 1

Unit 1

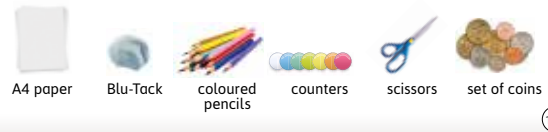
Unit 2


straws

Unit 3

Unit 4

Unit 5



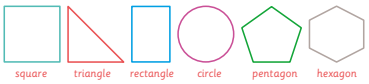
The key mathematical terms presented with comprehensible, age-appropriate definitions or pictures and examples ensure a gradual development of mathematical terminology.

Glossary

Maths 1

100 square

2D shape



3D shape

add — to put numbers or groups of objects together

addition — a number sentence that shows adding
e.g. 6 + 3 = 9

after


The brown boat is **after** the green boat.

afternoon — the part of the day between noon and about 6 o'clock

altogether — how much of something there is after we add all parts

backwards — in the direction that is behind us

balance scales — a tool we use to measure how heavy something is

balanced — when the things placed on the two sides of a pair of scales weigh the same

before


The yellow boat is **before** the green boat.

behind


The school is **behind** the tree.

between


The bag is **between** the table and the chair.

bigger (for numbers) — more than
*e.g. 13 is **bigger** than 11.*

biggest (for numbers) — the most
e.g. 2, 11, 13, 19
*19 is the **biggest** number.*

block graph — an organised way to show information using blocks

capacity — how much a container can hold

Carroll diagram — a way to sort objects into groups by asking 'Yes' or 'No' questions

cent


cent coins

Practice activities are provided for each lesson of the Student's Book, with a gradually increasing level of difficulty, to reinforce students' understanding of concepts and processes and to help them expand their knowledge. Keys for all the activities of the Workbook are provided in the Workbook Teacher's Edition, which is available at www.vectormsint.com.

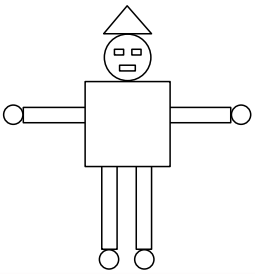
2.2 Name the 2D shapes

2.2

1. Colour in the 2D shapes.

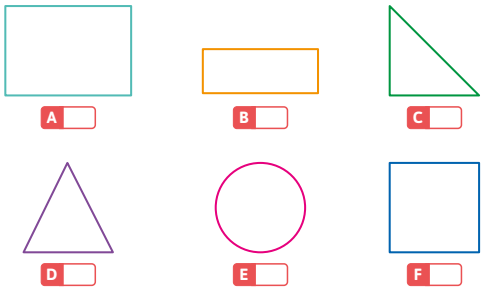
blue: the triangles **red:** the rectangles
pink: the circles **orange:** the squares

2. Count the 2D shapes and write the numbers.



circles ☐
triangles ☐
rectangles ☐
squares ☐

3. Tick (✓) the 2D shapes with 4 straight sides.

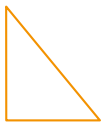


4. How many corners? Count and write the numbers.

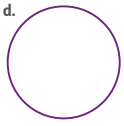
a. ☐

b. ☐

c. ☐



d. ☐



24 25

At the back of the Workbook, a set of Resource Sheets is included. Instructions for the use of these Resource Sheets are included in the corresponding lesson plans of the Teacher's Book.

Resource Sheet | 100 square

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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The first pages of each unit contain a brief introduction of the Unit, an overview of each lesson and supplementary information, which together reveal the structure of the mathematical content in the unit and enable teachers to monitor the progression of knowledge throughout the units.

2 Unit Map

age-appropriate objectives covered in each lesson

a list of the keywords of the lesson to ease lesson planning

the interconnections between the current lesson and previous lessons or other school subjects are indicated

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.

Learning Objectives

- Name and recognise more common 2D shapes (e.g. pentagon, hexagon).
- Identify the common 2D shapes (e.g. pentagon, hexagon) that form a picture.
- Describe common 2D shapes referring to the number of their straight sides.
- Realise that 2D shapes remain the same when we turn them around.
- Explore the properties of 2D shapes when we change their orientation.

Keywords	Cross Curriculum Links (CCL)	Materials and Resources	Common Student Preconceptions
For the presentation of the keywords, see the guidelines in the TB map. > pentagon > hexagon	> This lesson can be linked with lesson 2.2 from Unit 2, as Ss already know how to recognise, name and describe the common 2D shapes (square, rectangle, triangle, circle) referring to the number of sides, whether they are straight or curved. > The More practice activity for lower-performing Ss can be linked with the school subject of science, as Ss are asked to identify pentagons and hexagons in a real-life context. > The More practice activity for higher-performing Ss can be linked with the school subject of art, as Ss are asked to make a hexagon shaped kite.	> RS Hexagons and pentagons in life, RS Turn the shapes > straws, paper fasteners, A4 white card (1 piece per S), scissors	> Some Ss know the common 2D shapes (square, rectangle, circle, triangle) and can describe them using features such as the number of sides and corners. > Some Ss may identify examples of shapes that are not identical to the shape prototype. > Some Ss may have difficulty memorising the keywords hexagon and pentagon.

Maths and technology!

You can visit geogebra.org/geometry or download the application, where you can use various tools to construct different common 2D shapes such as squares, triangles, pentagons, etc. Then you can ask Ss to name each shape and count their straight sides and corners.

40 - Unit 2

Maths and technology! section encourages the teacher to use various age-appropriate and user-friendly applications for coding, geometry, etc. as digital teaching tools which serve the purpose of visually representing a mathematical concept and motivating Ss to get involved with technology. The use of QR codes makes the suggested teaching tools more accessible to you.

2 Unit Map

2.4 Symmetrical or not

In this lesson, Ss will identify line symmetry through folding paper.

Learning Objectives

- 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.

