RUKUN NEGARA

Bahawasanya Negara Kita Malaysia
mendukung cita-cita hendak:

Mencapai perpaduan yang lebih erat dalam kalangan seluruh masyarakatnya;

Memelihara satu cara hidup demokrasi;

Mencipta satu masyarakat yang adil di mana kemakmuran negara akan dapat dinikmati bersama secara adil dan saksama;

Menjamin satu cara yang liberal terhadap tradisi-tradisi kebudayaannya yang kaya dan pelbagai corak;

Membina satu masyarakat progresif yang akan menggunakan sains dan teknologi moden.

MAKA KAMI, rakyat Malaysia,
berikrar akan menumpukan
seluruh tenaga dan usaha kami untuk mencapai cita-cita tersebut
berdasarkan prinsip-prinsip yang berikut:

KEPERCAYAAN KEPADA TUHAN
KESETIAAN KEPADA RAJA DAN NEGARA
KELUHURAN PERLEMBAGAAN
KEDAULATAN UNDANG-UNDANG
KESOPANAN DAN KESUSILAAN

(Sumber: Jabatan Penerangan, Kementerian Komunikasi dan Multimedia Malaysia)

STANDARD-BASED CURRICULUM FOR PRIMARY SCHOOL (REVISED 2017)
DUAL LANGUAGE PROGRAMME

MATHEMATICS

YEAR 3

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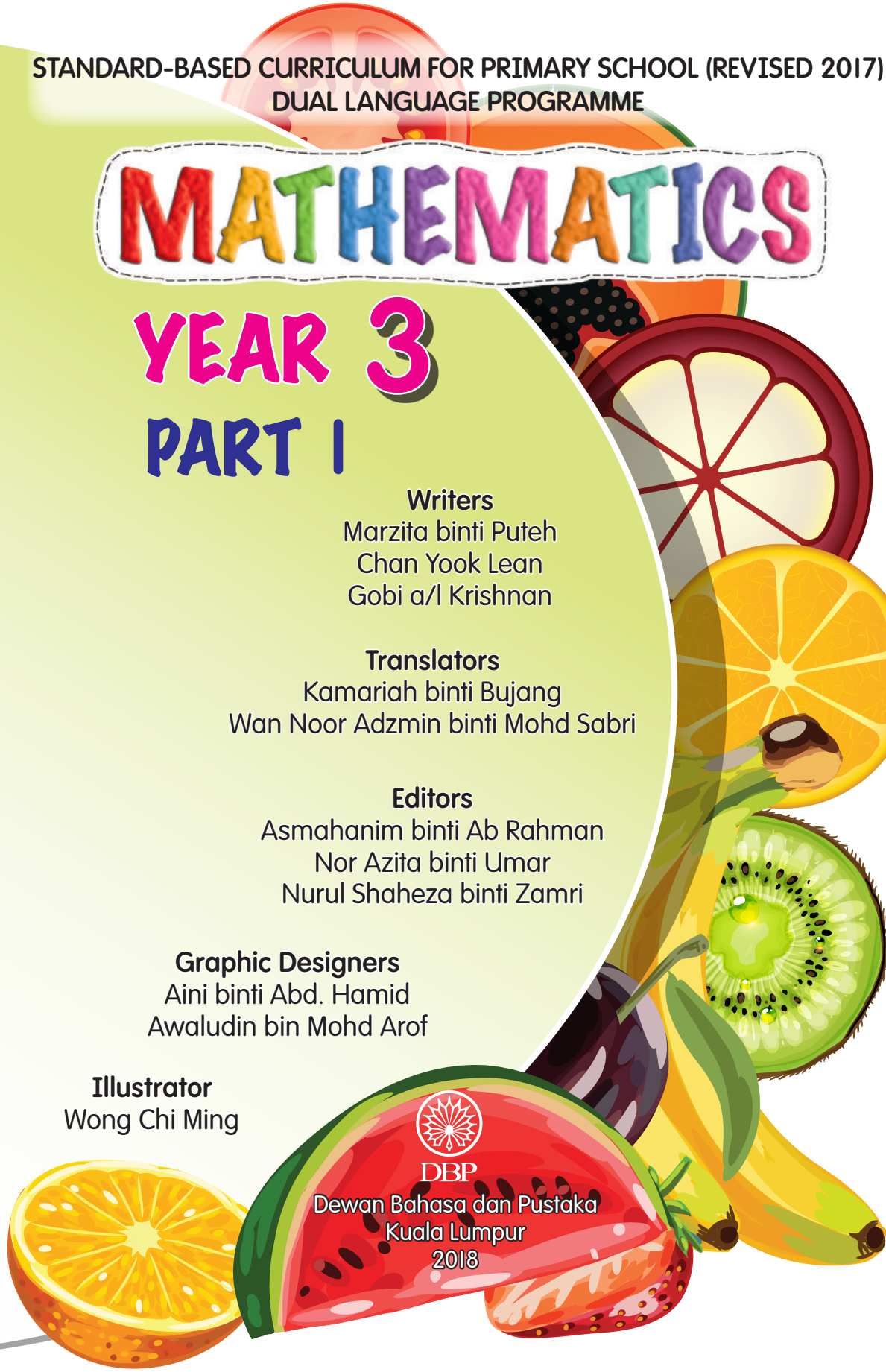

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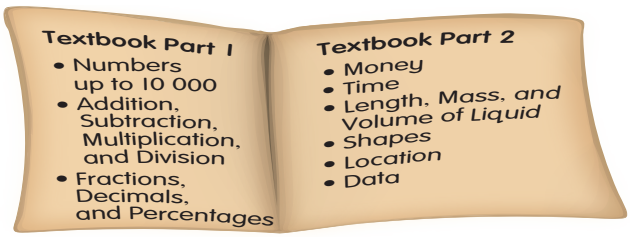
PREFACE

The *Mathematics Year 3* textbook package is written in accordance to the Standard-Based Curriculum for Primary School (KSSR), in line with the revised curriculum which will be implemented in 2019. The writing of this textbook is tailored to meet the needs of pupils to understand mathematical skills starting from the easiest to the most abstract level. The textbook package is published to produce pupils who are able to apply mathematical knowledge and skills, effectively and responsibly in their daily lives.

This textbook package contains three components, namely Textbook Part 1, Textbook Part 2 and Activity Book. The topics contained in the Textbook are as follows:



All of these topics are also contained in the Activity Book.

The textbooks focus on the goals of mathematics concepts and skills. The presentation of the textbooks is tailored to incorporate related reasoning questions so that pupils can communicate and think critically and creatively. Each lesson is reinforced with formative exercises to be carried out either orally or in writing in "Let's Try". Suggestions on extended activities are given in the "Teacher's Notes". Recreational elements are also included in the "Fun Project" and "Fun Time" to create an active and enjoyable learning environment. Several Higher Order Thinking skills (HOTs) questions are provided in the "Mind Challenge" sections to encourage pupils to think creatively. Video and audio on learning activities, as well as additional questions are also included in the QR Code. To access this, teachers are required to download the QR Code & Barcode Scanner application on the Play Store. Moral values are also implemented indirectly through pictures and learning activities.

The Activity Book provides reinforcement, remedial, and enrichment activities to reinforce and enhance pupils' understanding of the skills learnt in the textbooks. Teachers are encouraged to provide additional activities and exercises according to pupils' needs and abilities.

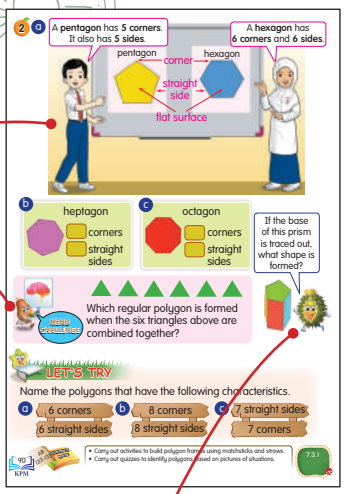
It is hoped this textbook package provides a meaningful and enjoyable learning experience as well as to foster pupils' interest in mathematics. Teachers may refer to the following explanation to discover and understand the ways in which the book is used.

Learning topics.

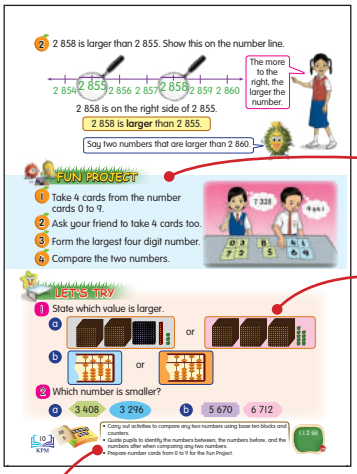
Stimulus page encourages pupils to communicate.

Pupil-centred activities.

Questions of Higher Order Thinking skills (HOTs).



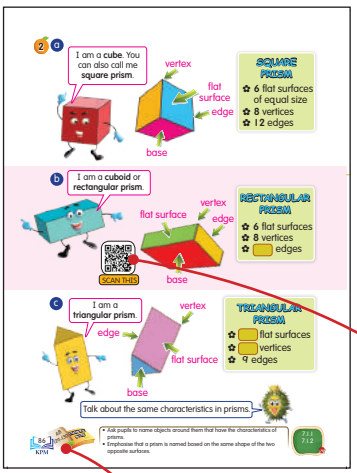
Content Standard and Learning Standard number based on the DSKP.



Hands-on activities to reinforce pupils' understanding.

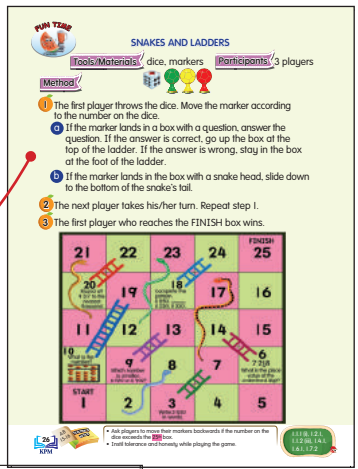
Mascot stimulates critical and creative thinking to generate ideas.

Formative exercises to assess understanding of learned skills.



Teacher's guide to implement teaching and learning activities.

Learning activities via QR Code.



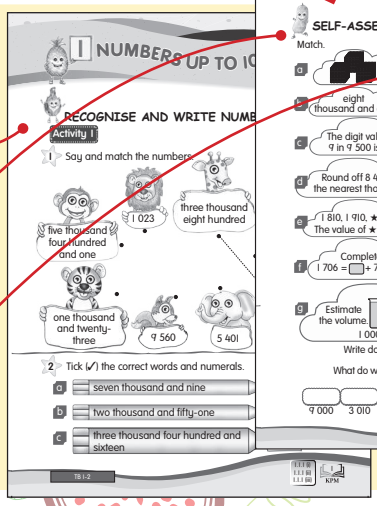
Recreational activities to foster pupils' interest in mathematics.

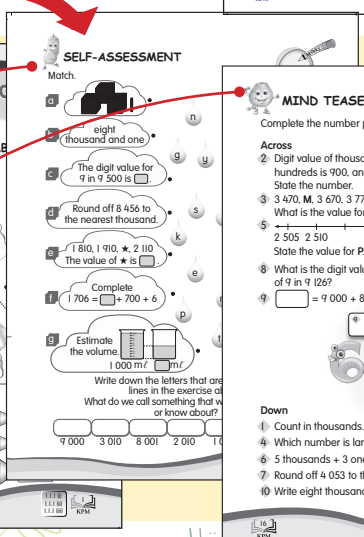
Links to the pages in the activity book.

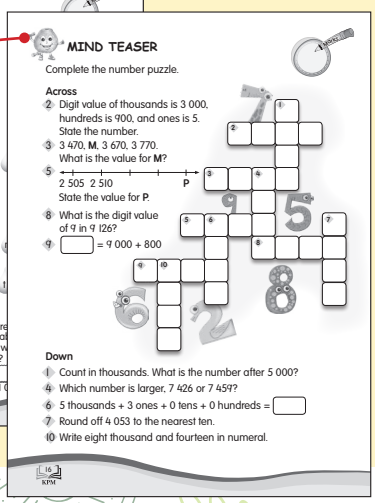
Reinforcement activities to enhance skills learnt.

Remedial activities to assess understanding of basic skills.

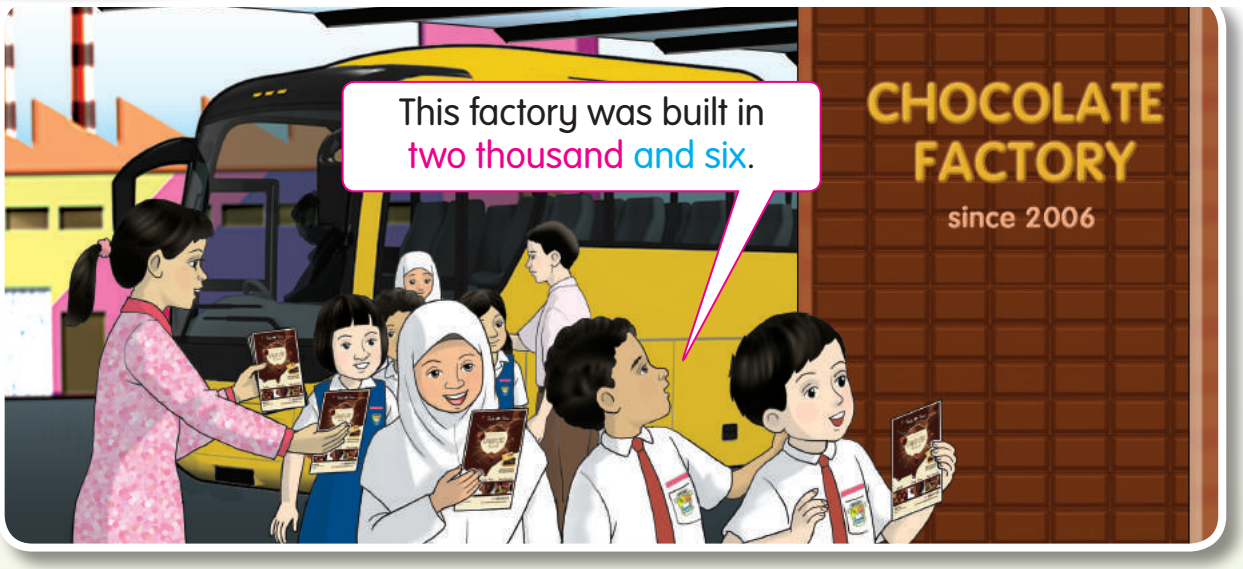
Enrichment activities to test critical and creative thinking.

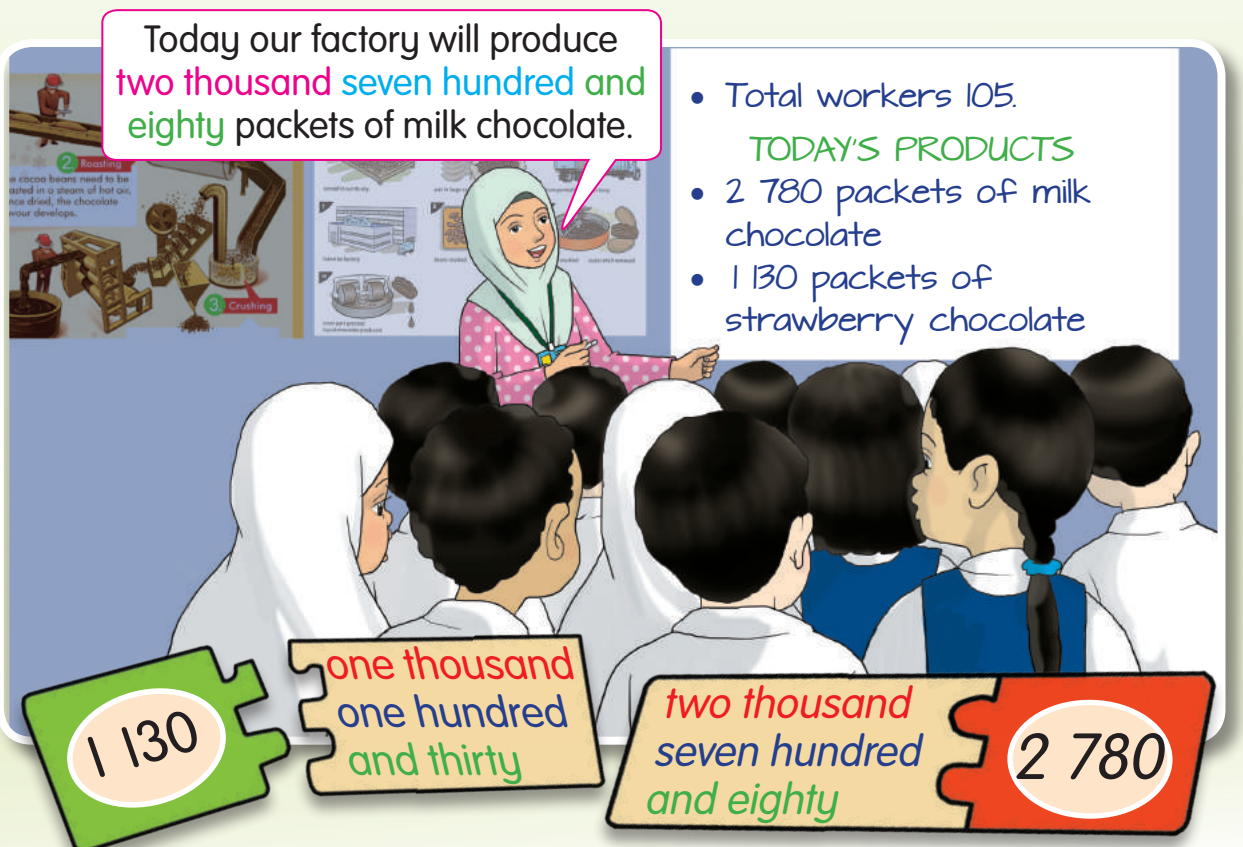






1 NUMBERS UP TO 10 000





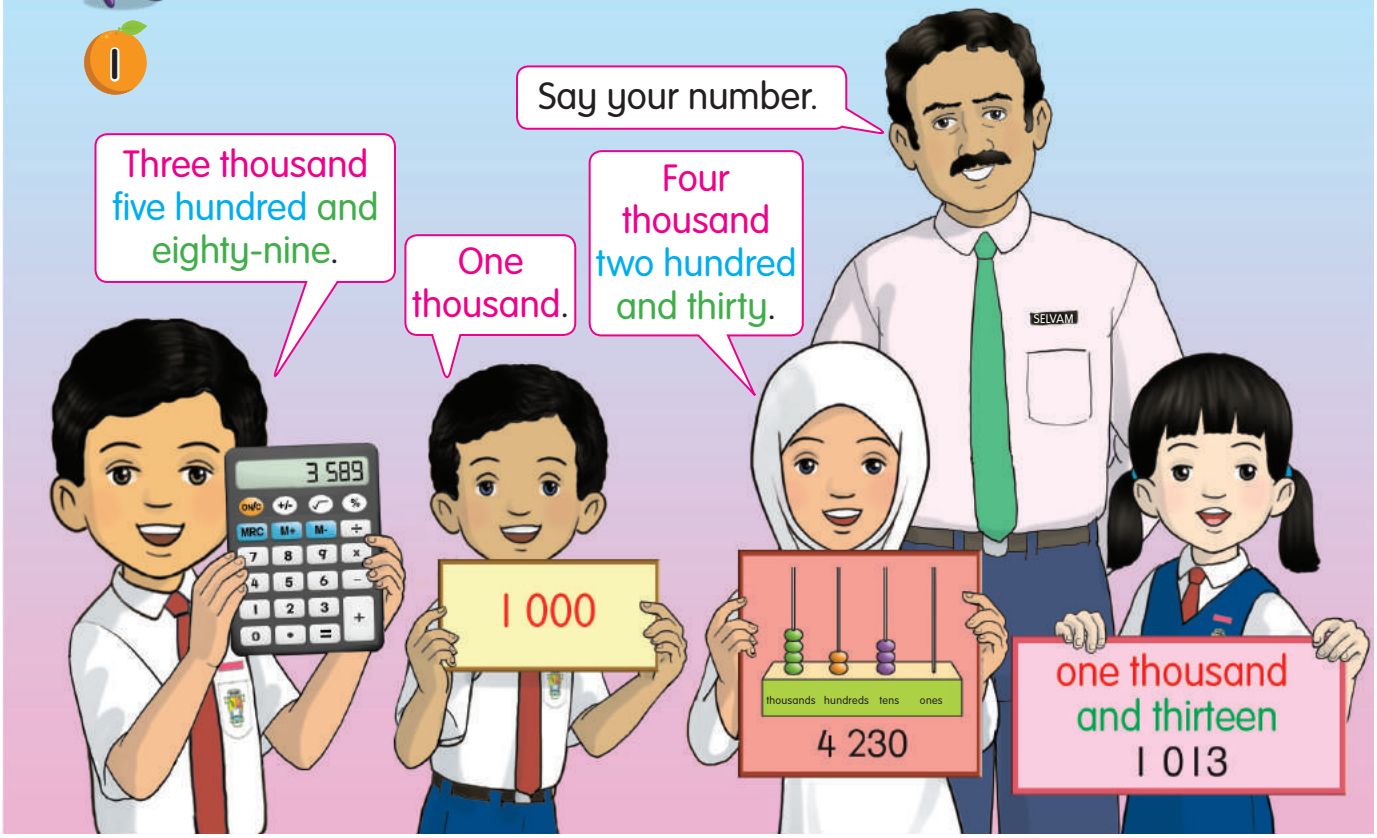
TEACHER'S NOTES

- Ask pupils to say the numbers found in the pictures.
- Integrate entrepreneurship.
- Carry out an activity of saying the numbers on number line.