Keywords	Cross Curriculum Links (CCL)	Materials and Resources	Common Student Preconceptions
For the presentation of the keywords, see the guidelines in the TB map. > symmetrical > fold > line of symmetry	> Activity 3 can be linked with the school subject of art, as Ss are asked to paint a card.	> RS Folding > A4 paper (2 piece per S), paintbrushes (1 per S), paint (1 tube per S), scissors, coloured pencils	> Some Ss may confuse the concept of symmetry with the concept of half. > Some Ss may think that any image that shows two similar things is symmetrical.

materials and resources that students and teachers need throughout the lesson as well as for the activities in the More practice section

2.5 Even or odd

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

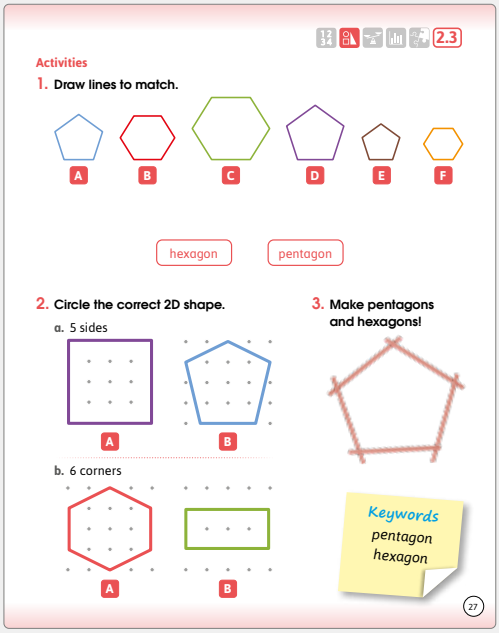
Learning Objectives

- 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).

Keywords	Cross Curriculum Links (CCL)	Materials and Resources	Common Student Preconceptions
For the presentation of the keywords, see the guidelines in the TB map. > pair > even > odd	> This lesson can be linked with lessons 1.4 and 1.5 from Unit 1, as Ss already know the numbers up to 10 and how to count up to ten objects.	> RS Animal cards > interlocking cubes, scissors, coloured pencils	> Some Ss are familiar with pairing through their everyday experience (e.g. pairing their socks). > Some Ss may think that a pair is a set of two objects similar to each other.

a list of students' possible difficulties and/or preconceptions to assist the teacher in intervening appropriately

2.3 More 2D shapes



an introductory question to capture students' interest and motivate them to explore the picture through whole-class discussion

extensive step-by-step guidelines that follow the structure of the Look! section

LESSON PLAN

What 2D shapes do you see on the football?

- Draw Ss' attention to the picture and ask them to say what they can see (Alex and Karim, a football, a tree, a kite, a bird house).
- Draw Ss' attention to Alex and Karim and read the dialogue aloud.
- Ask Ss the introductory question ***What 2D shapes do you see on the football?***
- 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.
- Remind Ss about the 2D shapes that they have already learnt (square, rectangle, triangle, circle).
- Explain to Ss that today they will learn the names of two new 2D shapes: a pentagon and a hexagon.
- Point out to Ss that a pentagon has 5 straight sides and 5 corners and that a hexagon has 6 straight sides and 6 corners.
- Explain to Ss that the black parts of the football are the shape of a pentagon and that the white parts of the football are the shape of a hexagon.
- Draw Ss' attention to the picture in the previous section and ask them ***What is the shape of the kite?*** (The shape of the kite is a hexagon.), ***What is the shape of the bird house?*** (The shape of the bird house is a pentagon.).
- Allow Ss some time to think about their answers.
- Make sure that Ss answer correctly at this stage of the lesson.

Activities

1. A. pentagon B. hexagon C. hexagon D. pentagon E. pentagon F. hexagon
2. a. B
   b. A
3. • Provide Ss with 12 straws.
   • Have Ss make a pentagon and a hexagon using straws.

keys for all the activities of the Student's Book

brief instructions for the games, puzzles and/or cross curricular activities (the use of materials is often required)

thought-provoking questions that enable students to better explore the mathematical concepts of the lesson and which often require justification

differentiated activities for lower- or higher-performing students, designed to enhance cooperative learning

2.3 More 2D shapes

- Give Ss some time to do the activity.
- Ask Ss ***How many straws do you need to make a pentagon?*** (We need 5 straws to make a pentagon.), ***How many straws do you need to make a hexagon?*** (We need 6 straws to make a hexagon.).
- Allow Ss some time to think about their answers.

More practice

For lower-performing Ss:

CCL: science

- Provide Ss with the RS Hexagons and pentagons in life.
- Have Ss recognise the shape of the object in each picture.
- Give Ss some time to do the activity.

A. hexagon B. pentagon
C. hexagon D. pentagon

For higher-performing Ss:

- Provide Ss with the RS Turn the shapes.
- Provide Ss with paper fasteners, a piece of A4 white card and scissors.
- Instruct Ss to cut out the 2D shapes from RS Turn the shapes.

Safety rules

> Ss should be careful when using scissors.

- Have Ss use the paper fasteners to fasten all of them on the A4 white card.

> Ss should be careful when using sharp objects.

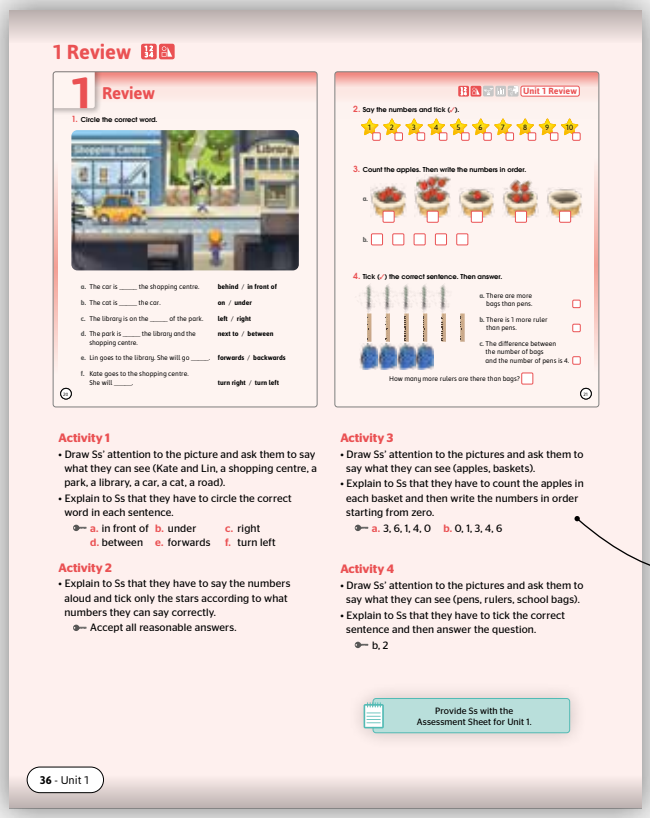
- Explain to Ss that before they fasten the 2D shapes they have to decide how to put them on the A4 white card so that they don't cover each other.
- Make sure that Ss have fastened the 2D shapes onto the white card from the middle of the shapes through the black dot.
- Have Ss use their pencils to trace around the shapes.
- Explain to Ss that they have to turn each 2D shape around the paper fasteners and decide whether the shapes change or are still the same.
- Ask Ss ***Turn the circle. What do you notice?*** (The circle is always the same while we turn it around.), ***Turn the square, the pentagon and the rectangle. What is different from turning the circle? Do they always look like they are at the same position?*** (The shapes are still the same but they look like we changed their position.).
- Have Ss fit the square to its starting position and mark one of its corners.
- Have Ss turn the square again and stop when the marked corner fits on another corner of the traced shape.
- Ask Ss ***What do you notice about the 2D shape?*** (When one corner of the square fits on another corner of the traced shape the square looks the same as if we didn't turn it around.).
- Repeat the activity with the pentagon and the rectangle.
- Encourage Ss to express their opinion and initiate a short discussion in class.
- Allow Ss some time to think about their answers.

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

reminders to facilitate the teaching procedure

notes focusing on safety issues for the students

Review activities, designed to assist students in consolidating their learning and reflecting on their knowledge, are provided at the end of each unit.



1 Review

1 Review

1. Circle the correct word.

a. The car is ____ the shopping centre. behind / in front of
b. The cat is ____ the car. on / under
c. The library is on the ____ of the park. left / right
d. The park is ____ the library and the shopping centre. next to / between
e. Lin goes to the library. She will go ____. forwards / backwards
f. Kate goes to the shopping centre. She will ____. turn right / turn left

Unit 1 Review

2. Say the numbers and tick (✓).

3. Count the apples. Then write the numbers in order.

a.
b.

4. Tick (✓) the correct sentence. Then answer.

a. There are more bags than pens.
b. There is 1 more ruler than pens.
c. The difference between the number of bags and the number of pens is 4.

How many more rulers are there than bags?

Activity 1
- Draw Ss' attention to the picture and ask them to say what they can see (Kate and Lin, a shopping centre, a park, a library, a car, a cat, a road).
- Explain to Ss that they have to circle the correct word in each sentence.

  a. in front of b. under c. right
  d. between e. forwards f. turn left

Activity 2
- Explain to Ss that they have to say the numbers aloud and tick only the stars according to what numbers they can say correctly.

  Accept all reasonable answers.

Activity 3
- Draw Ss' attention to the pictures and ask them to say what they can see (apples, baskets).
- Explain to Ss that they have to count the apples in each basket and then write the numbers in order starting from zero.

  a. 3, 6, 1, 4, 0 b. 0, 1, 3, 4, 6

Activity 4
- Draw Ss' attention to the pictures and ask them to say what they can see (pens, rulers, school bags).
- Explain to Ss that they have to tick the correct sentence and then answer the question.

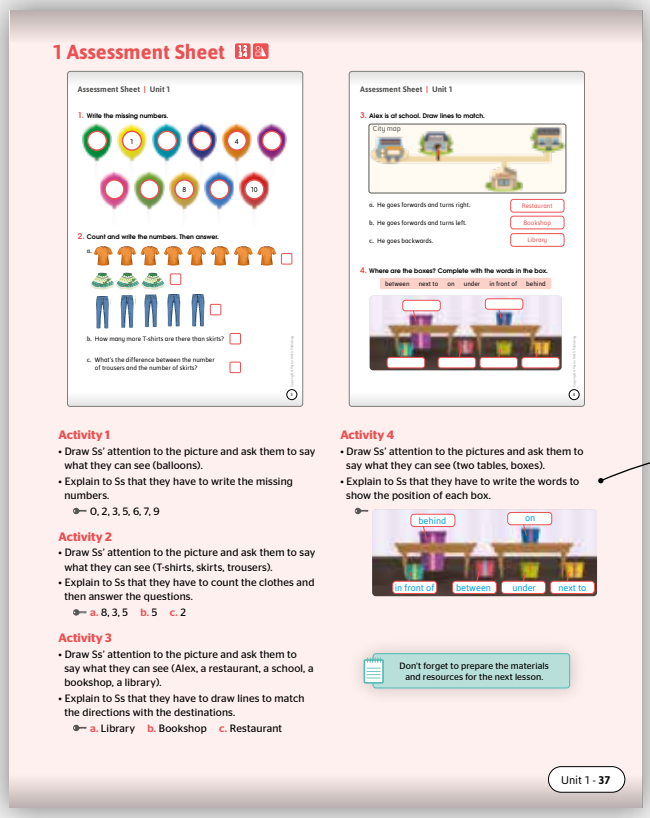
  b, 2

Provide Ss with the Assessment Sheet for Unit 1.

36 - Unit 1

detailed instructions on how to approach and carry out each activity of the Review pages as well as keys for all the activities provided, at the end of each unit

Assessment pages are provided to help teachers assess students' newly acquired knowledge and help students evaluate themselves and improve upon their own performance.



1 Assessment Sheet

Assessment Sheet | Unit 1

1. Write the missing numbers.

2. Count and write the numbers. Then answer.

a.
b. How many more T-shirts are there than skirts?
c. What's the difference between the number of trousers and the number of skirts?

Assessment Sheet | Unit 1

3. Alex is at school. Draw lines to match.

City map

a. He goes forwards and turns right. Restaurant
b. He goes forwards and turns left. Bookshop
c. He goes backwards. Library

4. Where are the boxes? Complete with the words in the box.

between next to on under in front of behind

behind on in front of between under next to

Activity 1
- Draw Ss' attention to the picture and ask them to say what they can see (balloons).
- Explain to Ss that they have to write the missing numbers.