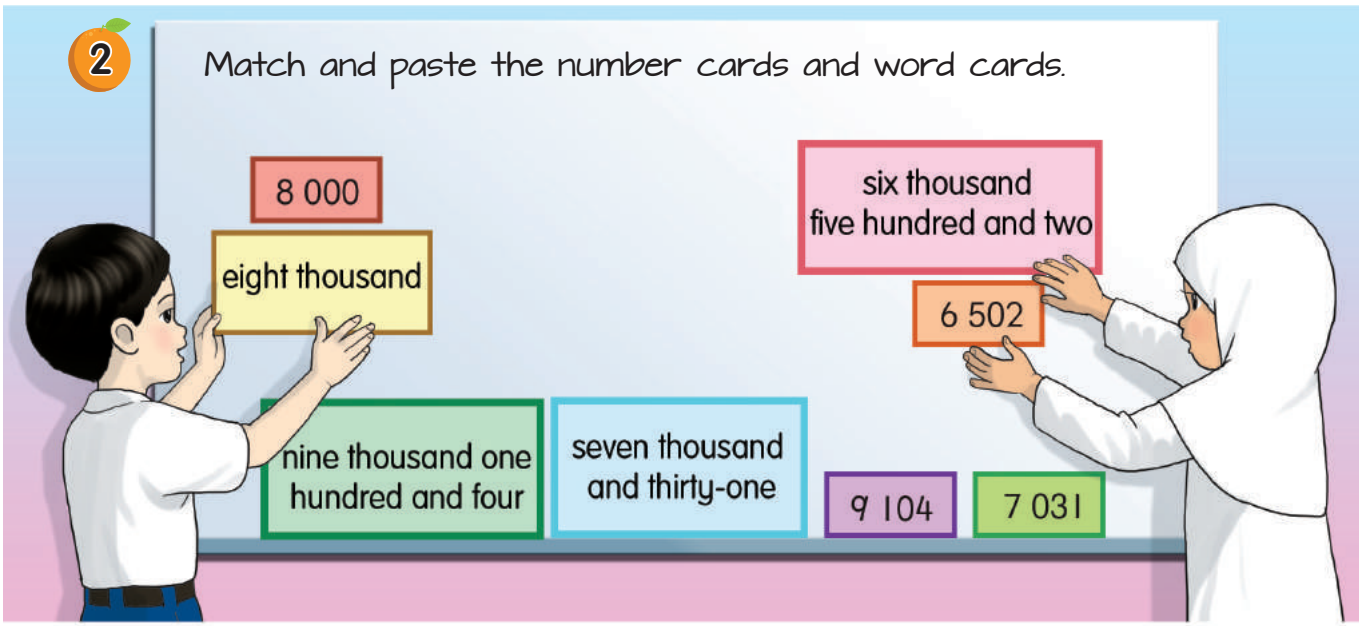
1.1.1 (i)
1.1.1 (ii)

RECOGNISE AND WRITE NUMBERS

1



2 Match and paste the number cards and word cards.



KPM

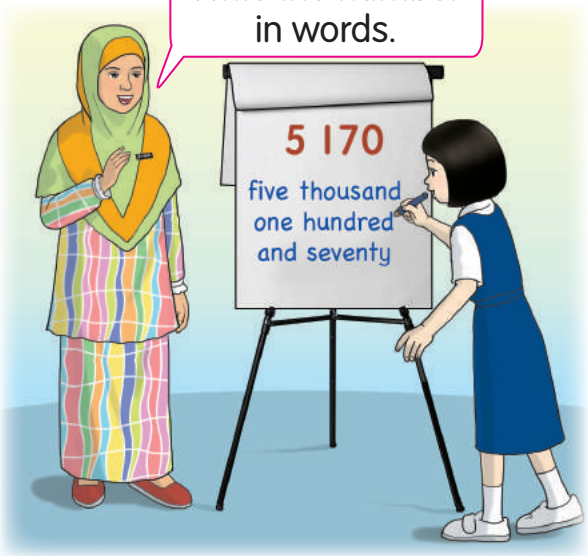
AB 1-2 TEACHER'S NOTES

- Carry out games or competitions of saying and reading numbers in words from newspapers, computer screen or flash cards.

1.1.1 (i)
1.1.1 (ii)
1.1.1 (iii)

3

Write the number in words.



4

Correct the wrong statement.

5

Complete these.

nine thousand and twenty-seven
9 027

6 514

two thousand and ninety

0 3 6 0

From the number cards, form as many four digit number as you can. Write the numbers in words and numerals.

AB 2 TEACHER'S NOTES

- Emphasise when writing numbers in words or saying the numbers, the "0" in between the digits in the number is not written or spoken. Example, 3 006 is pronounced as three thousand and six.
- Guide pupils to create other bridge maps as above.

1.2.1

KPM

LET'S TRY

1 Read the sentences. Write the numbers in words.

a 

There are about **3 000** birds in Kuala Lumpur Bird Park.

Source: https://www.pressreader.com/malaysia/harian-metro/20170701/281895888260508

b 

There are around **1 200** types of butterfly in Malaysia.

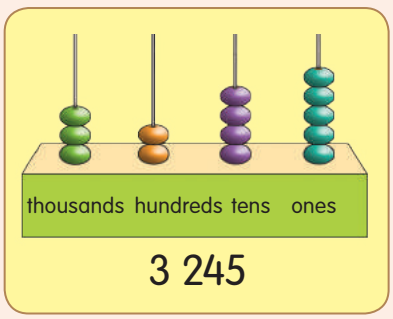
Source: http://omegabiru.blogspot.my/2011/04/rama-rama-kupu-kupu.html

c 

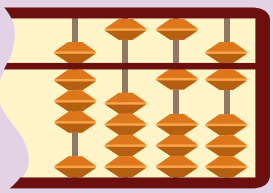
In Sabah, there are more or less **2 040** elephants.

Source: http://www.astroawani.com/berita-malaysia/mohon-peruntukan-rm19-juta-kawal-gangguan-gajah-liar-72335

2 Choose two matching cards.



3 245



eight thousand and sixteen

three thousand two hundred and forty-five

8 016

nine thousand three hundred and seven

3 Write the numbers in numerals.

a one thousand five hundred

b eight thousand two hundred and three

c four thousand and sixty

d three thousand and four

4 Write the numbers in words.

a 2 380 b 9 518 c 1 642 d 1 090

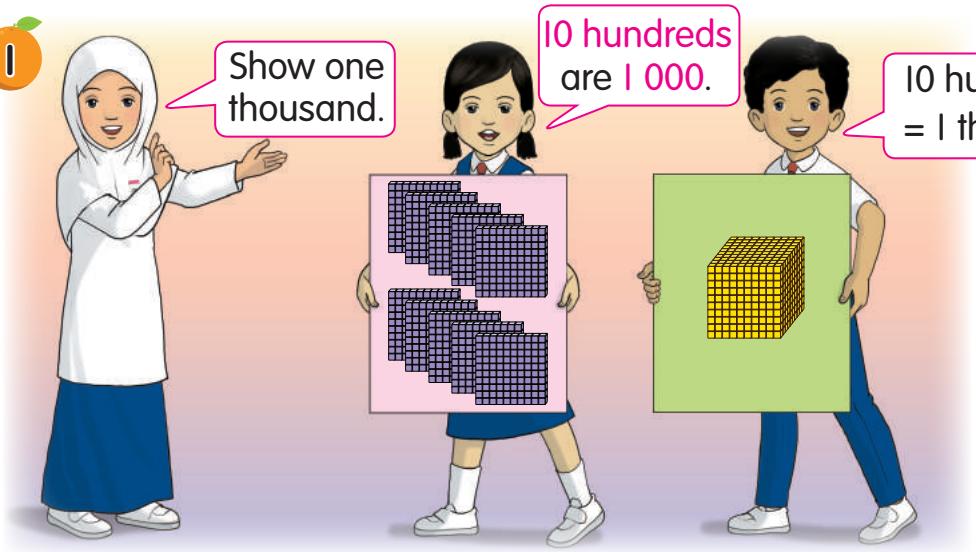
TEACHER'S NOTES

- Provide more exercises using cards or worksheets.
- Surf https://www.mathworksheets4kids.com/blocks/thousands-1.pdf

1.1.1
1.2.1

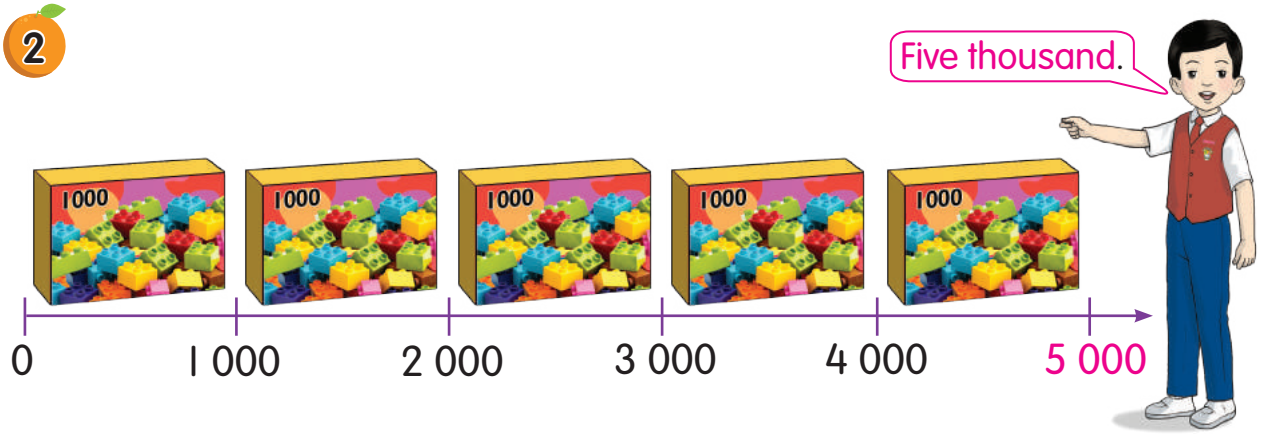
EXPLORE NUMBERS

1



SCAN THIS

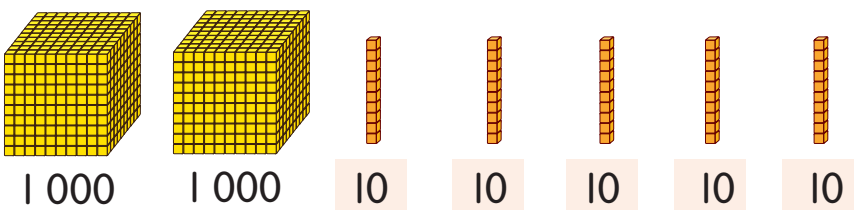
2



3

2 050

two thousand and fifty



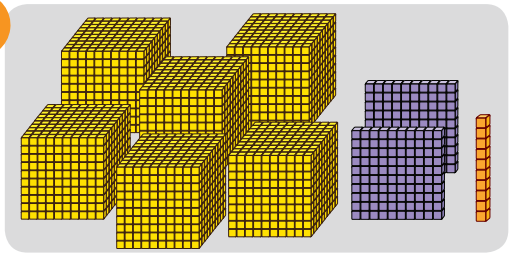
TEACHER'S NOTES

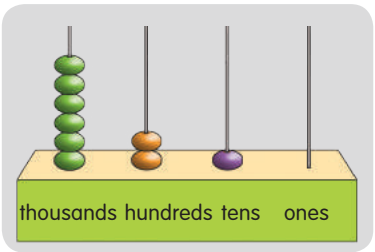
- Guide pupils to show quantities using counters, counting frames, and abacus. Carry out activities in groups or individually.
- Surf http://www.homeschoolmath.net/teaching/pv/place_value_thousands.php

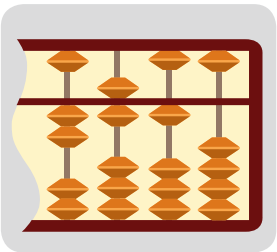
1.1.2 (i)

KPM

4

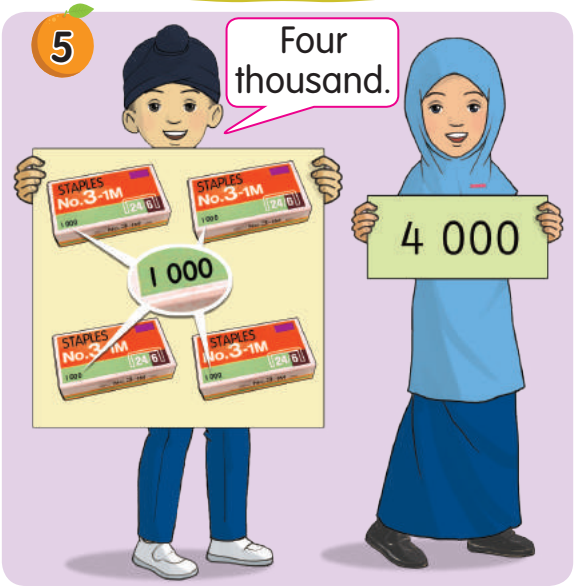


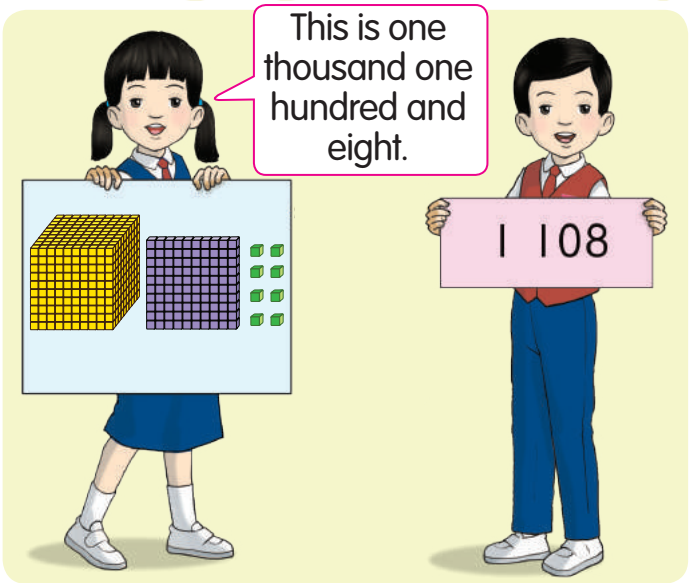




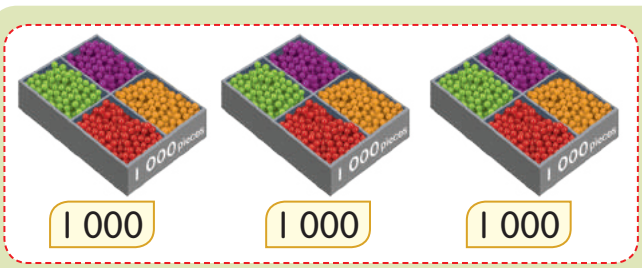
Which picture shows 6 210? Discuss.

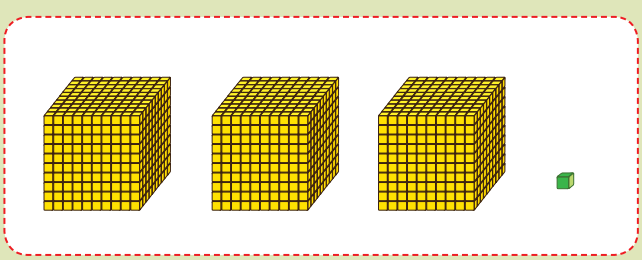
5





6





3 001

3 000

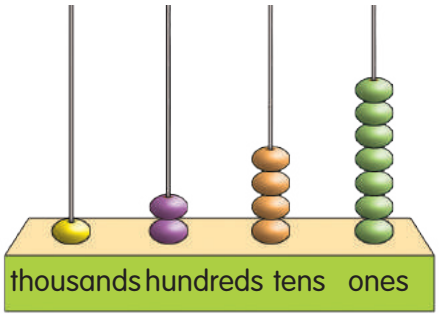
3 010

AB 3 TEACHER'S NOTES

- Carry out activity of matching groups of objects with number using flash cards.

I.1.2 (i)
I.1.2 (ii)

7



thousands	hundreds	tens	ones
1	2	4	7

What is the place value of each digit for 1 247?
What is its digit value?

Digit	1	2	4	7
Place value	thousands	hundreds	tens	ones
Digit value	1 000	200	40	7

Partition 1 247.

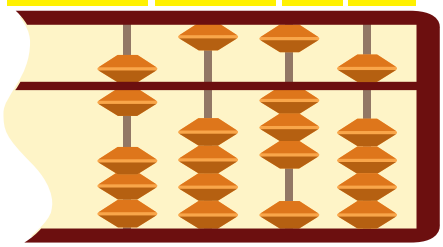
Partition based on place value

Partition based on digit value

8

State the place value and digit value for each digit in 6 035.

Place value: thousands | hundreds | tens | ones



Digit value: 6 000 | 0 | 30 | 5

Partition based on place value

6 thousands + 0 hundreds + ☐ + 5 ones

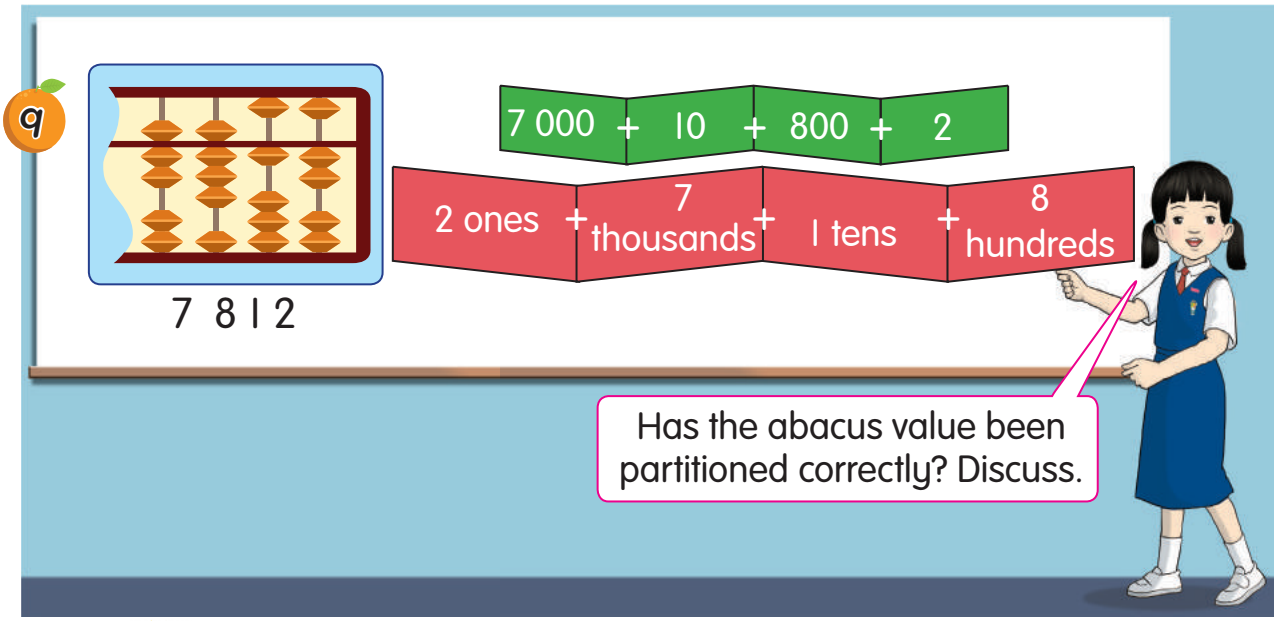
Partition based on digit value

☐ + 0 + ☐ + 5

TEACHER'S NOTES

- Guide pupils to determine the place value and digit value for any given numbers. Relate the partition to place value and digit value.
- Emphasise that the digit value is the value of a digit based on its position in the number.

1.4.1
1.4.2

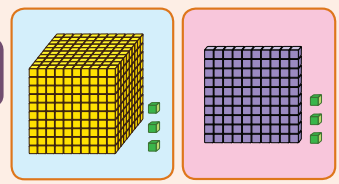


Look at the abacus above. If one lower bead on each rod is up, what will the number be? Partition the number.

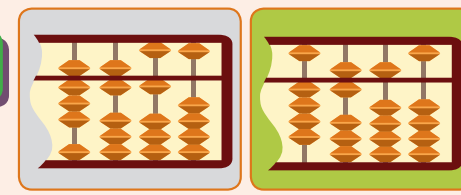
LET'S TRY

1 Choose the correct number card for the number shown.

a 1 003



b 4 650



2 2 917

The place value of 9 is ☐. The digit value of 2 is ☐. Digit 7 is in the ☐ place. Digit ☐ is in the tens place and its value is ☐.

3 Complete these.

a 1 836 ☐ + ☐ + ☐ + 6 ones

b 9 019 1 tens + ☐ + ☐ + ☐

c 4 507 4 000 + ☐ + ☐

d ☐ + 7 000 + ☐ 7 230

AB 4-5 TEACHER'S NOTES

- Carry out games to guess the number based on the place value, digit value, and number partition.
- Collect information on numbers in newspaper articles. Then, conduct activities to state the place value, digit value, and number partition.
- Emphasise that when partitioning numbers based on a digit value that involves digit 0, the digit 0 can be ignored.

1.4.1
1.4.2

COMPARE NUMBERS

1 Sales in conjunction with National Day.

caps	flags	badges	key chains
			
967	1 835	1 249	1 217

a Which item was sold more, caps or flags?

967 — three digits

1 835 — four digits

1 835 is **larger than** 967.

More flags were sold.

b Compare 1 835 with 1 249, which number is smaller?

	thousands	hundreds	tens	ones
equal thousands value	1	8	3	5
	1	2	4	9

2 hundreds is **smaller than** 8 hundreds.

1 249 is smaller than 1 835.

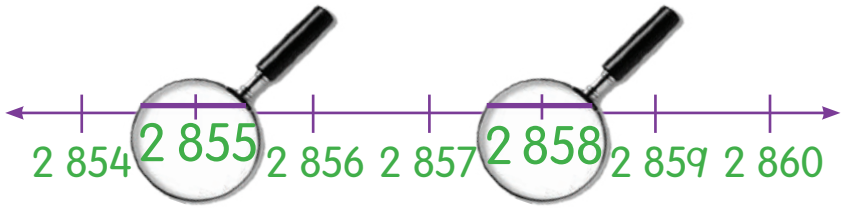
TEACHER'S NOTES

- Emphasise that a number with more digits has larger value.
- Emphasise that for two numbers with equal number of digits, pupils should compare the thousands value first, followed by hundreds, tens, and ones values.
- Surf https://www.superteacherworksheets.com/place-value/hungry-alligators3.pdf?up=1466611200

1.1.2 (iii)

KPM

2 858 is larger than 2 855. Show this on the number line.