  0, 2, 3, 5, 6, 7, 9

Activity 2
- Draw Ss' attention to the picture and ask them to say what they can see (T-shirts, skirts, trousers).
- Explain to Ss that they have to count the clothes and then answer the questions.

  a. 8, 3, 5 b. 5 c. 2

Activity 3
- Draw Ss' attention to the picture and ask them to say what they can see (Alex, a restaurant, a school, a bookshop, a library).
- Explain to Ss that they have to draw lines to match the directions with the destinations.

  a. Library b. Bookshop c. Restaurant

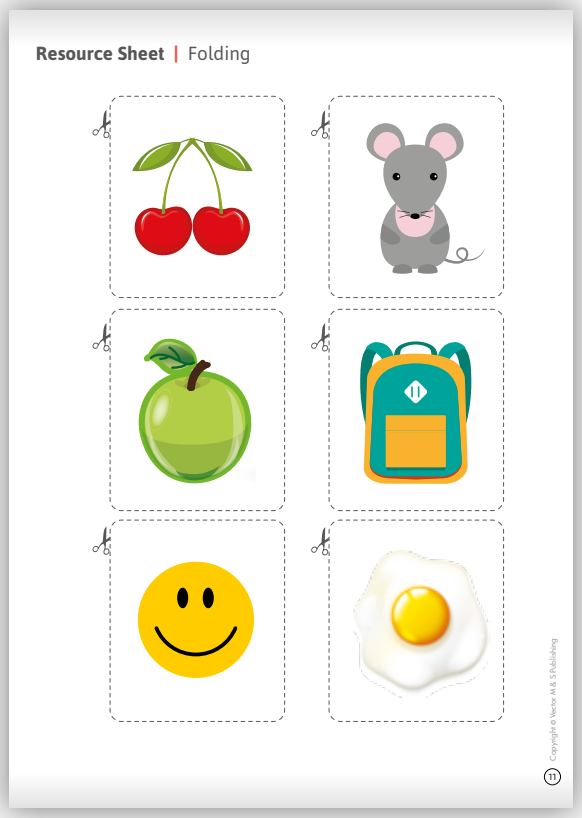
Activity 4
- Draw Ss' attention to the pictures and ask them to say what they can see (two tables, boxes).
- Explain to Ss that they have to write the words to show the position of each box.

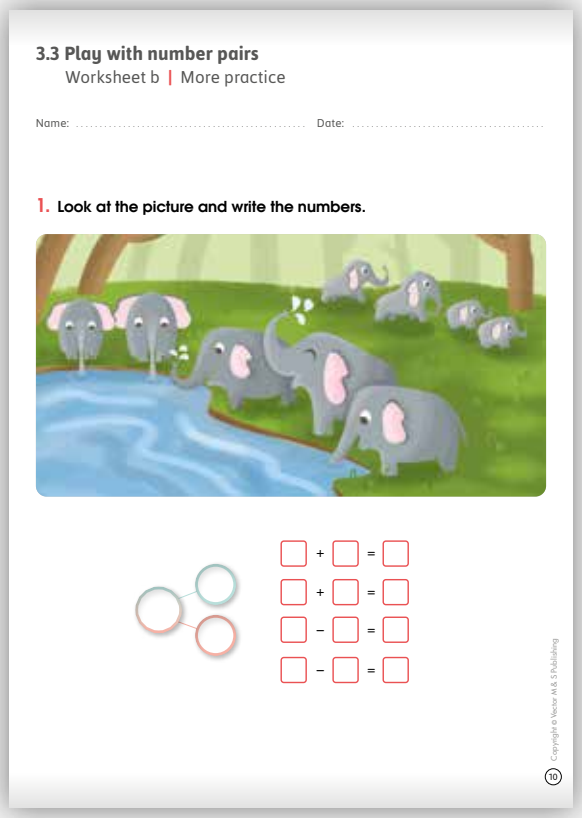
Don't forget to prepare the materials and resources for the next lesson.

Unit 1 - 37

detailed instructions on how to approach and carry out all the Assessment activities as well as corresponding keys provided, at the end of each unit

Resource Sheets are provided to support learning comprehension and serve as visual supports for students. Worksheets, for the differentiated activities of the More practice section, are also available to support understanding of the mathematical concepts and processes and serve as a tool for reinforcement or expansion of knowledge.



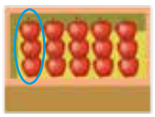


The Interactive Whiteboard has been designed to bring all the components of the series to life and make the learning process interesting for the students.

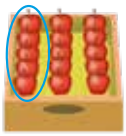
3.9 Meet the arrays

How many apples are there in a full basket?

Look! *Array*



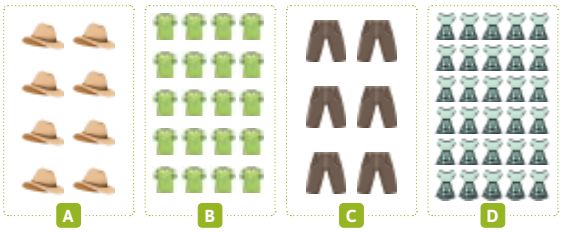
5 groups of 3
3 + 3 + 3 + 3 + 3 = 15
5 × 3 = 15



3 groups of 5
5 + 5 + 5 = 15
3 × 5 = 15

Activities

1. Draw lines to match.



4 groups of 5 | 2 groups of 3 | 2 groups of 4 | 5 groups of 6

2. Write the number sentences, as in the example.

a. 
5 x 2 = 10
2 x 5 = 10

b. 

c. 

Keywords
array

Workbook • **Maths 2** • Sample page

3.9 Meet the arrays

1. Draw lines to match.

3 groups of 5 | 6 groups of 5 | 5 groups of 4 | 2 groups of 5

2. Circle the correct array.

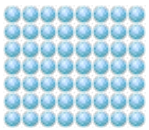
a. 7 × 2 

b. 4 × 3 

c. 6 × 2 

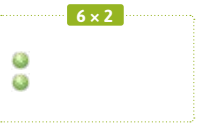
3. Write the number sentences, as in the example.