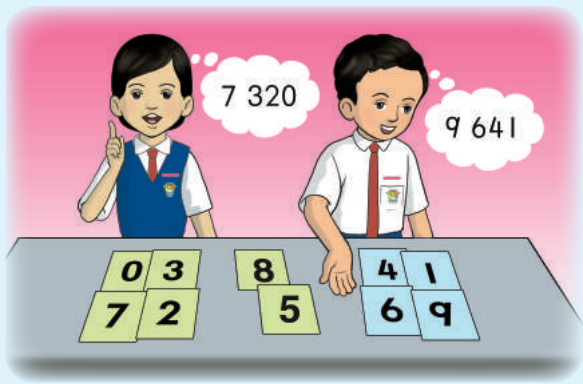
2 858 is on the right side of 2 855.

2 858 is **larger** than 2 855.

Say two numbers that are larger than 2 860.

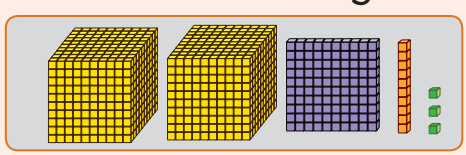
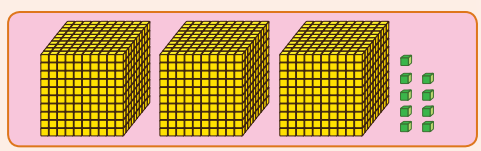
FUN PROJECT

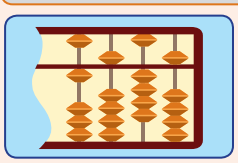
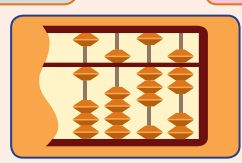
1. Take 4 cards from the number cards 0 to 9.
2. Ask your friend to take 4 cards too.
3. Form the largest four digit number.
4. Compare the two numbers.



LET'S TRY

1. State which value is larger.

a  or 

b  or 

2. Which number is smaller?

a 3 408 3 296 b 5 670 6 712

KPM

AB 6 TEACHER'S NOTES

- Carry out activities to compare any two numbers using base ten blocks and counters.
- Guide pupils to identify the numbers between, the numbers before, and the numbers after when comparing any two numbers.
- Prepare number cards from 0 to 9 for the Fun Project.

I.1.2 (iii)

ARRANGE AND COUNT NUMBERS

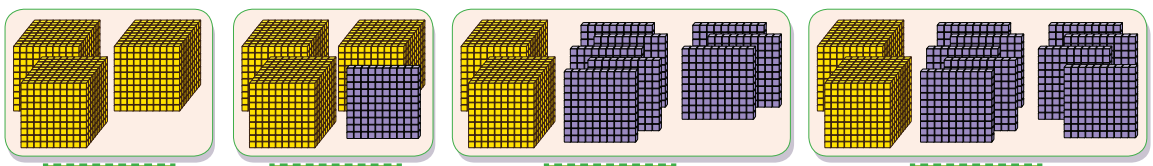
1

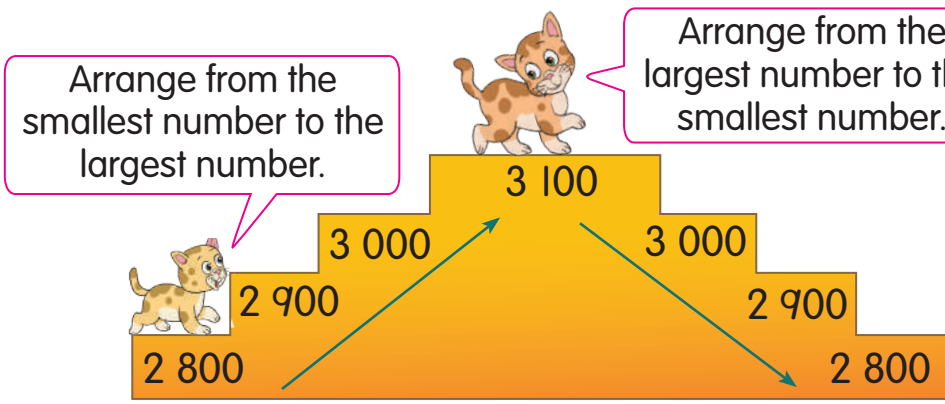
Replanting Project

Mangroves	Oil palms	Rubber trees	Coconut trees
			
3 000	3 100	2 800	2 900

Source: http://www.utusan.com.my/utusan/info.asp?y=2006&dt=1227&pub= Utusan_Malaysia&sec=Laporan_Khas&pg=lk_13.htm

Which number is the smallest? Which number is the largest?





Ascending order: 2 800 , 2 900 , 3 000 , 3 100

Descending order: 3 100 , 3 000 , 2 900 , 2 800

The **smallest** number is **2 800**.
The **largest** number is **3 100**.

TEACHER'S NOTES

- Discuss how to preserve nature.
- Emphasise that the number value becomes larger in ascending order and becomes smaller in descending order.

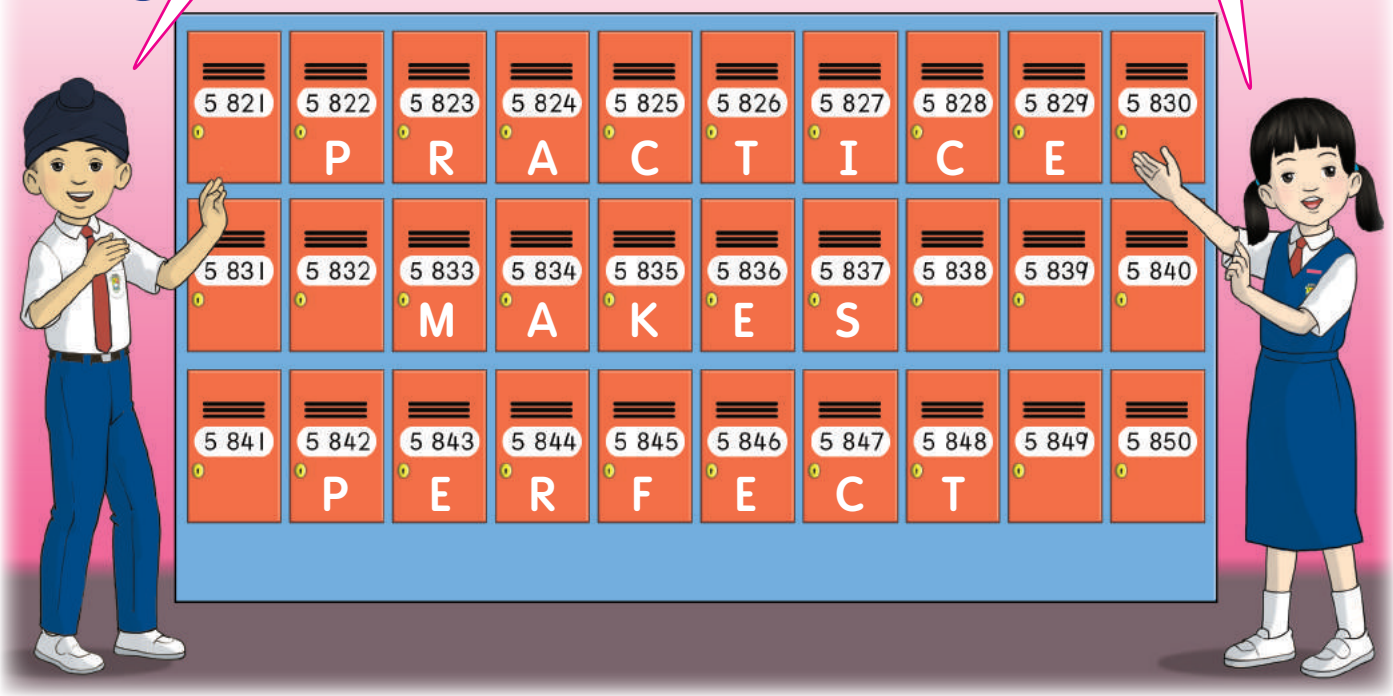
I.1.2 (iv)
I.3.1

KPM

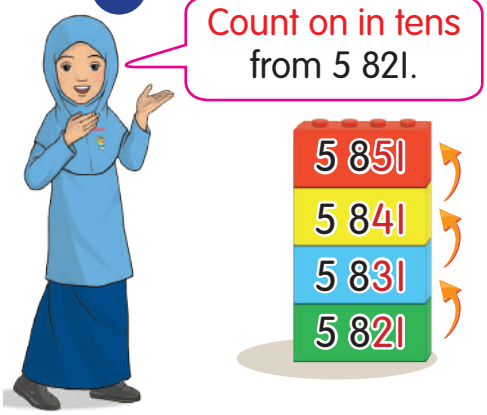
2

a Count on in ones from 5 821.

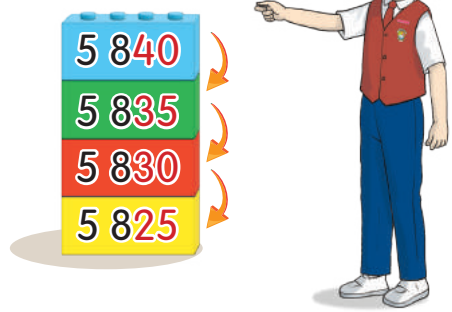
5 821, 5 822, 5 823, 5 824.



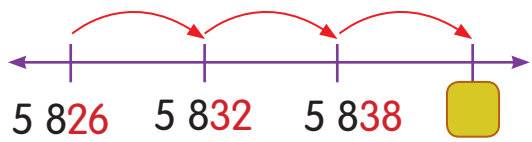
b Count on in tens from 5 821.



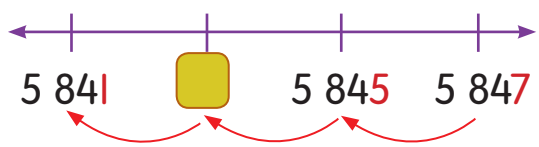
c Count back in fives from 5 840.



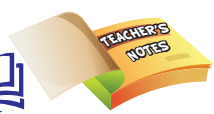
d Count on in sixes



e Count back in twos



Count and fill in the boxes.



- Ask pupils to count in twos up to tens based on the picture above.
- Discuss the relation between counting in threes, sixes, and nines, as well as the relation between counting in twos, fours, and eights.

1.3.1
1.3.2

3

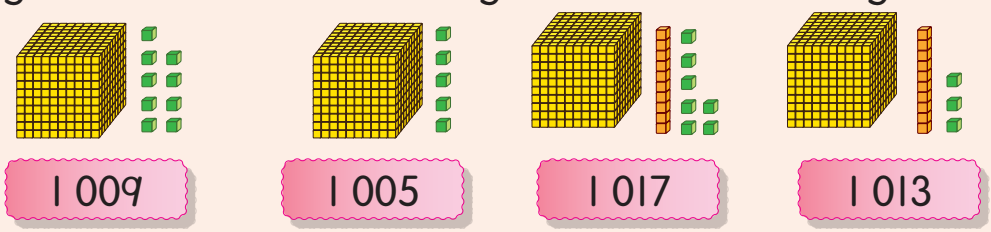
Count on in hundreds : 5 730, 5 830, ☐, ☐, 6 130.

Count back in thousands: 7 930, ☐, ☐, 4 930, 3 930.

LET'S TRY

1 Arrange the numbers in ascending order and descending order.

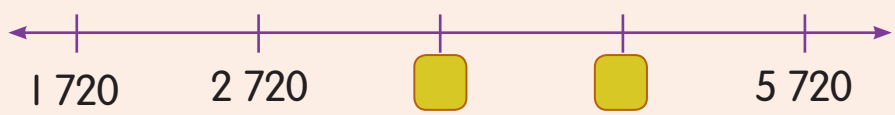
a



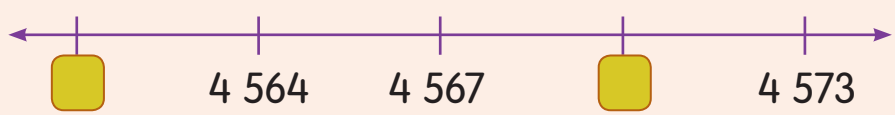
b 9 026 9 018 9 042 9 034

2 Complete these.

a

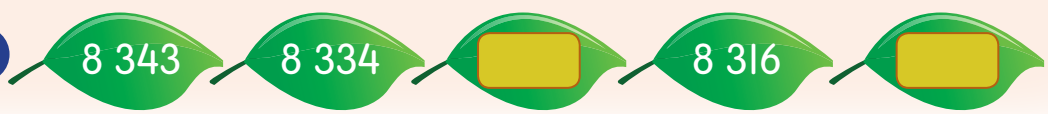


b



c 6 209 ☐ 6 009 5 909 ☐

d



AB 7-8 TEACHER'S NOTES

- Carry out simulation activities involving various number arrangements in ascending order and descending order.

1.1.2 (iv)
1.3.1
1.3.2

KPM

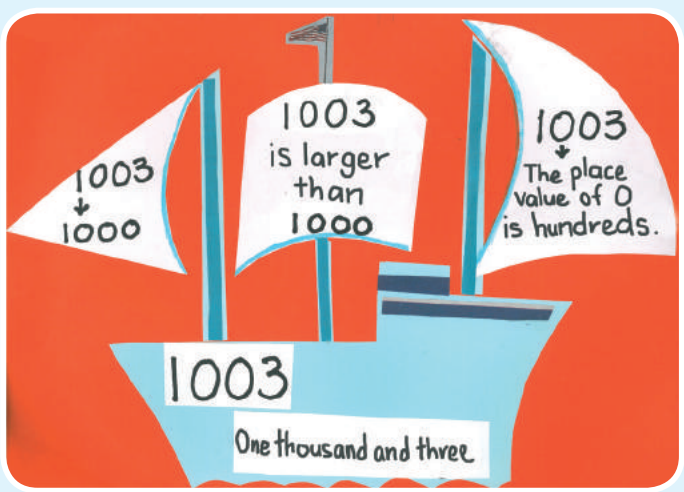
FUN PROJECT

Tools/Materials coloured paper, pens, glue, scissors

Participants 2 pupils per group

Method

1. Form a 4 digit number.
2. Write the number in numerals and words.
3. Write the place value and digit value.
4. Write the larger or smaller number.
5. Write the number before and the number after.
6. Cut, paste, and decorate your project.
7. Present your work.



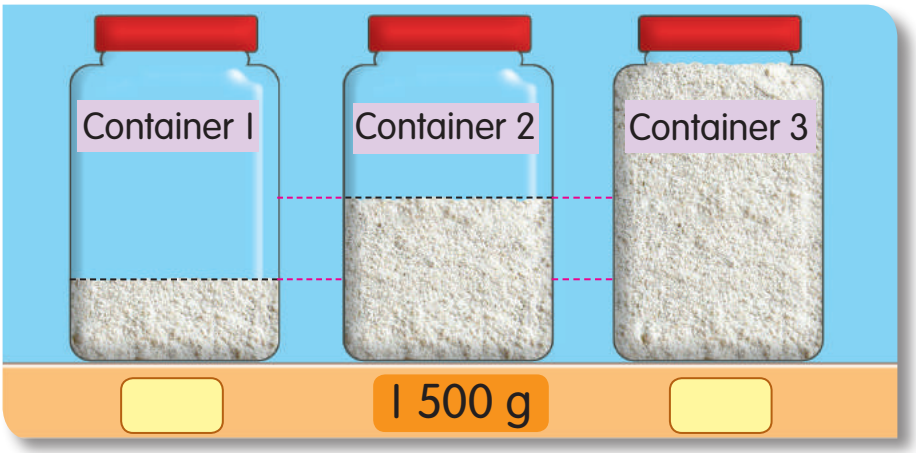
TEACHER'S NOTES

- Guide pupils to do the 21st Century Learning activities. Provide a topic and ask pupils to share ideas with their friends. Pupils then present their work.

1.1.1(i)
1.1.1(ii)
1.1.2(iii)
1.4.1

ESTIMATE MORE OR LESS

1



The mass of flour in container 2 is **more or less** half the mass of flour in container 3.

The mass of flour in container 1 is **less than** 1 500 g.

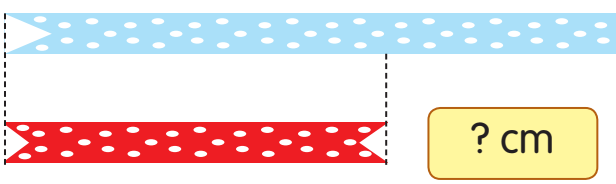
The mass of flour in container 3 is **more than** 1 500 g.

2 a

1 200 mℓ

more or less 600 mℓ

b



100 cm

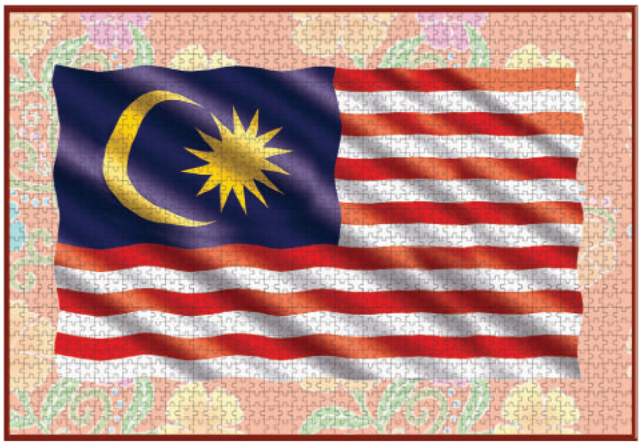
? cm

Estimate the length of the red ribbon.

- Discuss the importance of making estimations in daily life.
- Introduce words that are similar to estimation such as more or less, more than half, or more than.
- Guide pupils to estimate the quantity of other objects. Emphasise that quantity means the amount or number of an object.

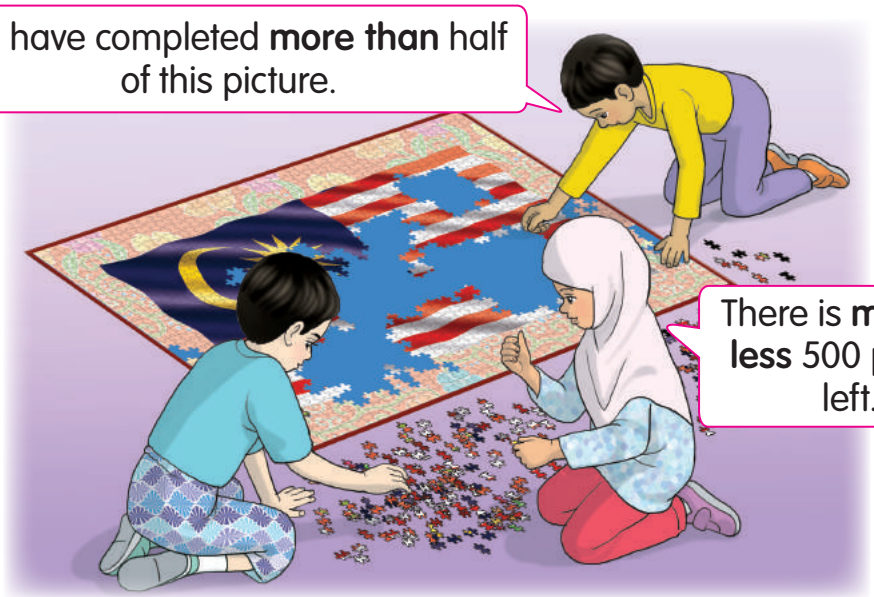
1.5.1

3



1 320 pieces

We have completed **more than** half of this picture.



There is **more or less** 500 pieces left.

LET'S TRY

Estimate the quantity. Say **more than**, **less than** or **more or less**.

a

2 400 pieces ?

b

1 000 pieces ?

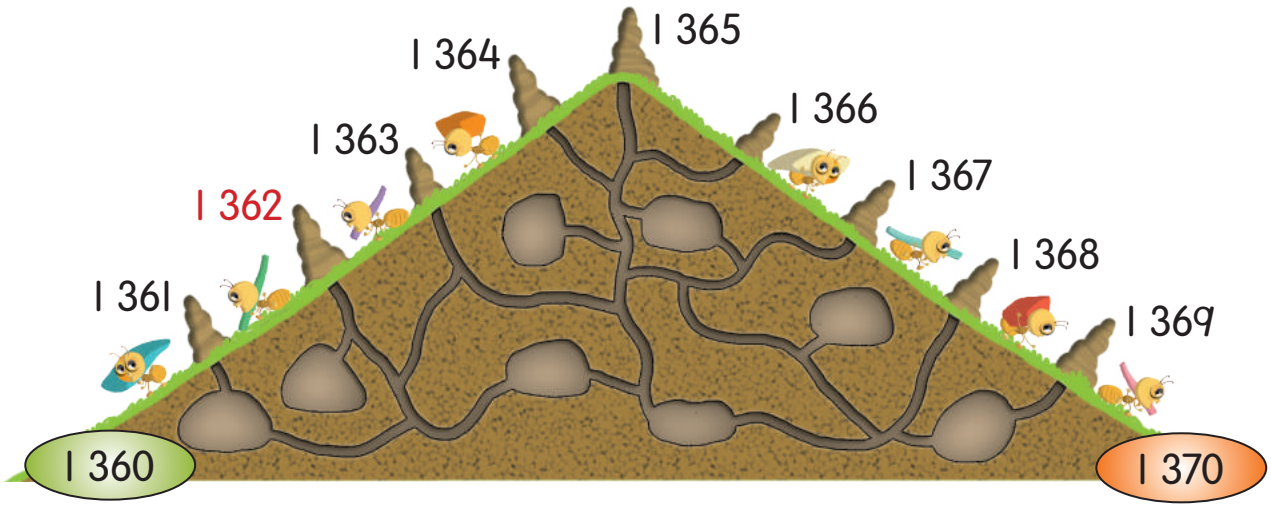
TEACHER'S NOTES

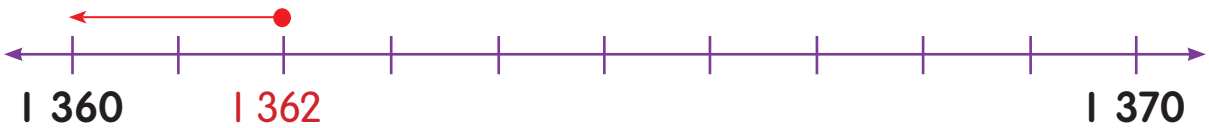
- Carry out simulation activities of estimating quantity such as estimating the number of objects, mass, length, and volume of liquid.

1.5.1

ROUND OFF NUMBERS

1 Round off 1 362 to the nearest **ten**.



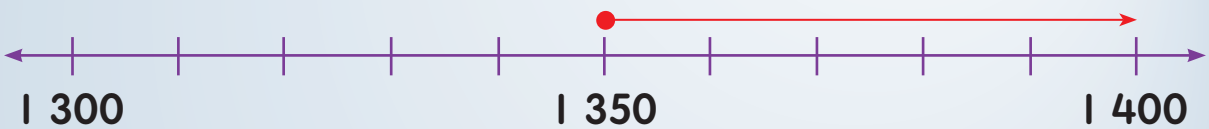


1 362 is between 1 360 and 1 370.

1 362 is nearer to 1 360.

1 362 when rounded off to the nearest **ten** becomes **1 360**.

2 Round off 1 350 to the nearest **hundred**.



1 350 when rounded off to the nearest **hundred** becomes **1 400**.

TEACHER'S NOTES

- Practise more rounding off numbers based on the picture above.
- Emphasise that the number in the middle of two consecutive hundreds must be rounded off to the larger hundred.

1.6.1

KPM

3

The highest highway bridge in Malaysia was opened on 29 November 2017.

Round off 5 820 to the nearest **thousand**.

5 820 → 6 000

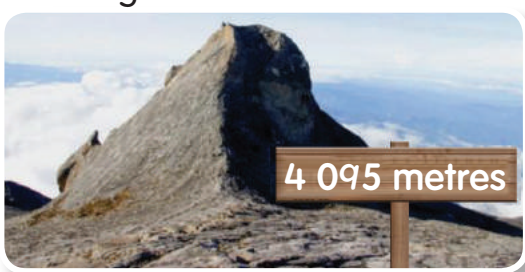
nearest thousand

If the hundreds digit is 5, 6, 7, 8 or 9, add 1 to the thousands value. The 8, 2 and 0 digits become 0.

5 820 when rounded off to the nearest **thousand** becomes **6 000.**

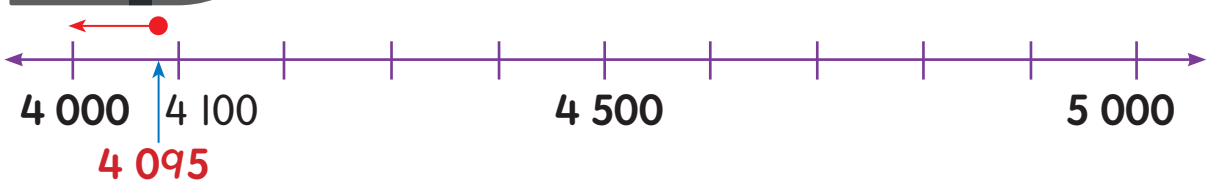
4

Height of Mount Kinabalu



Round off the height of the mountain to the nearest **thousand**.

Method 1



Method 2

4 095 → 4 000

nearest thousand

If the hundreds digit is 0, 1, 2, 3 or 4, maintain the thousands digit. Change the hundreds, tens, and ones digit to 0.

4 095 when rounded off to the nearest **thousand** becomes ☐.

AB 10-11 TEACHER'S NOTES

- Reinforce the rounding off concept through simulation activity such as comparing the number of steps, to the right or to the left, from the position of the number to the rounding off value.
- Emphasise that when rounding off any number to the nearest thousand, the digits involved are thousands digit and hundreds digit.

1.6.1

5

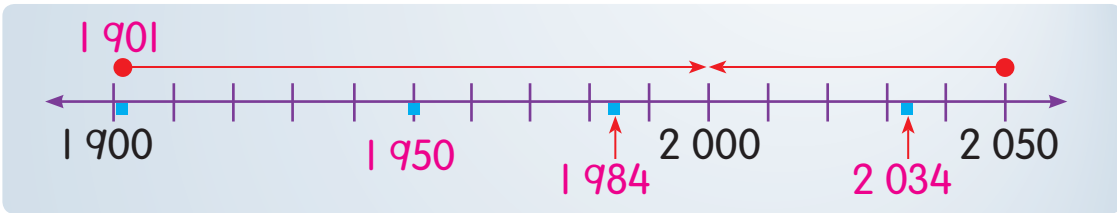
TOTAL BOOKS READ FOR NILAM PROGRAMME 2017
SKTTDI 1

August	1 984	September	1 950
October	2 034	November	1 901

Source: SKTTDI 1 school data

NILAM
NADI ILMU AMALAN MEMBACA

List the numbers that become **2 000** when rounded off to the nearest **thousand**.



1 901, **1 950**, **1 984** and **2 034** are **nearer** to **2 000**.

1 901, **1 950**, **1 984** and **2 034** become **2 000** when rounded off to the nearest **thousand**.

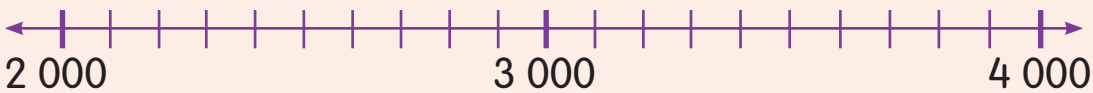
A drop of ink smudged the hundreds digit in a number. The number becomes 4 000 when rounded off to the nearest **thousand**. What are the possible hundreds digits?

LET'S TRY

1 Round off 7 302 and 8 519 to the:

a nearest ten. b nearest hundred. c nearest thousand.

2 These numbers become 3 000 when rounded off to the nearest **thousand**. By referring to the number line, write those five numbers.

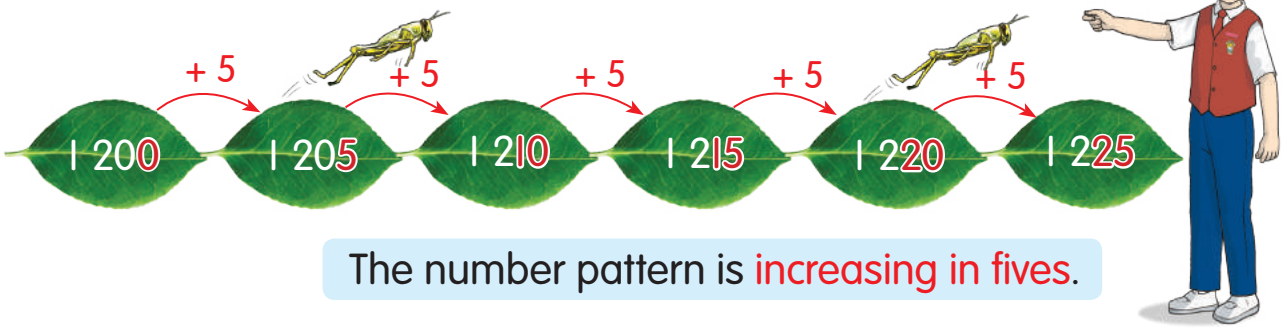


AB 11 TEACHER'S NOTES

- Emphasise that the number in the middle of two consecutive thousands must be rounded off to the larger thousand.

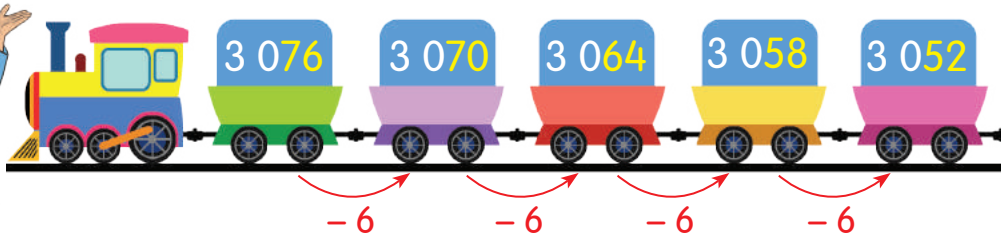
NUMBER PATTERNS

1 What is the number pattern below?



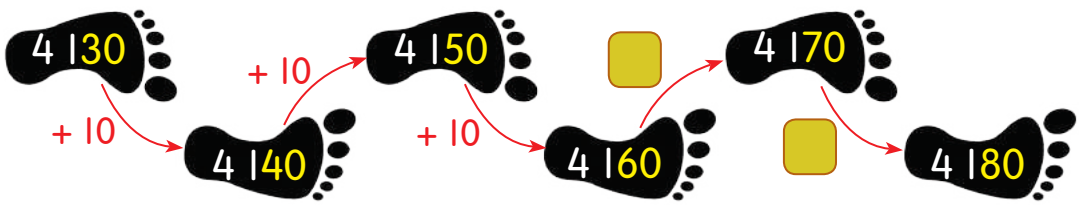
The number pattern is increasing in fives.

2



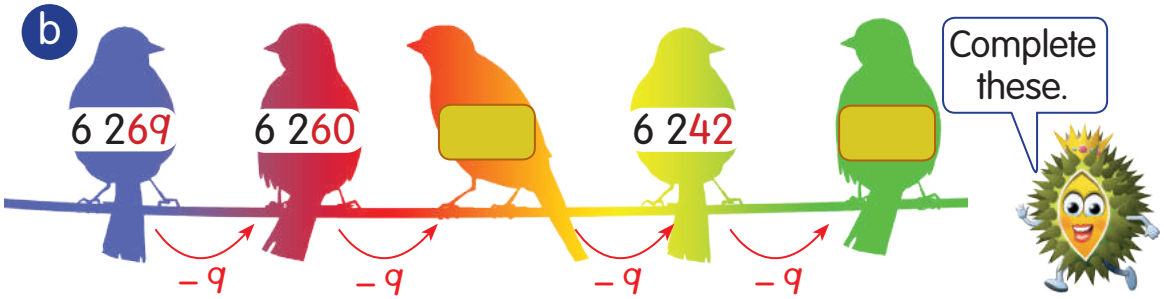
The number pattern is decreasing in sixes.

3 a



The number pattern is _____.

b

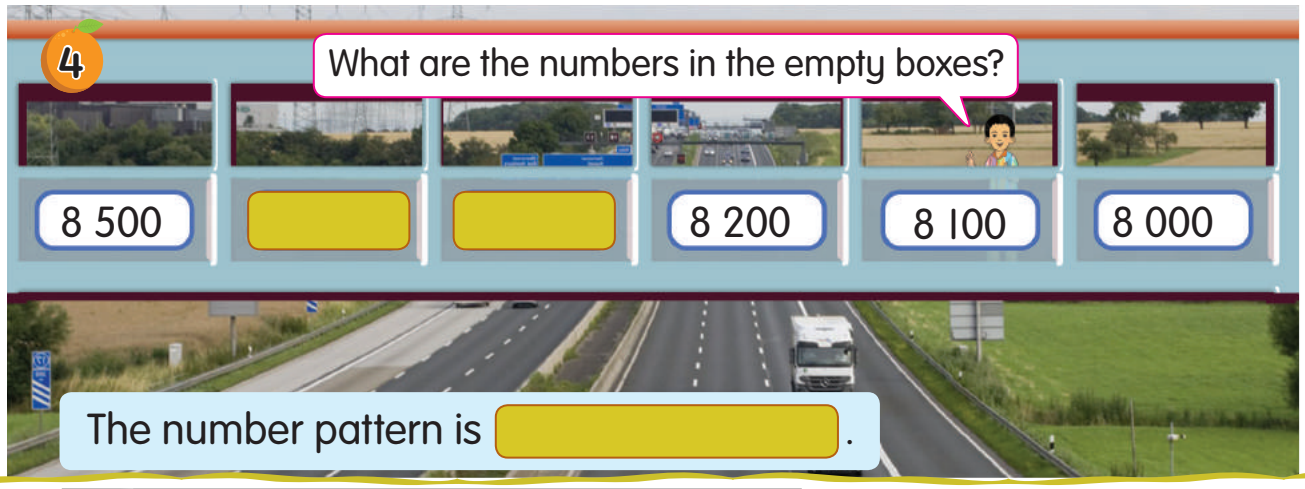


The number pattern is _____.

- Emphasise that the numbers become larger in ascending number patterns and become smaller in descending number patterns.

1.7.1
1.7.2

4 What are the numbers in the empty boxes?



The number pattern is _____.

5

Cash in (RM)	Cash out (RM)	Balance (RM)
		4 070
1 000		5 070
1 000		
1 000		
1 000		8 070

Say the numbers in the empty boxes. What is the pattern?

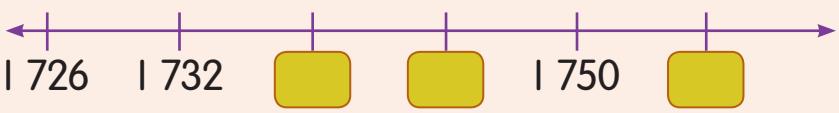
4 070, 5 070, _____, _____, 8 070

The number pattern is _____.

LET'S TRY

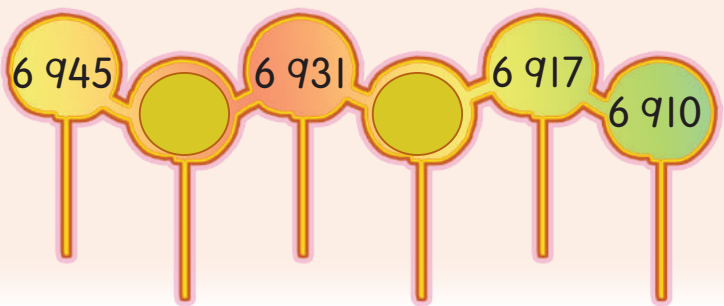
Fill in the blanks. State the number patterns.

a



b

c



d

AB 12 TEACHER'S NOTES

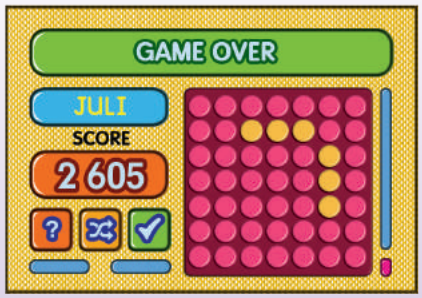
- Prepare a set of cards or use number lines with various number patterns to reinforce pupils' understanding of number patterns.
- Encourage pupils to form ascending order and descending order number patterns.

1.7.1
1.7.2

KPM

SOLVE THE PROBLEMS

1 Juli's and Stacy's computer game scores.



a Which digit has the same value?

b Whose score is smaller? Explain.

Method Arrange the digits according to the place values.

a Create a table.

thousands	hundreds	tens	ones
2	6	0	5
2	7	1	9

The digit with the same value is **2**.

b

Look again at the place value table in a.

6 hundreds is smaller than 7 hundreds.
So, **2 605** is **smaller than 2 719**.

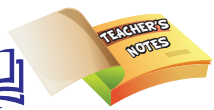
2 605 is Juli's score.

Juli's score is **smaller**.

2 605 2 719

The two numbers above will become 3 000 when rounded off to the nearest ____ .

What is the answer?



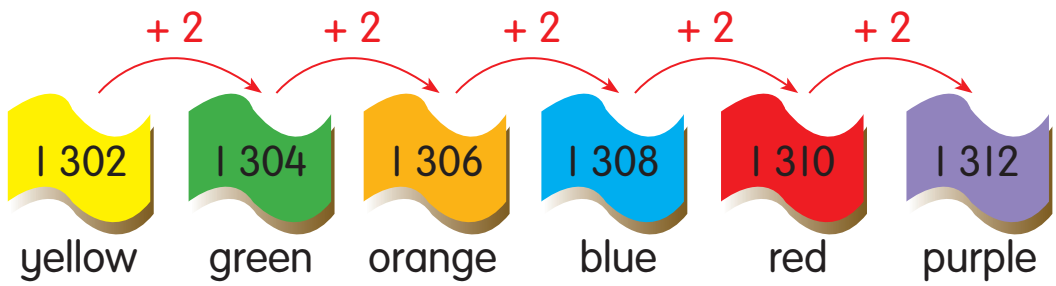
- Show various strategies to solve problems such as simulation and drawing diagram.

1.8.1

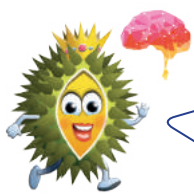
2 Below are the positions of several chalets.

The yellow chalet is the first chalet. The purple chalet is the sixth chalet. What is the number of the purple chalet?

Method Look for a pattern.



The number of the purple chalet is **1 312**.

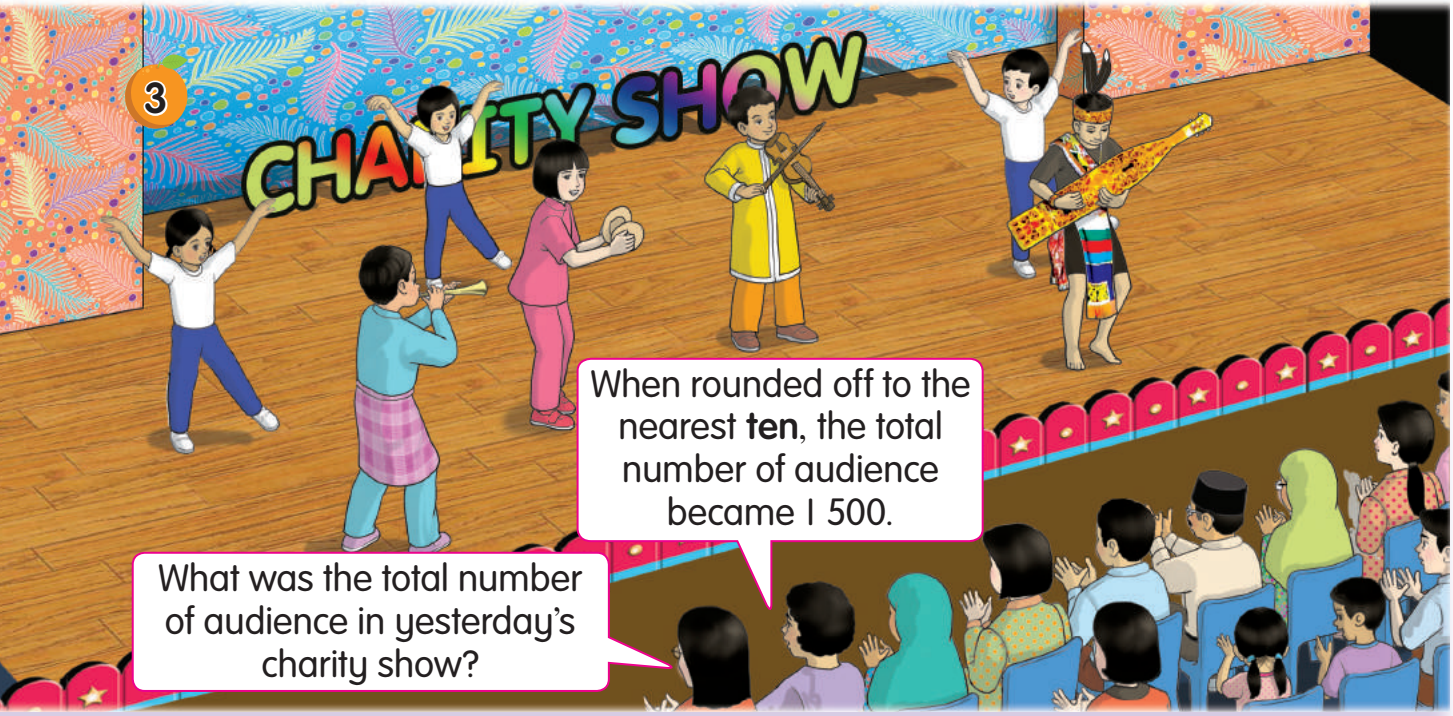


The last chalet is the 10th chalet. The chalet numbered 1 314 is the fourth chalet when arranged in descending order. Explain.

TEACHER'S NOTES

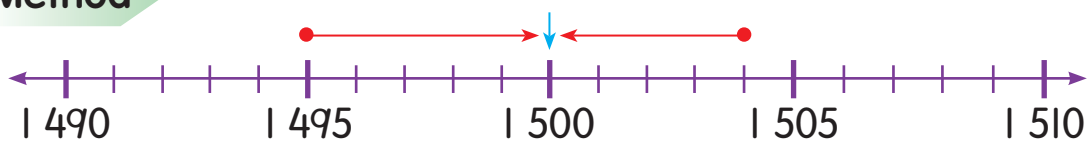
- Guide pupils to solve the problems using a number line or simulation to prove the answers.
- Emphasise steps of problem solving such as finding important information.

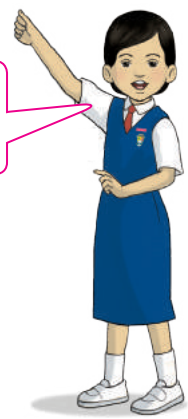
3



Based on the conversation above, what is the possible number of audience?

Method





1 495 to 1 499 and 1 501 to 1 504 when rounded off to the nearest **ten** becomes 1 500.

The possible number of audience is **1 495 to 1 499** and **1 501 to 1 504**.

The number of audience on the next day is 1 520. Round off the number to the nearest **thousand**.