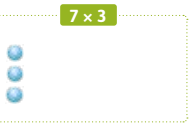
a. 
5 × 4 = 20
4 × 5 = 20

b. 

c. 

4. Complete the arrays.

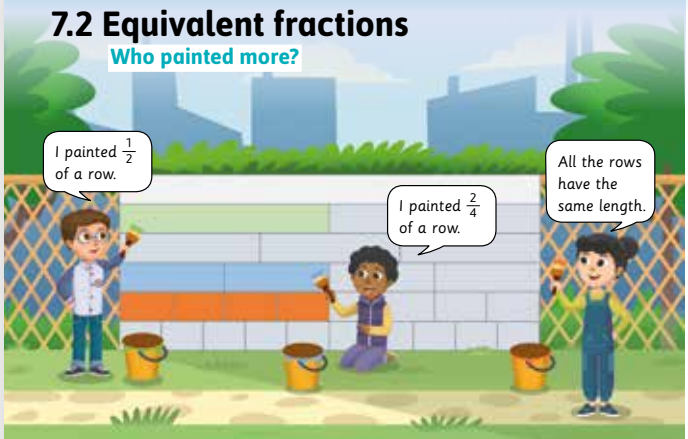
a. 6 × 2 

b. 7 × 3 

5. Use the array to make a number story.

7.2 Equivalent fractions

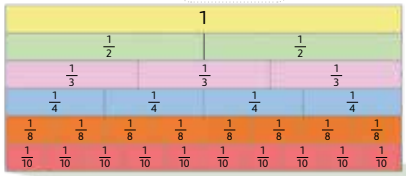
Who painted more?



Look!

We call fractions that have different top and bottom numbers but the same value **equivalent fractions.**

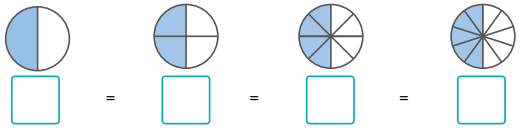
$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$



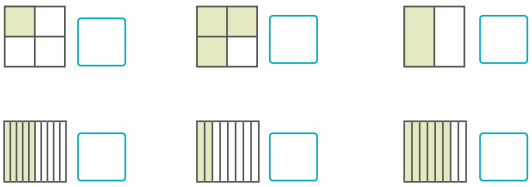
7.2

Activities

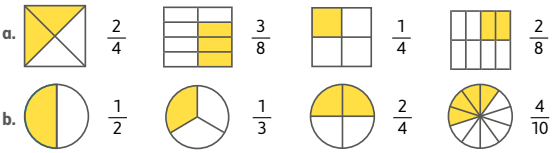
1. Write the equivalent fractions.



2. Look at the shapes and write the fractions. Then draw lines to match.



3. Which fractions are equivalent? Circle.



4. Tick (✓) the correct sentences.

a. $\frac{1}{2}$ is bigger than $\frac{3}{4}$. ☐
b. $\frac{1}{2}$ is bigger than $\frac{4}{10}$. ☐
c. $\frac{3}{8}$ is smaller than $\frac{2}{4}$. ☐
d. $\frac{3}{4}$ is the same as $\frac{2}{8}$. ☐

Keywords
equivalent fractions

7.2 Equivalent fractions

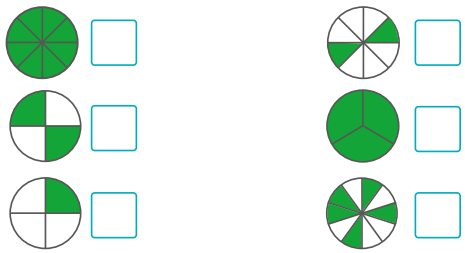
7.2

1. Which fractions are equivalent? Colour in.

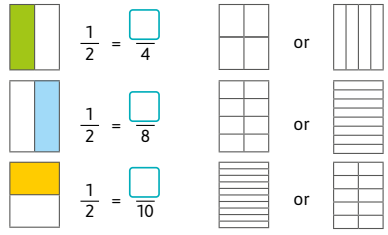
red: equal to $\frac{1}{2}$
green: equal to $\frac{3}{4}$
blue: equal to 1

$\frac{2}{4}$ $\frac{6}{8}$ $\frac{3}{3}$ $\frac{4}{8}$ $\frac{2}{2}$ $\frac{5}{10}$ $\frac{5}{5}$

2. Look at the shapes and write the fractions. Then draw lines to match.



3. Write the numbers. Then colour in $\frac{1}{2}$ of each shape.



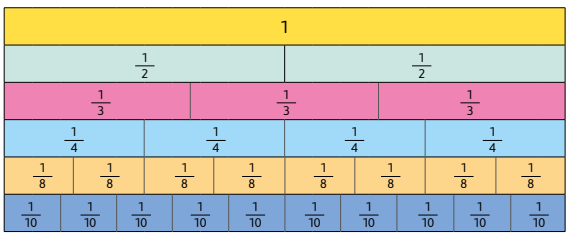
7.2

4. Colour in the fractions that are equivalent to $\frac{1}{2}$.

$\frac{3}{6}$ $\frac{5}{10}$ $\frac{6}{14}$ $\frac{12}{20}$ $\frac{25}{40}$ $\frac{50}{100}$ $\frac{12}{24}$

Explain your thinking:

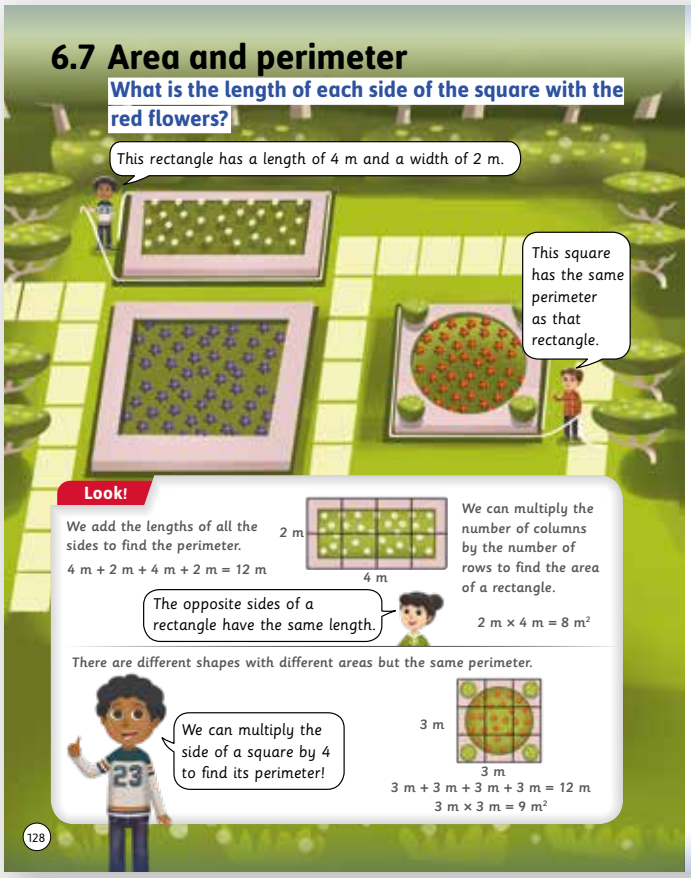
5. Read the sentences and write Yes or No.



a. $\frac{3}{4}$ is equivalent to $\frac{6}{10}$. ____
b. $\frac{1}{10}$ is smaller than $\frac{1}{4}$. ____
c. $\frac{2}{10}$ is smaller than $\frac{2}{8}$. ____
d. $\frac{8}{8}$ is equivalent to 1. ____
e. $\frac{1}{3}$ is bigger than $\frac{1}{4}$. ____
f. $\frac{2}{3}$ is bigger than $\frac{3}{4}$. ____

6.7 Area and perimeter

What is the length of each side of the square with the red flowers?



Look!

We add the lengths of all the sides to find the perimeter.

4 m + 2 m + 4 m + 2 m = 12 m

We can multiply the number of columns by the number of rows to find the area of a rectangle.

2 m × 4 m = 8 m²

The opposite sides of a rectangle have the same length.

There are different shapes with different areas but the same perimeter.

We can multiply the side of a square by 4 to find its perimeter!

3 m + 3 m + 3 m + 3 m = 12 m

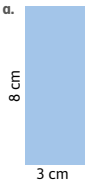
3 m × 3 m = 9 m²

6.7

Activities

1. Find the perimeter and area of each shape in centimetres (cm) and square centimetres (cm²). Then write each perimeter in millimetres (mm).

a.



☐ cm²
☐ cm
or
☐ mm

b.

☐ cm²
☐ cm
or
☐ mm

c.

☐ cm²
☐ cm
or
☐ mm

Remember! 1 cm = 10 mm

2. Measure and calculate the area and the perimeter of the rectangle. Then draw a square with the same perimeter and find its area.

square

area: _____ cm²

3. Draw shapes with the same perimeter but different areas!

6.7 Area and perimeter

1. Circle the correct units to complete the sentences.

a. We measure the perimeter of a piece of paper in ☐. **cm / m**

b. We measure the area of a square field in ☐. **cm² / m²**

c. We measure the perimeter of a pencil case in ☐. **cm / m**

2. Calculate the perimeter and the area.

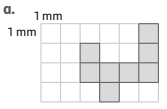
a.

b.

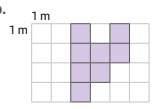
c.

3. Find the area and the perimeter of the shapes that are coloured in.

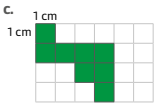
a.



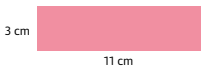
b.



c.



4. Draw lines to match.



perimeter = 18 cm

perimeter = 16 cm

perimeter = 28 cm

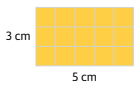
10 cm by 4 cm

5 cm by 4 cm

6 cm by 2 cm

6.7

5. What is the perimeter of the yellow shape? Write the number and draw two shapes with the same perimeter but different area.



a rectangle

a square

6. Draw shapes to answer the questions.

a. A square has a side of 30 m length. What is the perimeter of the square?

☐ ☐

b. A rectangle has sides of 4 cm width and 6 cm length. What is the area of the rectangle?

☐ ☐

c. A square has an area of 81 cm². What is the length of each side?

☐ ☐

d. A rectangle has a perimeter of 20 m and a width of 2 m. How long is the length of the rectangle?

☐ ☐

7. Solve the problem.

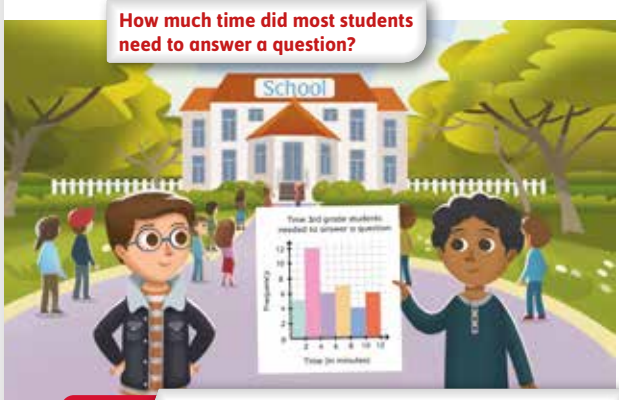
Kate has a square field with a side 3 m in length. Her mother wants to put a fence all around the field. The fence costs $5 per metre. How much does the whole fence cost?

☐

The whole fence costs $ ☐.

4.10 Bar charts and frequency diagrams

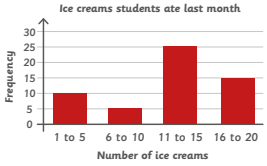
How much time did most students need to answer a question?



Look!

A We can use a bar chart to represent grouped data.
We first decide the **range** we use to organise the data, then we make a frequency table, and finally we represent the data using a bar chart.