AB 13-14 TEACHER'S NOTES

- Emphasise that working backwards is the way to get answers based on the last information given.

1.8.1

LET'S TRY

Solve the problems.

a The table shows the number of recycled tins collected by year 3 pupils.

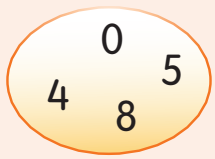
i. Write the number of tins in words.

ii. Which total number of tins is more?

Recycled Tins

Class	Total number of tins
Bijak	1 123
Cerdas	976

b



Amir used all the digits on the left to form a four digit number. The digit 5 is in the hundreds place.

i. What is the number?

ii. Partition the number according to digit value.

c

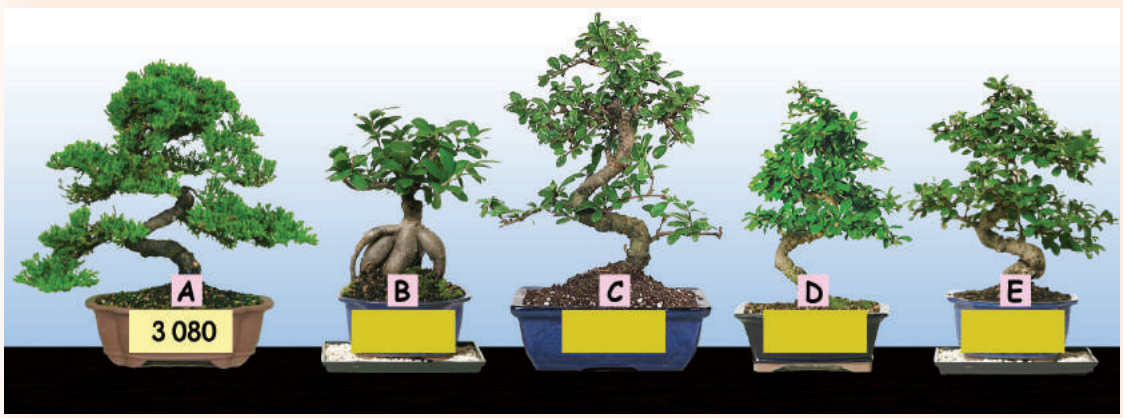
Day	Number of stickers
Monday	1 006
Tuesday	998
Wednesday	1 010
Thursday	1 002

The table shows the number of stickers sold in four days.

i. Round off 998 to the nearest thousand.

ii. Arrange the numbers in the table in ascending order.

d



SCAN THIS

Pots A, B, C, D and E are arranged in a row. Count back in threes starting from pot A. What is the number for pot E?

TEACHER'S NOTES

- Provide more exercises in problem solving.
- Encourage pupils to use various strategies of problem-solving such as working backwards and making models.

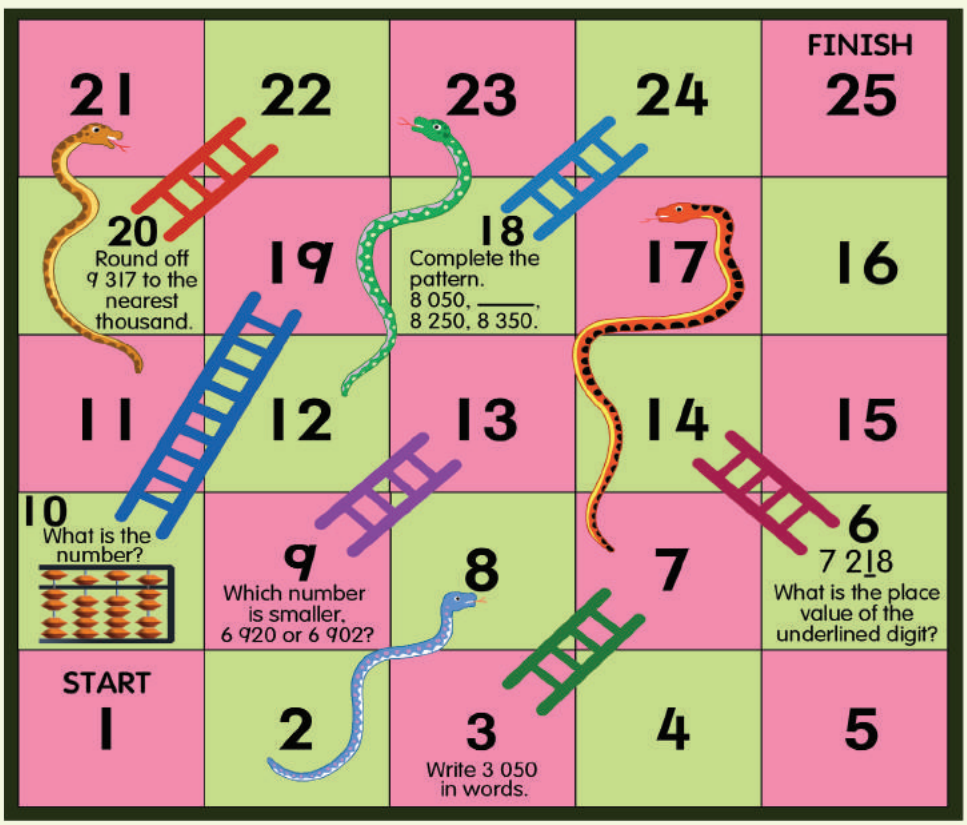
SNAKES AND LADDERS

Tools/Materials dice, markers

Participants 3 players

Method

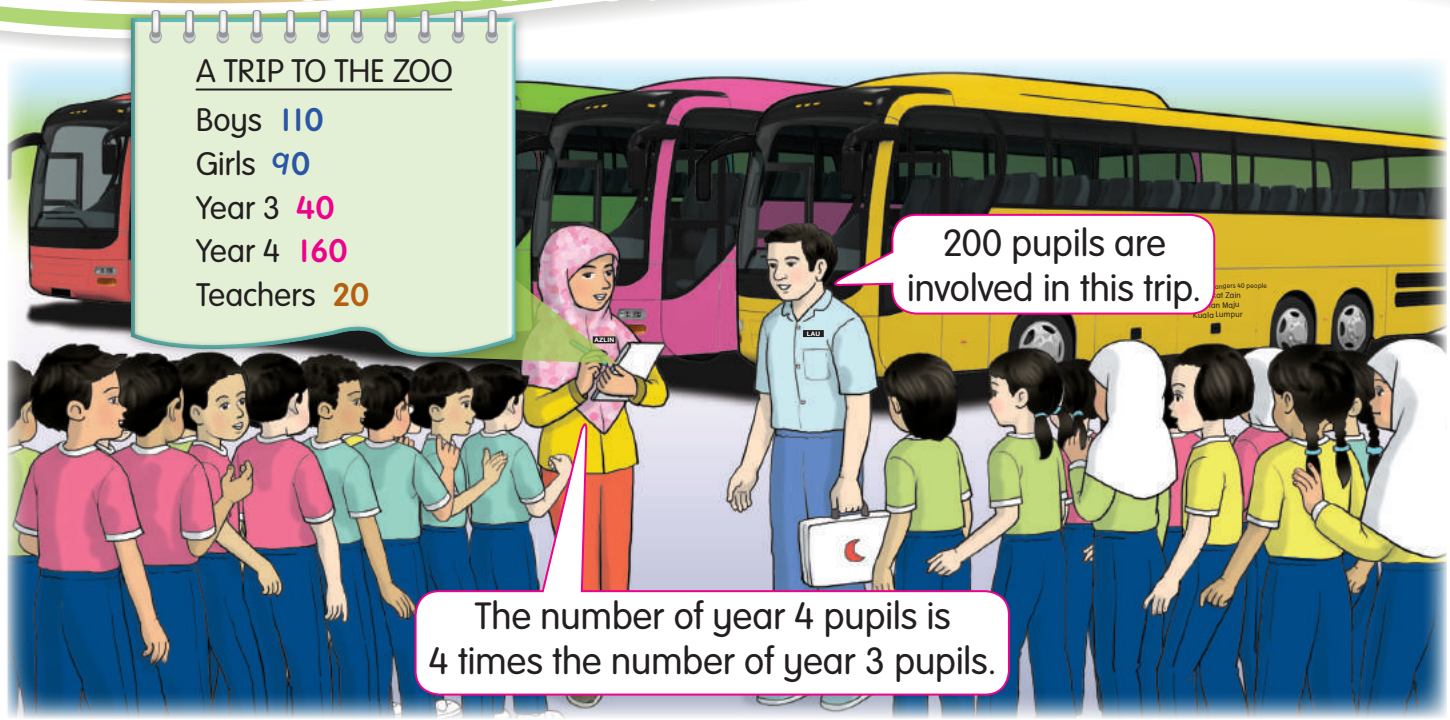
1. The first player throws the dice. Move the marker according to the number on the dice.
   - a. If the marker lands in a box with a question, answer the question. If the answer is correct, go up the box at the top of the ladder. If the answer is wrong, stay in the box at the foot of the ladder.
   - b. If the marker lands in the box with a snake head, slide down to the bottom of the snake's tail.
2. The next player takes his/her turn. Repeat step 1.
3. The first player who reaches the FINISH box wins.

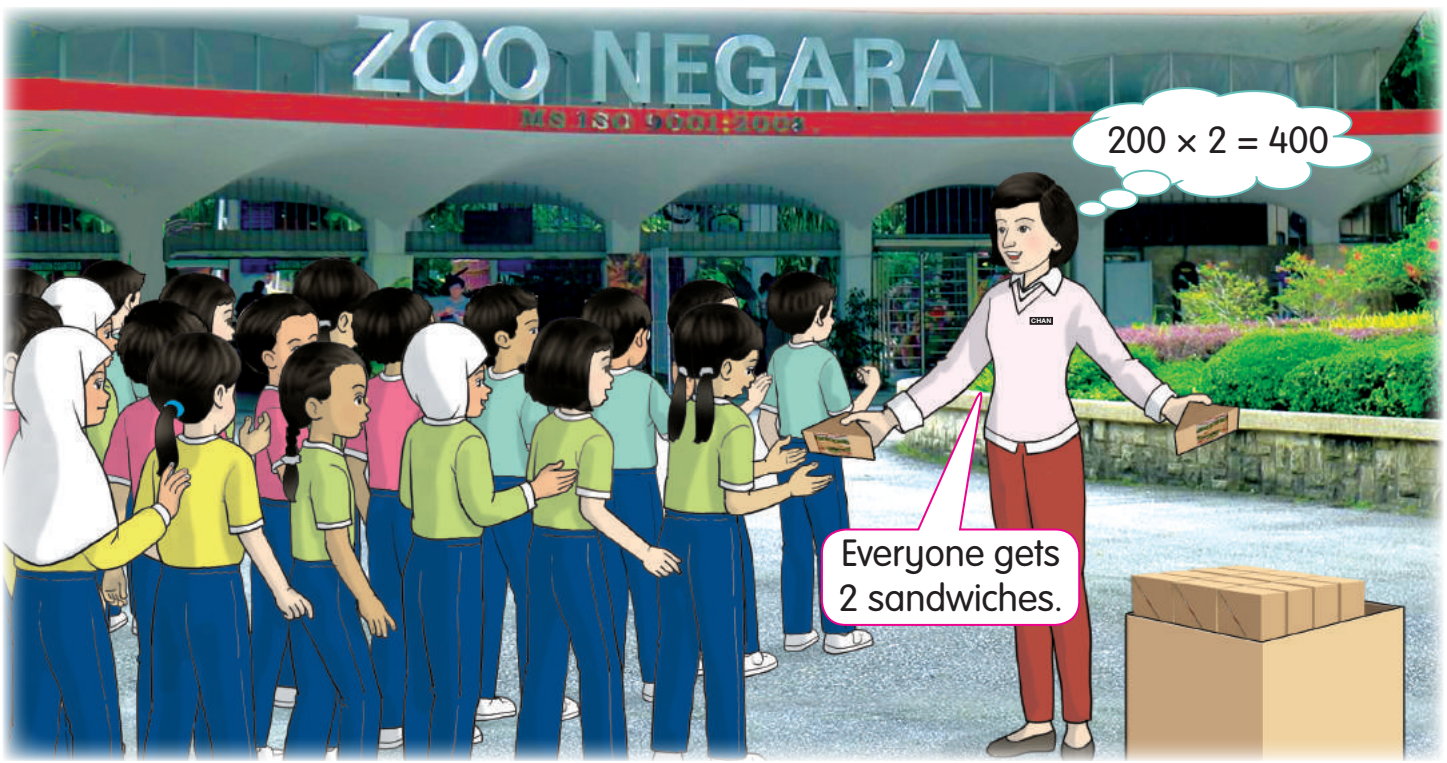


- Ask players to move their markers backwards if the number on the dice exceeds the 25th box.
- Instil tolerance and honesty while playing the game.

I.1.1 (i), I.2.1, I.1.2 (iii), I.4.1, I.6.1, I.7.2

2 ADDITION, SUBTRACTION, MULTIPLICATION, AND DIVISION





TEACHER'S NOTES

- Ask pupils to talk about the pictures. Relate the operations involved such as addition, subtraction, multiplication, and division.

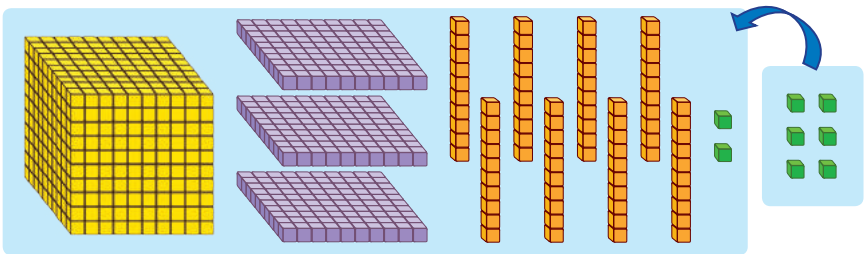
2.1, 2.2
2.3, 2.4

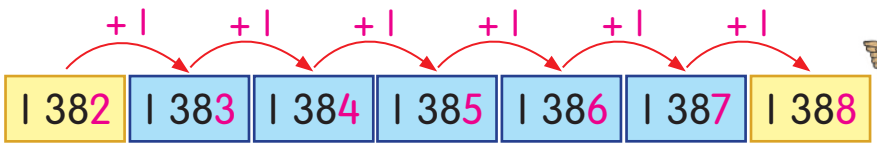
ADDITION

1 What is the total number of birds and elephants?

1 382 + 6 = ☐

Method 1





Method 2

thousands	hundreds	tens	ones
1	3	8	2
+			6
1	3	8	8

1 382 + 6 = **1 388**

The total number of birds and elephants is 1 388.

TEACHER'S NOTES

- Relate to daily situations such as the number of fruit yields in an orchard.
- Guide pupils to add using counters.
- Emphasise that to add in vertical form, digits should be arranged according to the correct place value.

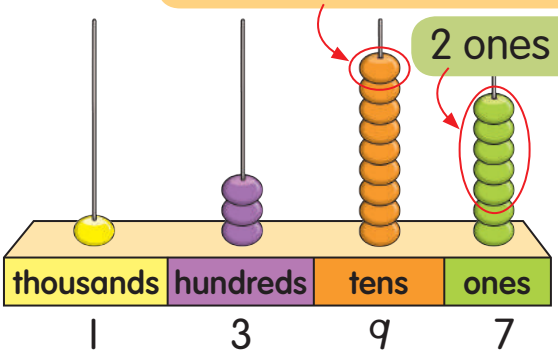
2 Add 1 382 and 15.

1 382 + 15 = ☐

Method 1

8 tens + 1 tens = 9 tens

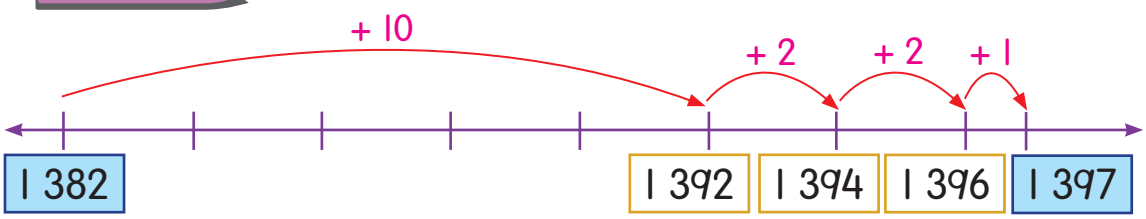
2 ones + 5 ones = 7 ones



Method 2

	1	3	8	2
+			1	5
	1	3	9	7

Method 3



1 382 + 15 = **1 397**

3 Calculate the sum of 104 and 1 382.

104 + 1 382 = ☐

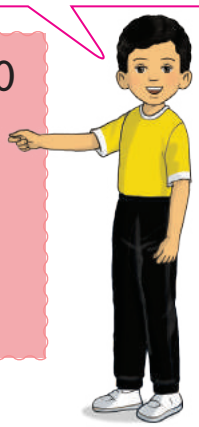
```
  1 0 4
+ 1 3 8 2
  1 4 8 6
```

104 + 1 382 = **1 486**

Check by using estimation. The answer is reasonable.

1 382 → 1 400
104 → 100

```
  1 4 0 0
+   1 0 0
  1 5 0 0
```



TEACHER'S NOTES

- Emphasise that addition starts from ones, followed by tens, hundreds, and thousands.
- Encourage pupils to use simulations, number lines, representations, and diagrams to add any two numbers.

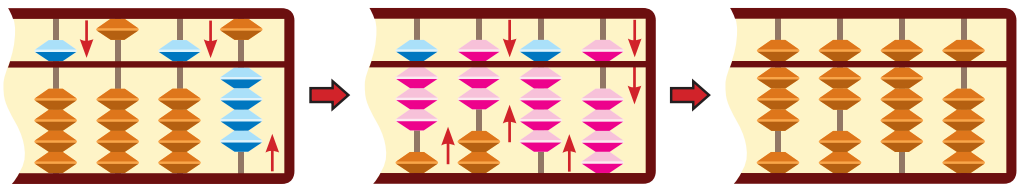
2.1.1

4 5 054 + 3 741 = ☐

Method 1

$$\begin{array}{r} 5\ 0\ 5\ 4 \\ +\ 3\ 7\ 4\ 1 \\ \hline 8\ 7\ 9\ 5 \end{array}$$

Method 2



Up 5 054. Add 3 741. The answer is 8 795.

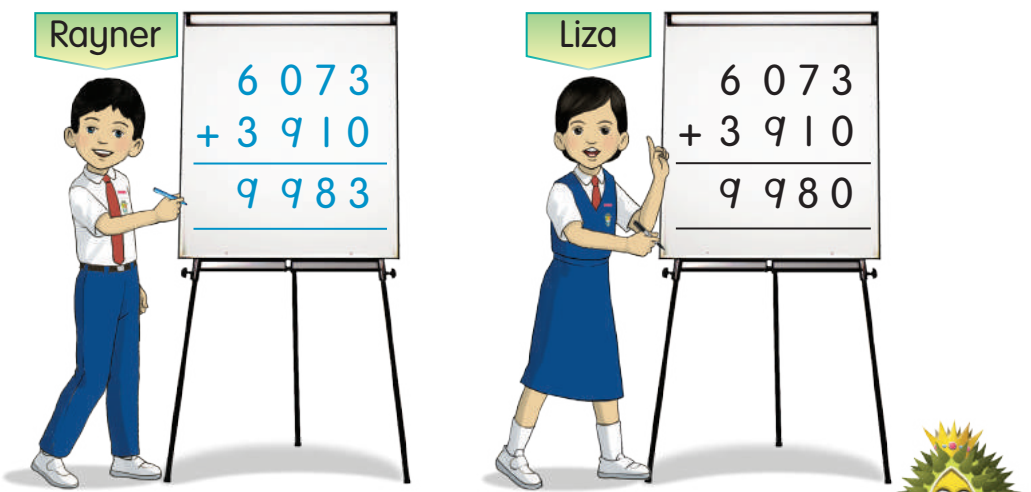
5 054 + 3 741 = **8 795**

SCAN THIS

Butterflies at Taman Bunga Indah

Type of Butterfly	Number
	5 054
	3 741

5 Rayner and Liza do the calculations.



- Practise more on adding two numbers with an abacus using little friends of 5, for example 4 and 1, 3 and 2.
- Carry out quizzes such as quick calculation.

ZOO TICKETING COUNTER

6

5 602 tickets have been sold.

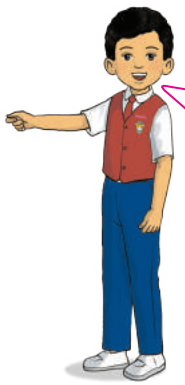
Today's promotion is up to 5 648 tickets only.

How many more tickets need to be sold?

5 602 + ☐ = 5 648

$$\begin{array}{r} 5\ 6\ 0\ 2 \\ +\quad\ 4\ 6 \\ \hline 5\ 6\ 4\ 8 \end{array}$$

tens	ones
0 4 → 4	2 6 → 8



I look for the number pairs.

5 602 + **46** = 5 648

46 more tickets need to be sold.

MIND CHALLENGE

0 8 2 7 1 6 5

Arrange the digits above to get the total of 7 958.

$$\begin{array}{r} \square\ \square\ \square\ \square \\ +\quad\ \square\ \square\ \square \\ \hline 7\ 9\ 5\ 8 \end{array}$$

LET'S TRY

1 Add.

a $\begin{array}{r} 3\ 4\ 9\ 6 \\ +\quad\ 3 \\ \hline \square \end{array}$

b $\begin{array}{r} 2\ 1 \\ +\ 6\ 0\ 7\ 5 \\ \hline \square \end{array}$

c $\begin{array}{r} 4\ 1\ 5\ 3 \\ +\quad 8\ 2\ 4 \\ \hline \square \end{array}$

2 Find the total. a 209 and 8 760. b 7 351 and 2 538.

3 Complete these.

a 6 075 + ☐ = 8 098 b ☐ + 2 834 = 9 946

AB 18 TEACHER'S NOTES

- Surf https://www.ezschool.com/play/grade3/MultipleChoice/Game/474
- Surf https://www.youtube.com/watch?v=J8KJH7zb5E

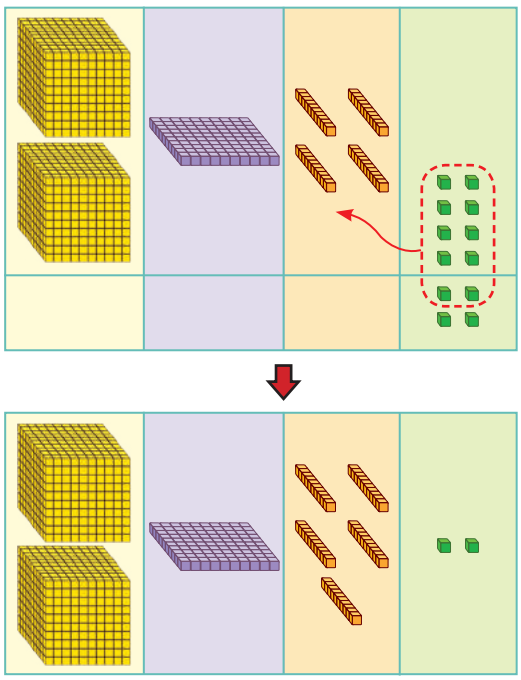
2.1.1

MORE ADDITION

1

What is the total number of tiles used?

2 148 + 4 = ☐



thousands	hundreds	tens	ones
2	1	4	8
+			4
		1	2

		1	
2	1	4	8
+ 0	0	0	4
2	1	5	2

$$\begin{array}{r} {\scriptstyle 1} \\ 2\,148 \\ +\quad\ 4 \\ \hline 2\,152 \end{array}$$

2 148 + 4 = **2 152**

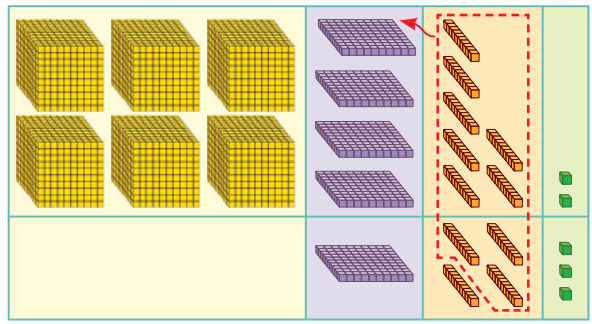
The total number of tiles used is **2 152** pieces.

- Ask pupils to add four digit numbers and one digit numbers by counting on using number lines.
- Emphasise that when the total of ones digit becomes 10 or more, carry out regrouping.

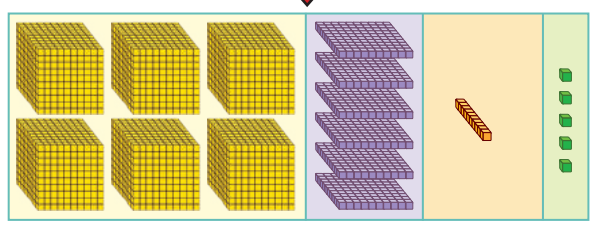
2 Add 6 472 and 143.

6 472 + 143 = ☐

Method 1

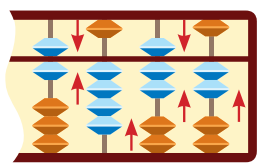


6	4	7	2
+	1	4	3
		11	5

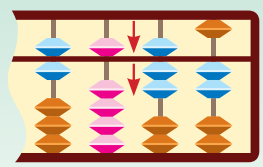


	1		
6	4	7	2
+	1	4	3
6	6	1	5

Method 2

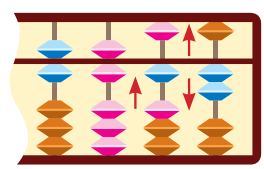


Up 6 472.



5 = 1 + 4

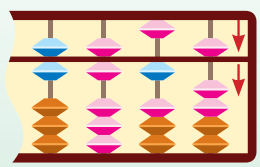
Add 143.
Add 1 hundreds.
The little friend of 1 is 4.
Up 5 hundreds, down 4 hundreds.



SCAN THIS

10 = 4 + 6

Add 4 tens.
The big friend of 4 is 6.
Down 6 tens, carry 1 hundreds.



5 = 3 + 2

Add 3 ones.
The little friend of 3 is 2.
Up 5 ones, down 2 ones.

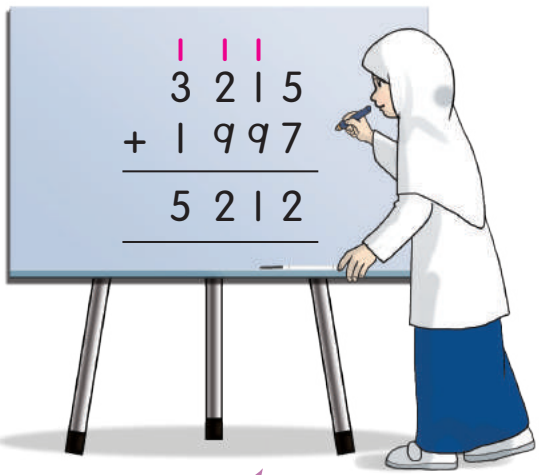
6 472 + 143 = **6 615**

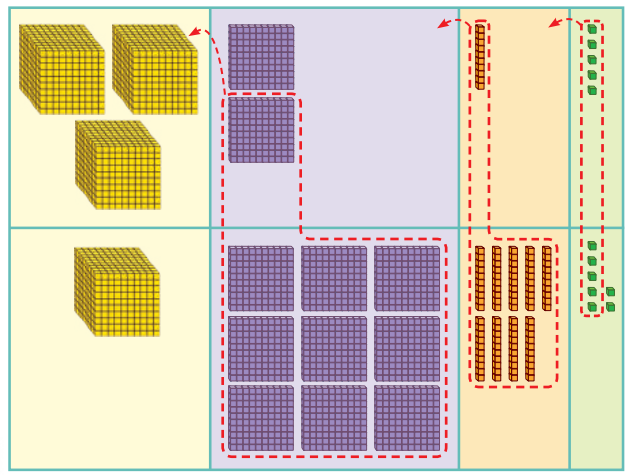
TEACHER'S NOTES

- Guide pupils to get information from newspapers such as the data of UPSR examination results and add any two numbers.
- Remind pupils that addition using an abacus starts from thousands, followed by hundreds, tens, and ones values.

3 3 215 + 1 997 = ☐

Method 1





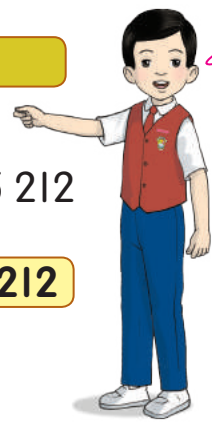
Method 2

3 215 + 1 997 = ☐

− 3 + 3

3 212 + 2 000 = 5 212

3 215 + 1 997 = **5 212**



1 997 plus 3 equals 2 000.
3 215 minus 3 equals 3 212.

Think!

3 215 + 2 997 = ☐

4 7 654 + ☐ = 8 021

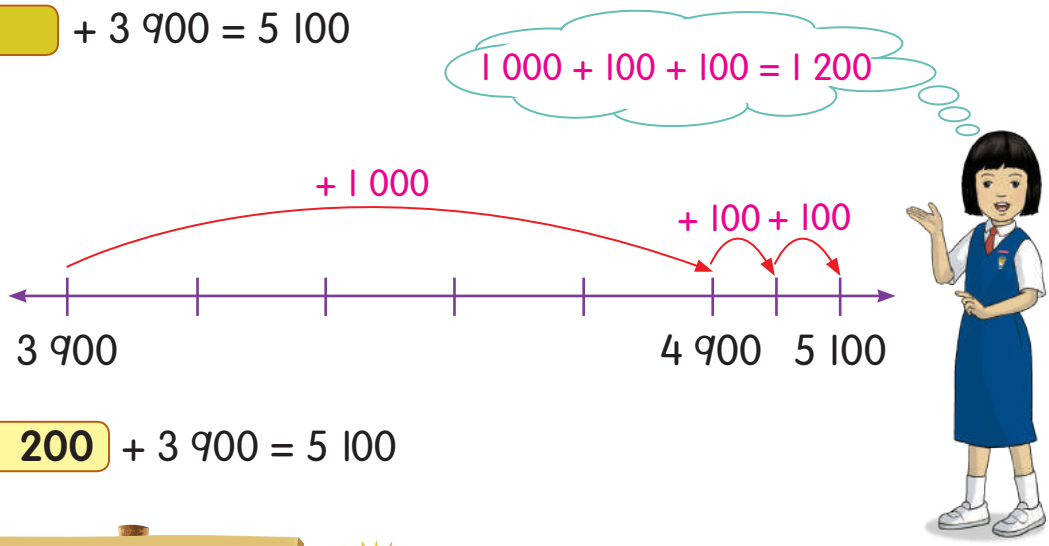
```
  1  1  1
  7  6  5  4
+ 0  3  6  7
-----------
  8  0  2  1
```

thousands	hundreds	tens	ones
1 7 0	1 6 3	1 5 6	4 7
8	10	12	11

7 654 + **367** = 8 021

- Guide pupils to use simpler number analogies to find an unknown value.
- Surf http://www.worksheets.eldhelper.com/4_Digit_Addition.htm

5 ☐ + 3 900 = 5 100



1 200 + 3 900 = 5 100

What is the digit in ☐ to make the answer a four digit number?

Add two numbers to get a total which is near to 10 000.

LET'S TRY

Find the total.

a
$$\begin{array}{r} 5\,172 \\ +\quad 19 \\ \hline \square \end{array}$$

b
$$\begin{array}{r} 843 \\ +\,6\,094 \\ \hline \square \end{array}$$

c
$$\begin{array}{r} 3\,702 \\ +\,4\,985 \\ \hline \square \end{array}$$

d
$$\begin{array}{r} 8\,276 \\ +\,1\,724 \\ \hline \square \end{array}$$

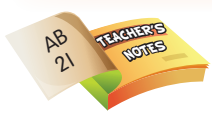
e 25 + 4 875 = ☐

f 837 + 1 090 = ☐

g 1 479 + ☐ = 3 890

h ☐ + 3 600 = 5 000

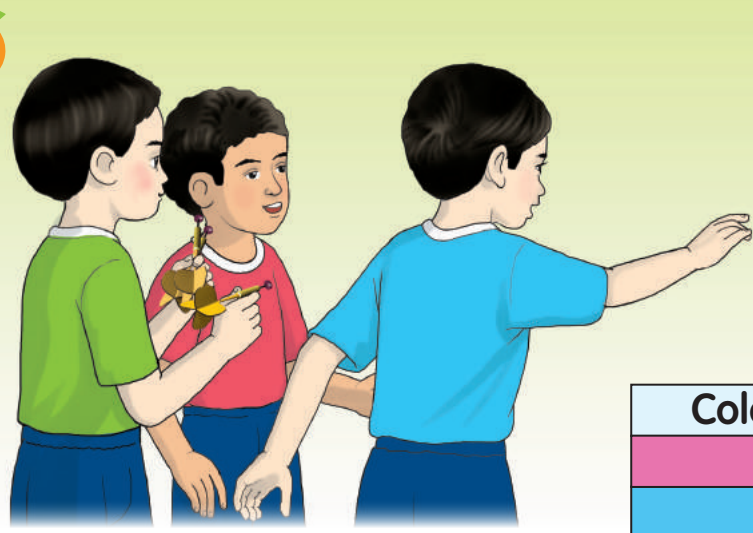
i What is the sum of 1 273 and 8 539?

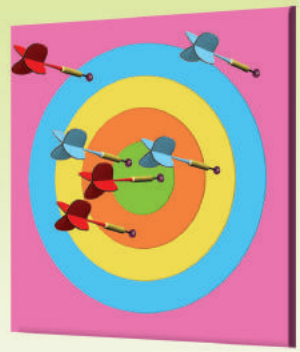


- In groups, provide more exercises using question cards or worksheets. Provide various questions based on the level of difficulty.
- Surf http://www.aaaknow.com/lessonFull.php?slug=add4dVert

ADD THREE NUMBERS

1





Colour	Score
	8
	27
	542
	1 130
	3 420

Rishi Izan

a What is Rishi's total score?

$8 + 542 + 3\,420 =$ ☐

$$\begin{array}{r} {\scriptstyle 1}\\ 8\\ +\ 542\\ \hline 550\\ \hline \end{array} \qquad \begin{array}{r} 550\\ +\ 3\,420\\ \hline 3\,970\\ \hline \end{array}$$

$8 + 542 + 3\,420 =$ **3 970**

Rishi's total score is **3 970**.

b Calculate Izan's total score.

$27 + 1\,130 + 3\,420 =$ ☐

$$\begin{array}{r} 3\,420\\ +\ 1\,130\\ \hline 4\,550\\ \hline \end{array} \qquad \begin{array}{r} 4\,550\\ +\ 27\\ \hline 4\,577\\ \hline \end{array}$$

$27 + 1\,130 + 3\,420 =$ **4 577**

Izan's total score is **4 577**.

Lim's total score is 1 680.
What are Lim's three scores?

☐ + ☐ + ☐ = 1 680

TEACHER'S NOTES

- Carry out group activities of adding any three numbers. Then, ask pupils to check the answers using calculator.

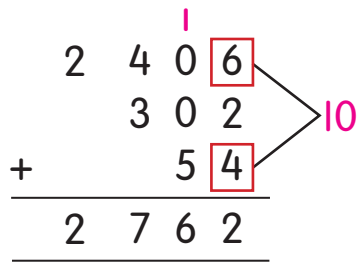
2

Bun and Cake Orders

Corn Bun	Vanilla Bun	Chocolate Bun	Cupcake	Waffle	Cheese Bun
2 406	302	54	3 547	169	49

a What is the total number of corn, vanilla, and chocolate buns ordered?

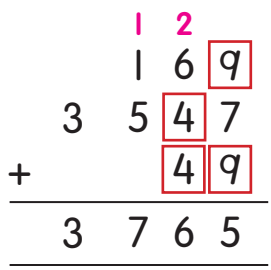
2 406 + 302 + 54 = ☐



2 406 + 302 + 54 = **2 762**

The total number of corn, vanilla, and chocolate buns ordered is **2 762**.

b 169 + 3 547 + 49 = ☐



$9 + 7 + 9 = 18 + 7$
$= 25$
$6 + 4 + 4 + 2 = 6 + 8 + 2$
$= 16$

169 + 3 547 + 49 = **3 765**

What is the value of ○?

△ + □ = 2 438
△ + □ + 6 759 = ○

TEACHER'S NOTES

- Relate to various daily situations in newspapers or pamphlets involving addition.
- Emphasise that to add according to the vertical form, digits must be positioned in the correct place value.

3

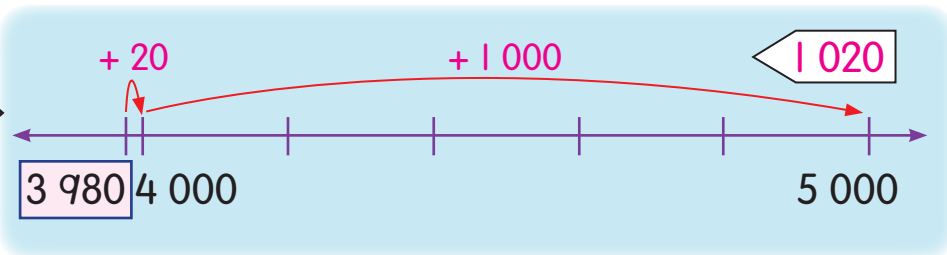
7 500 mℓ + 675 mℓ + 1 680 mℓ = ☐ mℓ

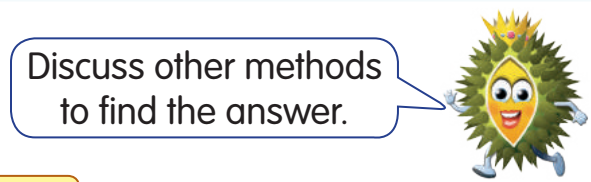
$$\begin{array}{r} {\scriptstyle 1} \\ 7\,500 \\ +\quad 675 \\ \hline 8\,175 \end{array} \qquad \begin{array}{r} {\scriptstyle 1} \\ 8\,175 \\ +\,1\,680 \\ \hline 9\,855 \end{array}$$

7 500 mℓ + 675 mℓ + 1 680 mℓ = **9 855** mℓ

4 3 084 + 896 + ☐ = 5 000

$$\begin{array}{r} {\scriptstyle 1\ 1} \\ 3\,084 \\ +\quad 896 \\ \hline 3\,980 \end{array}$$





3 084 + 896 + **1 020** = 5 000

LET'S TRY

Find the total.

a
$$\begin{array}{r} 4\,820 \\ 152 \\ +\quad 7 \\ \hline \square \end{array}$$

b
$$\begin{array}{r} 26 \\ 5\,164 \\ +\quad 302 \\ \hline \square \end{array}$$

c
$$\begin{array}{r} 8\,009 \\ 147 \\ +\quad 593 \\ \hline \square \end{array}$$

d 39 + 2 541 + 4 172 = ☐

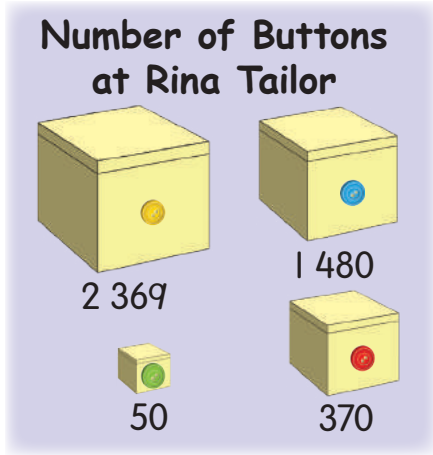
e 1 354 + 560 + ☐ = 3 000

AB 22-23 TEACHER'S NOTES

- Surf https://www.edhelper.com/4_Digit_Addition.htm
- Provide more exercises in worksheets.

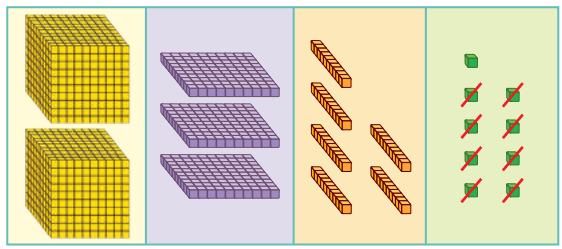
SUBTRACTION

1 a 8 yellow buttons were taken out from a box. Calculate the number of yellow buttons left.



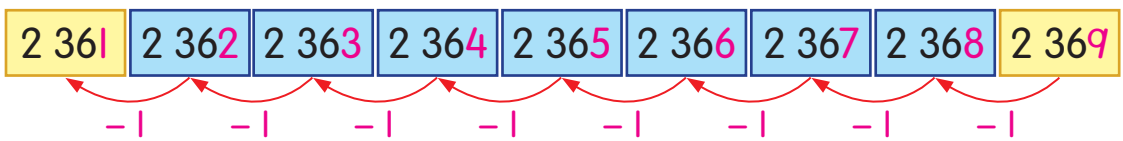
2 369 – 8 = ☐

Method 1



$$\begin{array}{r} 2\ 3\ 6\ 9 \\ -\quad\ \ 8 \\ \hline 2\ 3\ 6\ 1 \end{array}$$

Method 2

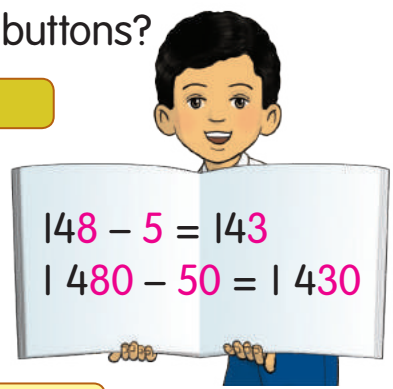


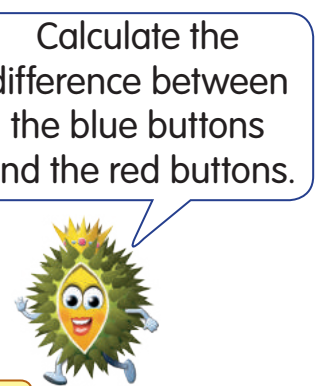
2 369 – 8 = **2 361**

The number of yellow buttons left is **2 361**.

b What is the difference, in number, between the blue buttons and the green buttons?

1 480 – 50 = ☐





1 480 – 50 = **1 430**

The difference between the blue buttons and the green buttons is **1 430**.

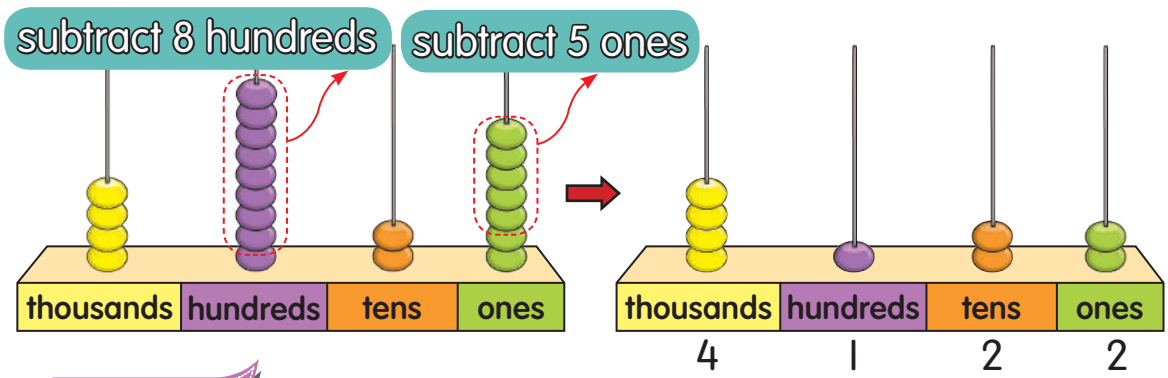
TEACHER'S NOTES

- Guide pupils to subtract without regrouping by simulation using number lines and base ten blocks.