Groups of data	
Number of ice creams	Frequency
1 - 5	10
6 - 10	5
11 - 15	25
16 - 20	15



The difference between the lower and the upper value of the range of each group of data is the same for all the groups of data.

4.10

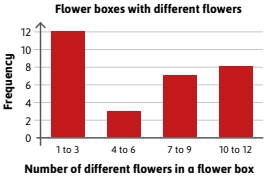
B There is data that can take any value. We call the diagram we use to represent data that can take any value, a **frequency diagram**.

Time (in minutes)	Frequency
0 - 2	5
2 - 4	12
4 - 6	6
6 - 8	7
8 - 10	4
10 - 12	6

We choose a range of 2 minutes to group the data. There are no spaces between the bars.

Activities

1. **Look at the bar chart. Then answer the questions.**



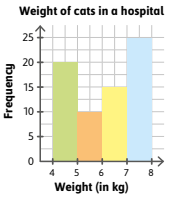
a. How many flower boxes are there? _____

b. What is the range of grouped flowers in flower boxes? _____

c. What is the difference in frequency between the 1 to 3 and 7 to 9 groups? _____

d. Which group has the highest frequency? _____

2. **Look at the frequency diagram and circle the correct sentences.**



a. The hospital has 75 cats altogether.

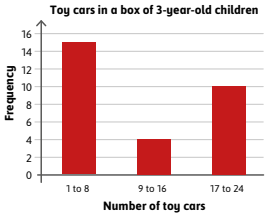
b. The hospital has 20 cats that weigh 4-5 kg.

c. There are 15 more cats that weigh 7-8 kg than those that weigh 5-6 kg.

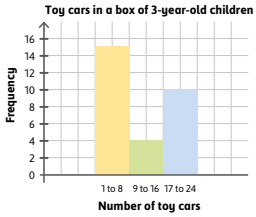
Keywords
range
frequency diagram

4.10 Bar charts and frequency diagrams

1. **Which diagram or chart is correct to represent the data? Tick (✓).**

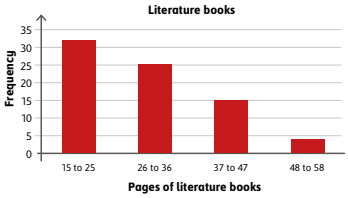


A ☐



B ☐

2. **Look at the bar chart. Then read the sentences and write Yes or No.**



a. About 75 books were examined. _____

b. 34 books have up to 25 pages. _____

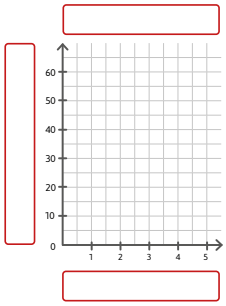
c. Four books have more than 60 pages _____

d. The range of number of pages is 10. _____

4.10

3. **The frequency table shows the height of 200 trees. Look at the frequency table and make a frequency diagram.**

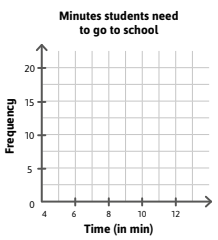
Height (in metres)	Frequency
0 - 1	35
1 - 2	40
2 - 3	20
3 - 4	55
4 - 5	50



4. **The tables show the time that each student needs to go to school. Complete the frequency table and then show the results on the frequency diagram.**

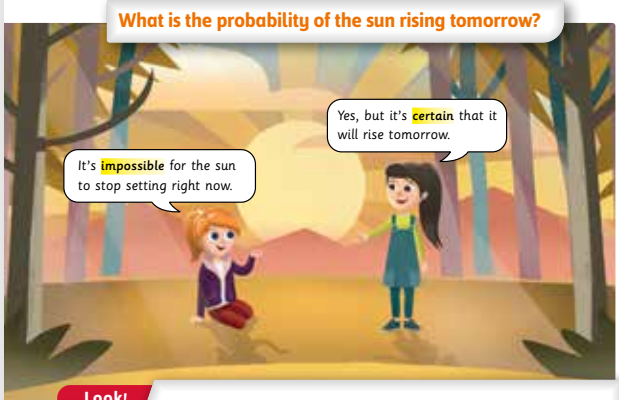
Time (in min)	Tally
4 - 6	𝍸 𝍸 | | |
6 - 8	𝍸 𝍸 𝍸
8 - 10	𝍸 | |
10 - 12	𝍸

Time (in min)	Frequency
4 - 6	
6 - 8	
8 - 10	
10 - 12	



5.7 Find the probability of an event

What is the probability of the sun rising tomorrow?

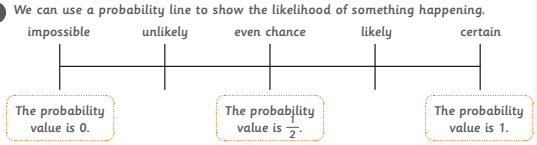


Look!

A We can use probability language to describe the chances that something will or will not happen. We call something that can happen an **event**.

There are many clouds in the sky, so it is **likely** to rain today.
Tomorrow is a school day, so it is **unlikely** that Lin and Kate will not to go to school.
There is an **even chance** of Lin sitting or not sitting during the next few minutes.

B We can use a probability line to show the likelihood of something happening.

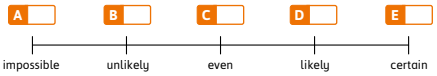


The likelihood of any event happening has a probability value between the numbers 0 and 1.

5.7

Activities

1. Look at the probability line. Then match.



1. During summer months in south Europe the temperatures are low.
2. I flip a coin and I get tails.
3. I grow older every year.
4. The students will do their homework.
5. In a desert every morning it snows.