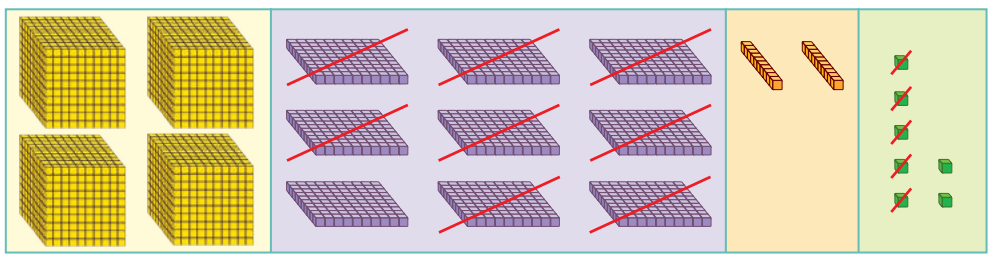
2 How much more is 4 927 than 805?

4 927 – 805 = ☐

Method 1



Method 2



Method 3

thousands	hundreds	tens	ones
4	9	2	7
– 0	8	0	5
4	1	2	2

Subtract ones
7 ones – 5 ones = 2 ones

Subtract tens
2 tens – 0 tens = 2 tens

Subtract hundreds
9 hundreds – 8 hundreds = 1 hundreds

Subtract thousands
4 thousands – 0 thousands = 4 thousands

4 927 – 805 = **4 122**

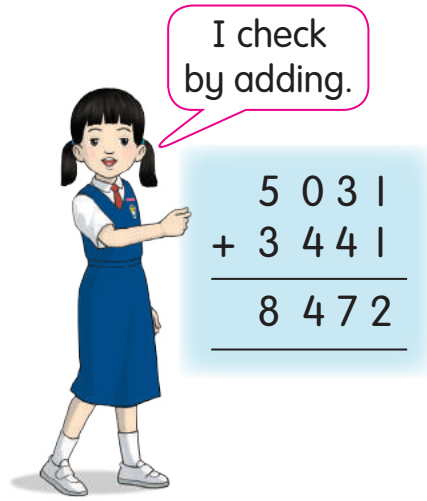
4 927 is **4 122 more** than 805.

TEACHER'S NOTES

- In groups, guide pupils to subtract using number lines and draw diagrams.

3 How much less is 3 441 than 8 472?

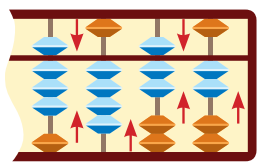
8 472 – 3 441 = ☐

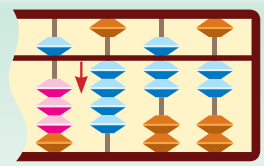


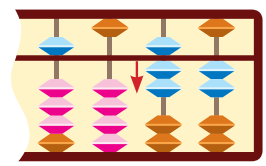
Method 1

$$\begin{array}{r} 8\ 4\ 7\ 2 \\ -\ 3\ 4\ 4\ 1 \\ \hline 5\ 0\ 3\ 1 \end{array}$$

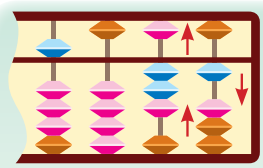
Method 2

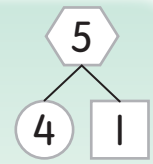

Up 8 472.

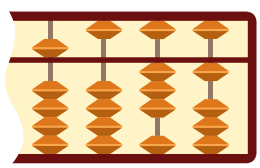

Subtract 3 441.
Down 3 thousands.


Down 4 hundreds.

SCAN THIS

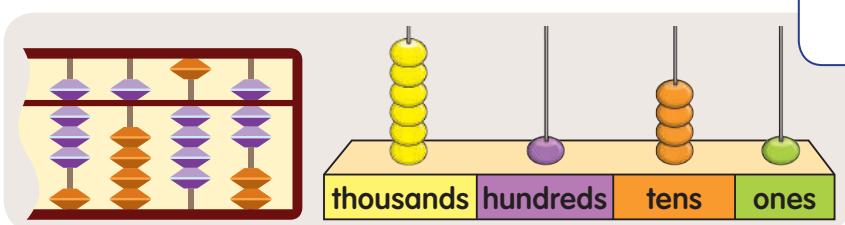

Subtract 4 tens.
- The little friend of 4 is 1.
- So, up 1 tens and down 5 tens. Down 1 ones.




The answer is 5 031.

8 472 – 3 441 = **5 031**

3 441 is **5 031 less** than 8 472.



Calculate the difference of values between the abacus and the counting frames.

AB 24-25 TEACHER'S NOTES

- Use various vocabulary for subtraction such as find the balance, difference, and how much less.
- Emphasise on subtracting a small number from a larger number.

4 4 765 – ☐ = 2 432

```
  4 7 6 5
– 2 3 3 3
---------
  2 4 3 2
---------
```

thousands	hundreds	tens	ones
4	7	6	5
2 2	3 4	3 3	3 2

4 765 – **2 333** = 2 432

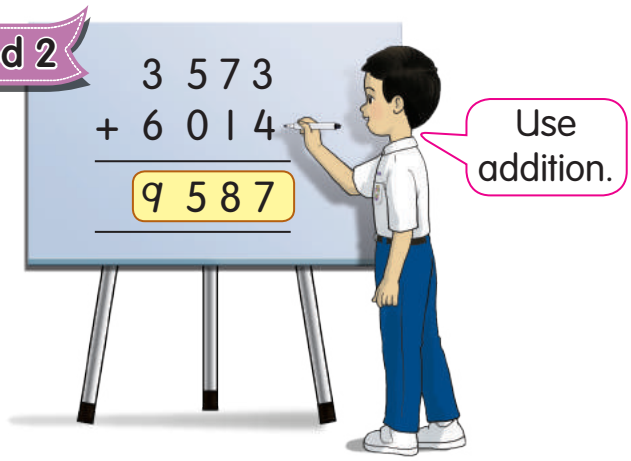
5 ☐ – 6 014 = 3 573

Method 1

```
  9 5 8 7
– 6 0 1 4
---------
  3 5 7 3
---------
```

9 587 – 6 014 = 3 573

Method 2



LET'S TRY

1 Subtract.

a) 4 587 – 5 = ☐

b) 6 890 – 70 = ☐

c) 5 643 – 530 = ☐

d) 9 615 – 7 212 = ☐

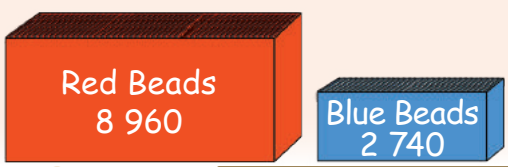
2 Complete these.

a) 7 851 – ☐ = 1 230

b) ☐ – 5 346 = 2 123

3 Calculate the difference between 6 312 and 7 345.

4



How many more are the red beads than the blue beads?

AB 25 TEACHER'S NOTES

- Guide pupils to subtract using coloured chips to represent thousands, hundreds, tens, and ones values.
- Ask pupils to check their answers using addition.
- Encourage pupils to use an abacus to subtract.

MORE SUBTRACTION

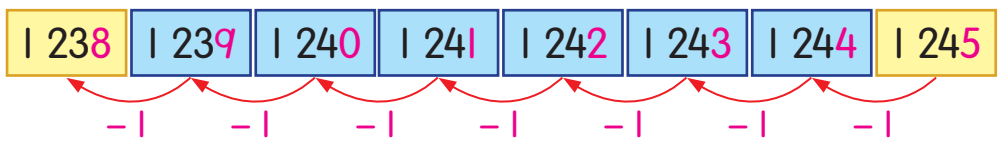
1 The table shows the number of pupils in a school in 2018.

Month	Number of pupils	Number of pupils transferred
February	1 245	0
March	?	7

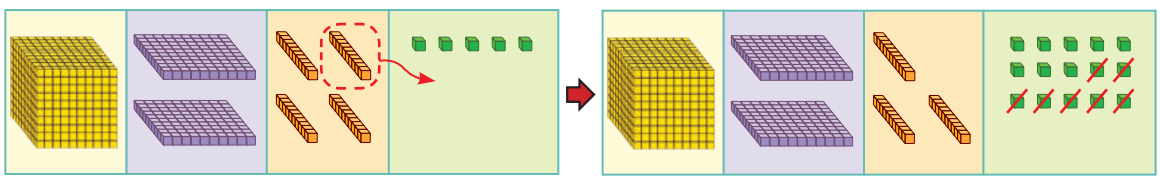
What is the number of pupils in March 2018?

1 245 – 7 = ☐

Method 1



Method 2



- 5 ones cannot subtract 7 ones.
- Change 1 tens to 10 ones.
  5 ones + 10 ones = 15 ones
- Subtract ones.
  15 ones – 7 ones = 8 ones
- Subtract tens, hundreds, and thousands.

thousands	hundreds	tens	ones
		3	15
1	2	~~4~~	~~5~~
–			7
1	2	3	8

1 245 – 7 = **1 238**

The number of pupils in March 2018 is **1 238**.

TEACHER'S NOTES

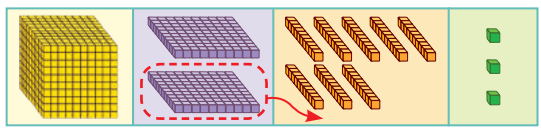
- Guide pupils to regroup to subtract. Emphasise that the digit value is regrouped when the value is insufficient to subtract.
- Encourage pupils to check their answers using addition.

2 The table shows the number of passengers on a train from Sungai Buloh to Kajang.

Passenger	Number
Adult	1 283
Teenager	790

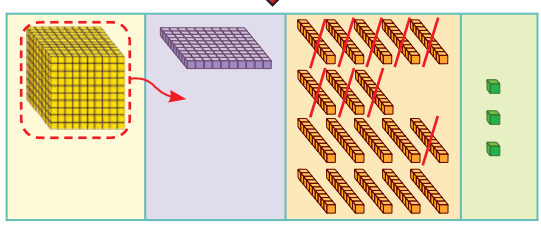
Calculate the difference between adult passengers and teenage passengers.

1 283 – 790 = ☐



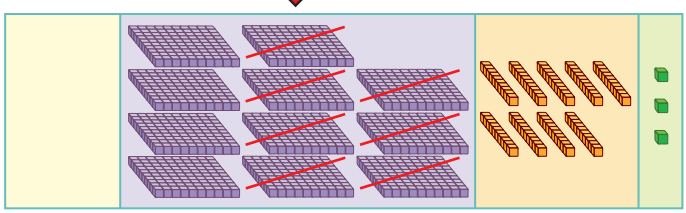
Subtract ones.
Change 1 hundreds to 10 tens.

	1	2	3
–		7	0
			3



Subtract tens.
Change 1 thousands to 10 hundreds.

	0	11	3
	1	2	0
–		7	0
			3



Subtract hundreds.

	0	11	3
	1	2	0
–		7	0
		4	3

1 283 – 790 = **493**

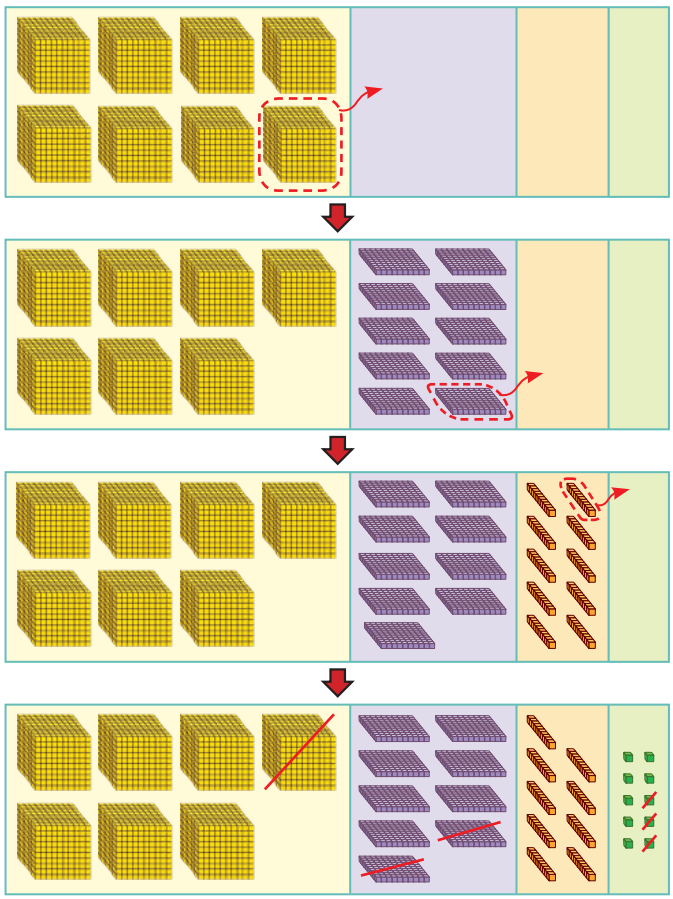
The difference between adult passengers and teenage passengers is **493**.

TEACHER'S NOTES

- Emphasise that subtraction needs to be done starting from ones place value followed by tens, hundreds, and thousands.
- Surf www.mymrt.com.my>sbk>route-map. Create questions based on the information for pupils to solve.

3 8 000 – 1 203 = ☐

Method 1



	7 10		
	8 0	0	0
–	1 2	0	3

	7 9		
	8 10	10	
	8 0	0	0
–	1 2	0	3

	7 9	9		
	8 10	10	10	
	8 0	0	0	0
–	1 2	0	0	3
	6	7	9	7

Method 2

8 000 – 1 203 = ☐

– 1 – 1

7 999 – 1 202 = ☐

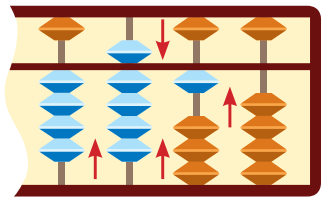
	7	9	9	9
–	1	2	0	2
	6	7	9	7

8 000 – 1 203 = **6 797**

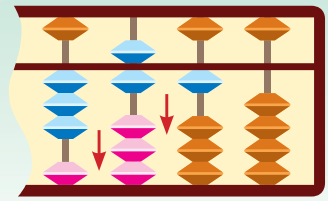
TEACHER'S NOTES

- Guide pupils to subtract using representatives such as coloured chips and abacus.
- Provide exercises involving subtraction using number puzzles.

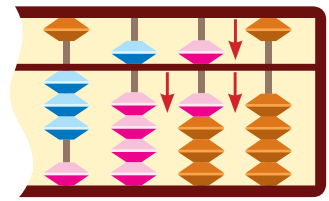
4 4 910 – 1 362 = ☐



Up 4 910.

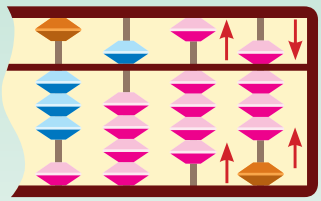


Subtract 1 362.
Down 1 thousands.
Down 3 hundreds.



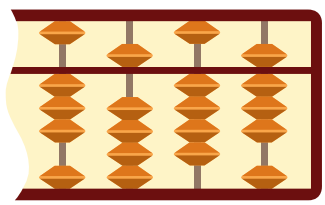
10
6 4

Subtract 6 tens, lower beads are not enough.
The big friend of 6 is 4.
So, remove 1 hundreds.
Up 4 tens.



10
2 8

Subtract 2 ones, no lower beads.
The big friend of 2 is 8.
So, remove 1 tens.
Up 8 ones.



SCAN THIS

The answer is 3 548.

10
8 ~~0~~ 10
4 ~~9~~ ~~1~~ ~~0~~
– 1 3 6 2
3 5 4 8

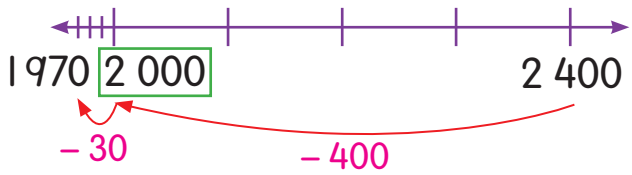
4 910 – 1 362 = **3 548**

Think!

4 910 – 1 372 = ☐

- Surf the Internet to obtain an abacus module that shows examples of subtraction in detail.
- Surf http://www.zapmeta.com.my/video?q=abacus+subtraction

5 2 400 – ☐ = 1 970



4 0 0
+ 3 0
4 3 0

2 400 – **430** = 1 970

6 ☐ – 891 = 1 305

1
1 3 0 5
+ 8 9 1
2 1 9 6

5 – 2 = 3
5 = 3 + 2

2 196 – 891 = 1 305

Form two numbers using digits 1, 2, 4, 5 and 6. Find the largest difference between them.

	7	☐	☐	☐
–		☐	☐	3
	☐	☐	☐	☐

LET'S TRY

1 Calculate.

a
5 1 3 4
– 5
☐

b
9 4 2 5
– 1 7 3
☐

c
4 0 8 6
– 1 9 0 2
☐

2 Subtract.

a 4 723 – 8 = ☐

b 5 369 – 97 = ☐

c 5 456 – 670 = ☐

d 7 000 – 3 028 = ☐

3 Find the answers and fill in the blanks.

a 3 247 – ☐ = 1 152

b ☐ – 1 309 = 4 041

AB 28 TEACHER'S NOTES

- Provide more exercises involving unknowns to enhance pupils' understanding.
- Guide pupils to use simpler strategies to find unknowns. For example, 2 400 – ☐ = 1 970 is simplified to 6 – 1 = 5. So, 6 – 5 = 1.

SUBTRACT SUCCESSIVELY

There are 2 458 young plants.

Buy 12 young plants

Buy 103 young plants

1 How many young plants are left?

2 458 – 103 – 12 = ☐

Method 1

$$\begin{array}{r} 2\,458 \\ -\quad 103 \\ \hline 2\,355 \end{array} \qquad \begin{array}{r} 2\,355 \\ -\quad 12 \\ \hline 2\,343 \end{array}$$

Method 2

$$\begin{array}{r} 2\,458 \\ -\quad 12 \\ \hline 2\,446 \\ -\quad 103 \\ \hline 2\,343 \end{array}$$

Method 3

$$\begin{array}{r} 103 \\ +\quad 12 \\ \hline \square\square\square \end{array} \qquad \begin{array}{r} 2458 \\ -\quad \square\square\square \\ \hline \square\square\square\square \end{array}$$

Is there any other method to find the answer? Discuss.

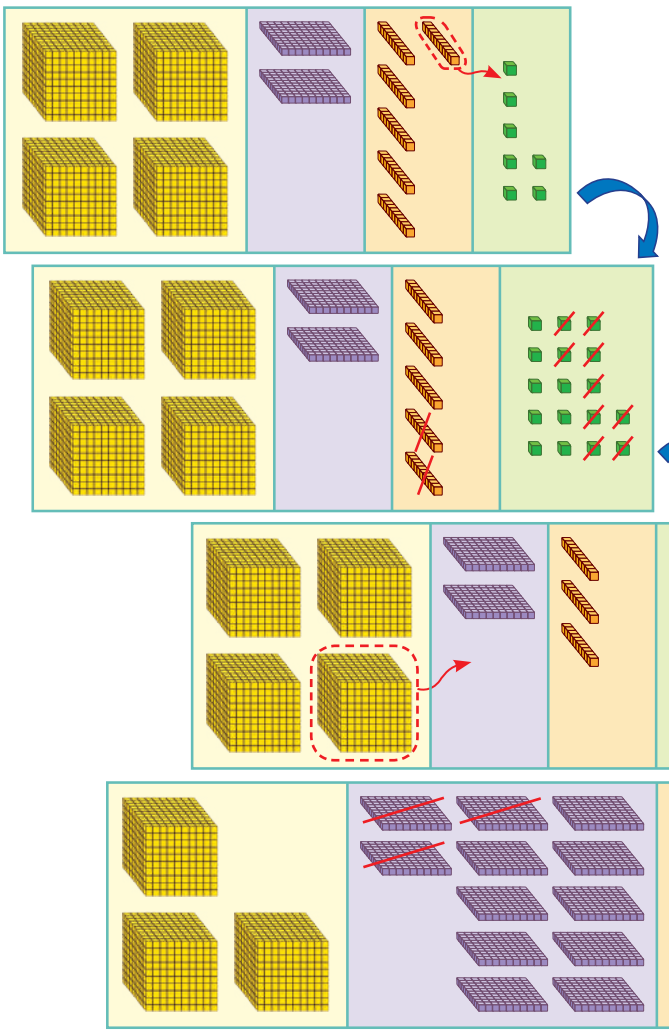
2 458 – 103 – 12 = **2 343**

2 343 young plants are left.

TEACHER'S NOTES

- Guide pupils to subtract successively without regrouping first before proceeding to subtraction by regrouping.
- Emphasise that the answer carried forward from step 1 to step 2 must be the same.

2 4 267 – 29 – 301 = ☐



$$\begin{array}{r} {\scriptstyle 5\ 17} \\ 4\ 2\cancel{6}\cancel{7} \\ -\quad 2\ 9 \\ \hline 4\ 2\ 3\ 8 \end{array}$$

$$\begin{array}{r} {\scriptstyle 3\ 12} \\ \cancel{4}\ \cancel{2}\ 3\ 8 \\ -\quad 3\ 0\ 1 \\ \hline 3\ 9\ 3\ 7 \end{array}$$

4 267 – 29 – 301 = **3 937**

3 7 000 – 167 – 3 481 = ☐

$$\begin{array}{r} {\scriptstyle 6\ 9\ 9} \\ 7\ \cancel{0}\cancel{0}\cancel{0} \\ -\ 3\ 4\ 8\ 1 \\ \hline 3\ 5\ 1\ 9 \end{array} \qquad \begin{array}{r} {\scriptstyle 4\ 11} \\ 3\ 5\cancel{1}\ 9 \\ -\quad 1\ 6\ 7 \\ \hline 3\ 3\ 5\ 2 \end{array}$$

7 000 – 167 – 3 481 = **3 352**

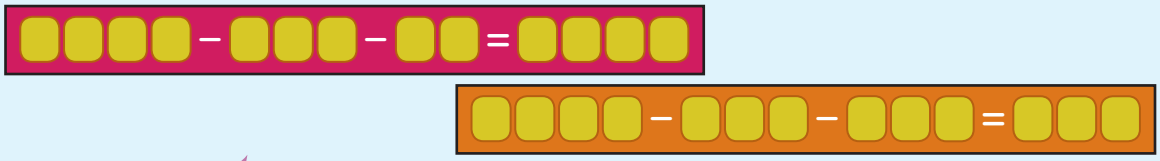
AB 29-30 TEACHER'S NOTES

- Guide pupils to subtract successively using data or information involving business transactions.