2. Tick (✓) the correct probability.

	0	$\frac{1}{2}$	1
a. Picking a number card from 1-10 that is even.	☐	☐	☐
b. Not being dark when there is no sun.	☐	☐	☐
c. A person sleeping some hours every night.	☐	☐	☐

3. Look at the pictures and answer the questions.

a. Is it likely to get a red car from box A? _____
b. What is the probability of getting a red car from box B? _____
c. What is the probability of getting a green car from box C? _____
d. Is it likely to get a red car from box C? _____
e. Is it unlikely to get a yellow car from box A? _____
f. Is it certain to take a green and a yellow car from box B? _____

Keywords
certain
impossible
event
likely
unlikely
even chance

5.7 Find the probability of an event

5.7

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

unlikely likely impossible even certain

a. At the end of the school year it is _____ that the students will write exams.
b. There is a(n) _____ chance of picking an odd number from number cards 1-10.
c. It is _____ that the earth is flat.
d. It is _____ that we will need a protractor in English class.
e. It is _____ that every year has four seasons.

2. Look at the spinner wheels. Then circle the correct answers.

a. For which spinner is it certain to land on the colour blue? **A / B / C**
b. For which spinner is it impossible to land on the colour yellow? **A / B / C**
c. For which spinner is it unlikely to land on the colour yellow? **A / B / C**
d. For which spinner is it likely but not certain to land on the colour blue? **A / B / C**
e. For which spinner is there an even chance of landing on the colour red or blue? **A / B / C**

3. Look at the spinner wheel. Then answer the questions.

a. What is the probability of landing on a multiple of 2? _____
b. What is the probability of landing on an odd number? _____
c. What is the probability of landing on the number 1? _____
d. Is it likely or unlikely to land on the number 7? _____
e. Is it likely or unlikely to land on the number 1? _____

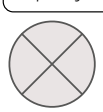
5.7

4. The net below is the net of a coloured octahedron. Look at the net and the probability line. Then match.

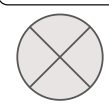
1. Tossing the octahedron and it lands on a green face.
2. Tossing the octahedron and it lands on a yellow face.
3. Tossing the octahedron and it lands on a blue or a red face.
4. Tossing the octahedron and it lands on a colour other than red, blue, green and yellow.
5. Tossing the octahedron and it lands on a triangular face.

5. Read the texts and write the numbers 1 to 3 in the sections of each spinner.

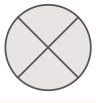
a. The probability of spinning '2' is 1.



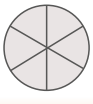
b. The probability of spinning '3' is $\frac{1}{2}$.



c. The probability of spinning '4' is 0.



d. It is unlikely to land on '1' but it's likely to land on '2'.



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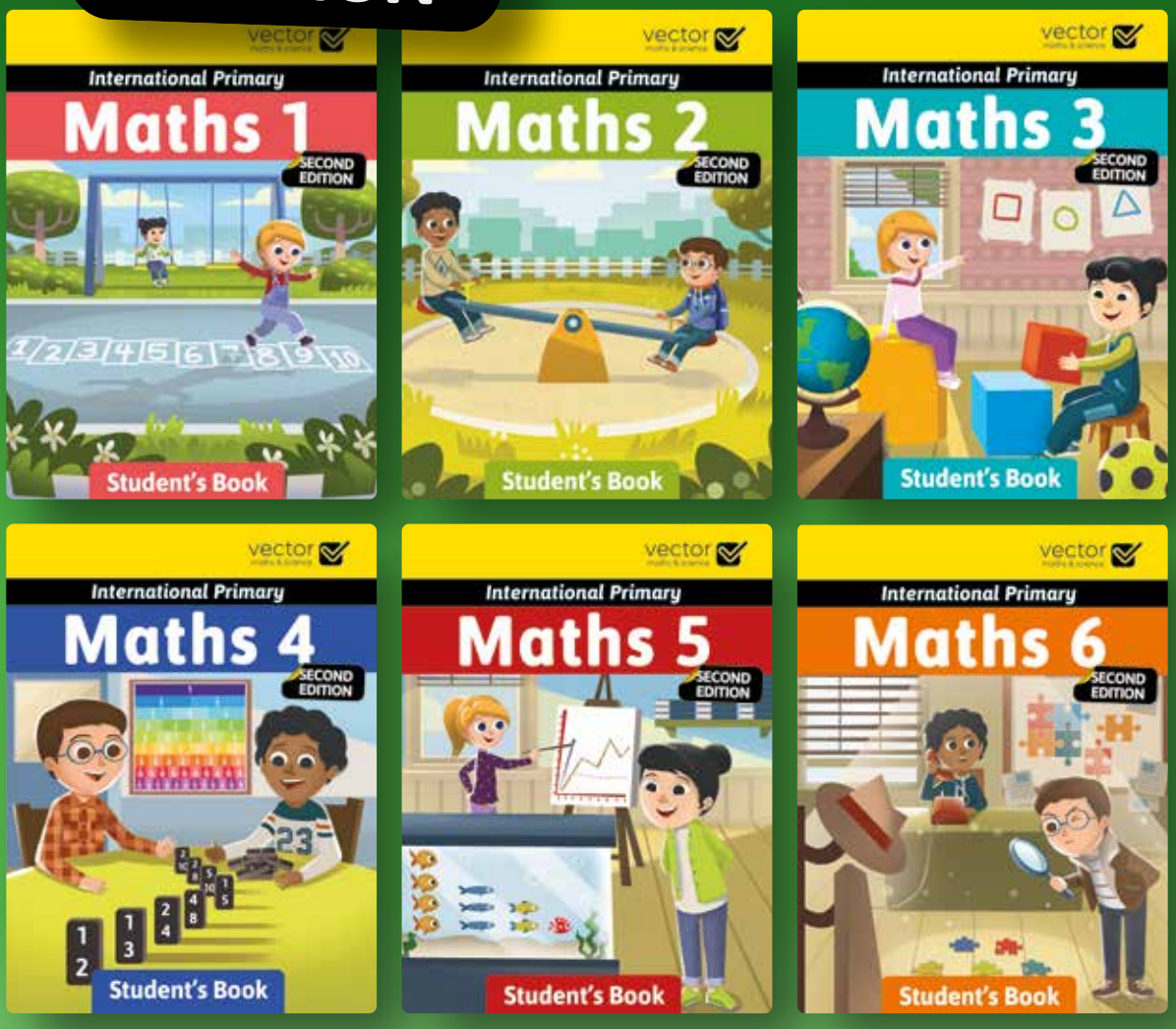

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