FUN PROJECT

Tools/Materials whiteboard marker, 2 number sentence cards, rubber, calculator

Examples of a number sentence card



Participants pupils work in pairs (A and B)

Method

1. Pupil A chooses one number sentence card.
2. Pupil B writes three numbers using the digits from 0 to 9 on the card. Calculate the answer.
3. Pupil A checks the answer using a calculator. If the number sentence and answer are correct, pupil B gets 5 marks.
4. Take turns. Repeat steps 1 to 3.
5. The pupil with the highest score wins.

LET'S TRY

Subtract.

a
$$\begin{array}{r} 8\,7\,2\,9 \\ -\quad 1\,4 \\ \hline \square\square\square\square \end{array} \qquad \begin{array}{r} \square\square\square\square \\ -\quad 6\,0\,3 \\ \hline \square\square\square\square \end{array}$$

b
$$\begin{array}{r} 7\,4\,0\,5 \\ -\quad 6\,1 \\ \hline \square\square\square\square \end{array} \qquad \begin{array}{r} \square\square\square\square \\ -\quad 2\,5\,4 \\ \hline \square\square\square\square \end{array}$$

c $5\,276 - 38 - 105 = \square$

d $6\,093 - 815 - 41 = \square$

e $8\,506 - 6\,492 - 177 = \square$

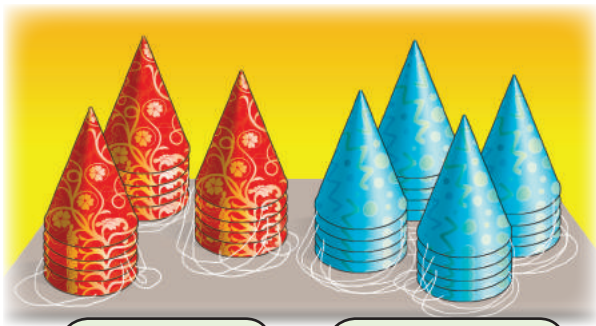
f $9\,000 - 347 - 78 = \square$

TEACHER'S NOTES

- Use laminated number sentence cards for the Fun Project.
- Carry out reinforcement activities such as mathematics quizzes that include a variety of questions.

ADDITION AND SUBTRACTION

1



15 red hats

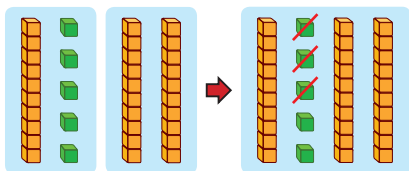
20 blue hats

3 hats are worn

How many hats are not worn?

15 + 20 – 3 = ☐

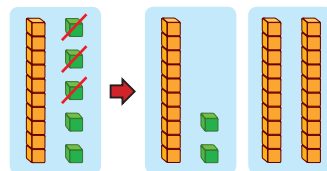
Method 1



$$\begin{array}{r} 15 \\ +\ 20 \\ \hline 35 \end{array} \qquad \begin{array}{r} 35 \\ -\ \ 3 \\ \hline 32 \end{array}$$

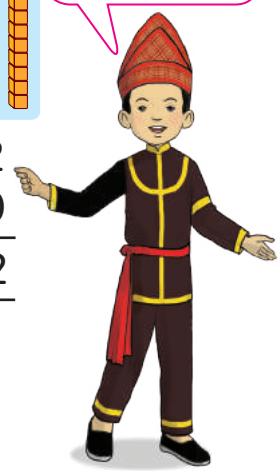
Add first. Then, subtract.

Method 2



$$\begin{array}{r} 15 \\ -\ \ 3 \\ \hline 12 \end{array} \qquad \begin{array}{r} 12 \\ +\ 20 \\ \hline 32 \end{array}$$

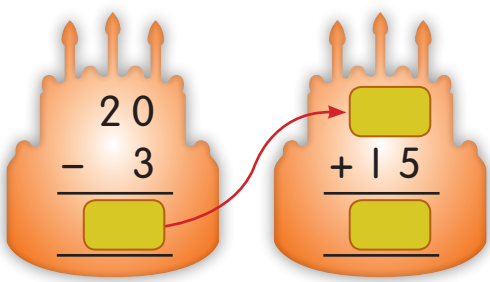
The answer is the same.



SCAN THIS

15 + 20 – 3 = **32**

32 hats are not worn.



$$\begin{array}{r} 20 \\ -\ \ 3 \\ \hline \square \end{array} \qquad \begin{array}{r} \square \\ +\ 15 \\ \hline \square \end{array}$$

Calculate. Explain how you get the answer.

TEACHER'S NOTES

- Carry out addition and subtraction activities using objects and simulation.
- Emphasise that pupils should solve number sentence in the order of operations.

2.5.1

KPM

2 8 728 – 524 + 39 = ☐

Method 1

$$\begin{array}{r} 8\ 728 \\ -\ \ 524 \\ \hline 8\ 204 \end{array} \qquad \begin{array}{r} {\scriptstyle 1}\ \ \ \ \ \\ 8\ 204 \\ +\ \ \ 39 \\ \hline 8\ 243 \end{array}$$

8 728 – 524 + 39 = **8 243**

Method 2

$$\begin{array}{r} 8\ 728 \\ +\ \ \ 39 \\ \hline \square \end{array} \qquad \begin{array}{r} \square \\ -\ \ 524 \\ \hline \square \end{array}$$

3 Look at the following.

9 007 – 215 + 640 = ☐

Method 1

$$\begin{array}{r} {\scriptstyle 9}\ \ \ \ \ \\ 8\ {\scriptstyle 10}10 \\ \cancel{9}\ \cancel{0}\cancel{0}7 \\ -\ \ 215 \\ \hline 8\ 792 \\ +\ \ 640 \\ \hline \square \end{array}$$

Method 2

$$\begin{array}{r} 215 \\ +640 \\ \hline 855 \end{array} \qquad \begin{array}{r} 9\ 007 \\ -\ \ 855 \\ \hline \square \end{array}$$

Which method is correct? Discuss.

LET'S TRY

1 Solve these.

a $\begin{array}{r} 56 \\ +12 \\ \hline \square \end{array} \qquad \begin{array}{r} \square \\ -27 \\ \hline \square \end{array}$

b $\begin{array}{r} 6\ 052 \\ -\ \ 300 \\ \hline \square \end{array} \qquad \begin{array}{r} \square \\ +\ \ 81 \\ \hline \square \end{array}$

c 6 240 + 517 – 389 = ☐

d 4 709 – 2 156 + 314 = ☐

2 Complete the following using + and – symbols.

a 3 625 ☐ 574 ☐ 89 = 3 140

b 6 412 ☐ 1 302 ☐ 247 = 7 467

AB 31-32 TEACHER'S NOTES

- Provide more simulation methods involving mixed operations to enhance pupils' understanding.

2.5.1

CREATE STORIES

1 5 640 + 3 290 = **8 930**

There are **5 640** males and **3 290** females taking part in the National Day poster drawing contest. The total number of participants is **8 930**.

2 6 240 – 4 800 = **1 440**

A factory produces **6 240** boxes of biscuits. **4 800** boxes of biscuits are donated to pupils. The number of biscuits left is ☐ boxes.

3 1 050 – 148 + 59 = **961**

☐ people ride a train from Johor Bahru to Butterworth. When the train reaches Kuala Lumpur ☐ people get off and ☐ people get on the train. The number of passengers left after leaving Kuala Lumpur is ☐.

LET'S TRY

Create stories based on the number sentences.

a 6 321 + 869 = 7 190

b 4 000 – 2 115 = 1 885

c 625 + 53 – 120 = 558

d 1 805 – 246 + 72 = 1 631

AB 33-34 TEACHER'S NOTES

- Guide pupils to create stories based on suitable picture cards and number sentences.
- Carry out a story making competition using MS Word.

2.7.1
2.7.2

KPM

SOLVE THE PROBLEMS

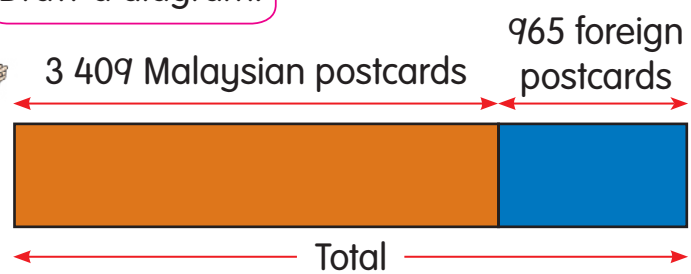
1 Pandalela has 3 409 Malaysian postcards and 965 foreign postcards. Calculate the total number of her postcards.

Given 3 409 Malaysian postcards
965 foreign postcards

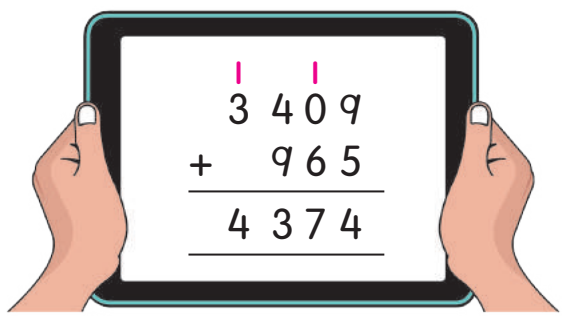
Find total number of postcards

Method

Draw a diagram.



3 409 + 965 = ☐



$$\begin{array}{r} {\scriptstyle 1\quad 1\quad\ } \\ 3\ 4\ 0\ 9 \\ +\quad 9\ 6\ 5 \\ \hline 4\ 3\ 7\ 4 \end{array}$$

Check

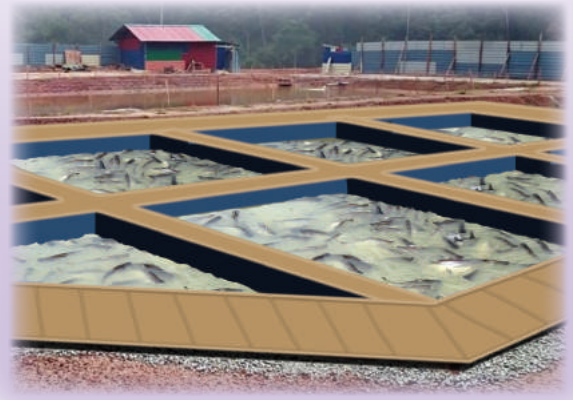
$$\begin{array}{r} {\scriptstyle 3\ 13\ 6\ 14} \\ \cancel{4}\ \cancel{3}\ \cancel{7}\ \cancel{4} \\ -\quad 9\ 6\ 5 \\ \hline 3\ 4\ 0\ 9 \end{array}$$

3 409 + 965 = **4 374**

The total number of postcards is **4 374**.

- Guide pupils to identify important information by underlining it.
- Guide pupils to solve problems by simulation using base ten blocks.

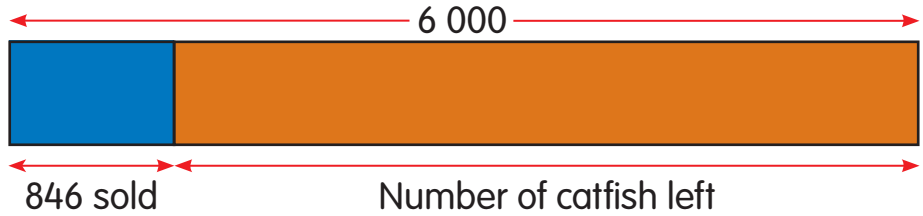
2 Dev's father rears 6 000 catfish. He sells 846 of the catfish. How many catfish are left?



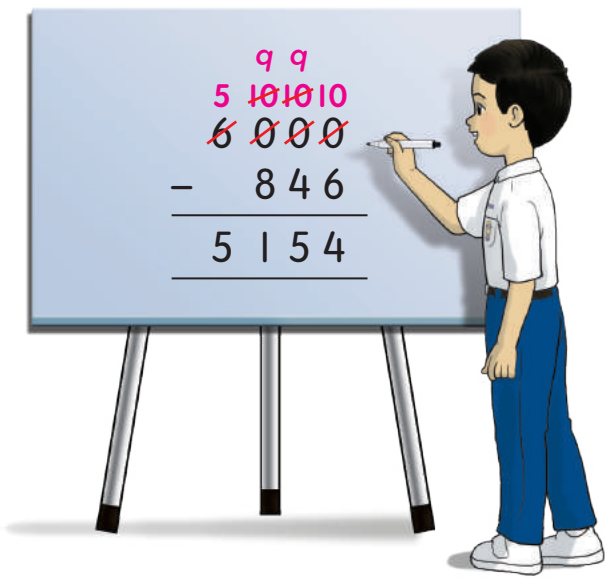
Given 6 000 catfish
846 catfish sold

Find number of catfish left

Method



6 000 – 846 = ☐



Check

$$\begin{array}{r} {\scriptstyle 1\ \ 1\ \ 1\ \ } \\ 5\,1\,5\,4 \\ +\quad 8\,4\,6 \\ \hline 6\,0\,0\,0 \end{array}$$

6 000 – 846 = **5 154**

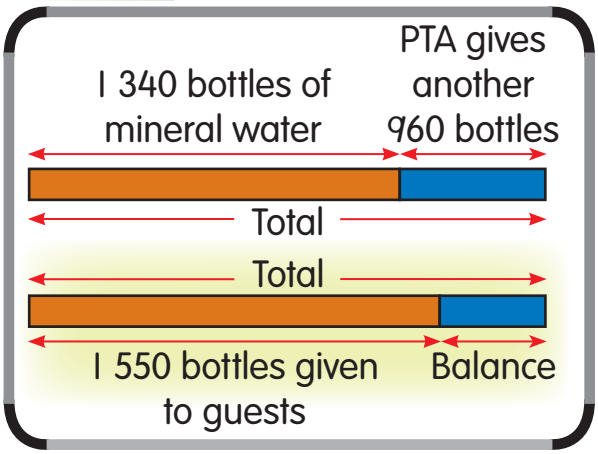
The number of catfish left is **5 154**.

AB 35-36 TEACHER'S NOTES

- Train pupils to determine operations by identifying the keywords that mean add or subtract.
- Guide pupils to check their answers by addition or using a calculator.

3 A school provides 1 340 bottles of mineral water. The Parent-Teacher Association (PTA) contributes another 960 bottles. 1 550 bottles of mineral water are given to guests. How many bottles of mineral water are left?

Method



1 340 + 960 – 1 550 = ☐

$$\begin{array}{r} {\scriptstyle 1\ \ 1} \\ 1\,340 \\ +\ \ 960 \\ \hline 2\,300 \end{array} \qquad \begin{array}{r} {\scriptstyle 1\ \ 12\ 10} \\ 2\,\not{3}\,\not{0}0 \\ -\ 1\,550 \\ \hline 750 \end{array}$$

1 340 + 960 – 1 550 = **750**

750 bottles of mineral water are left.

LET'S TRY

Solve the problems.

a In conjunction with Sports Day, a school ordered 1 420 blue T-shirts and 968 red T-shirts. What is the total number of T-shirts?

b 1 580 participants took part in a patriotic song singing competition. 27 participants made it to the finals. Calculate the number of participants who did not make it to the finals.

c **Table of durian collection at Airil's father's orchard**

Durian	Number
D24	4 095
Musang King	720

Read the table. Airil's father sent 1 846 durians to the fruit market. Calculate the durians left.

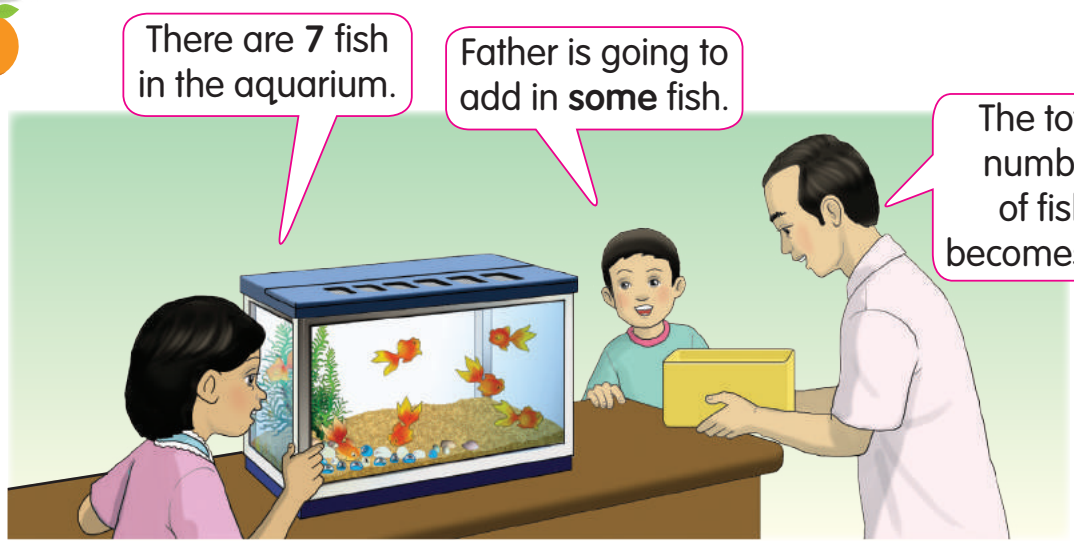
AB 37 TEACHER'S NOTES

- Discuss methods such as using analogy to solve problems.
- Provide exercises using question cards to enhance pupils' understanding.

2.7.3

RECOGNISE UNKNOWN

1



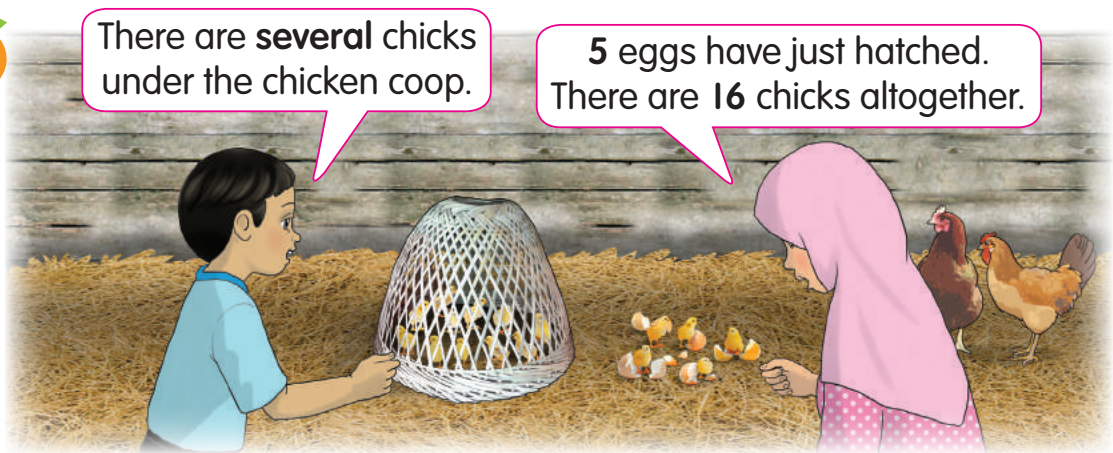
An **unknown** is **some** fish.
7 plus the **unknown** is **10**.

An **unknown** is a quantity that is not specified.

Number sentence $7 + \square = 10$

unknown

2



An **unknown** is **several** chicks.
The **unknown** plus **5** becomes **16**.

$\square + 5 = 16$

unknown

TEACHER'S NOTES

- Carry out simulation activities to identify the unknown.

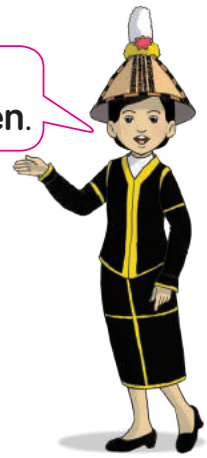
2.6.1
2.6.2

3

12 cupcakes

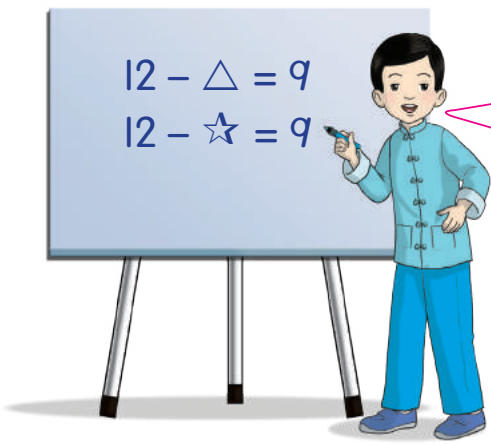
Several cupcakes from 12 cupcakes were eaten.

An **unknown** is **several cupcakes that were eaten**.



12 minus the **unknown** equals 9.

12 – ☐ = 9



I can write the number sentence like this.

4

CAR PARK AT
GLOBAL SUPERMARKET

TOTAL NUMBER OF PARKING SPACES ?
NUMBER OF PARKING SPACES OCCUPIED 40
NUMBER OF PARKING SPACES UNOCCUPIED 596

Read the information and identify the unknown. Write the number sentence.

The **unknown** is _____.

Number sentence _____

AB 38 TEACHER'S NOTES

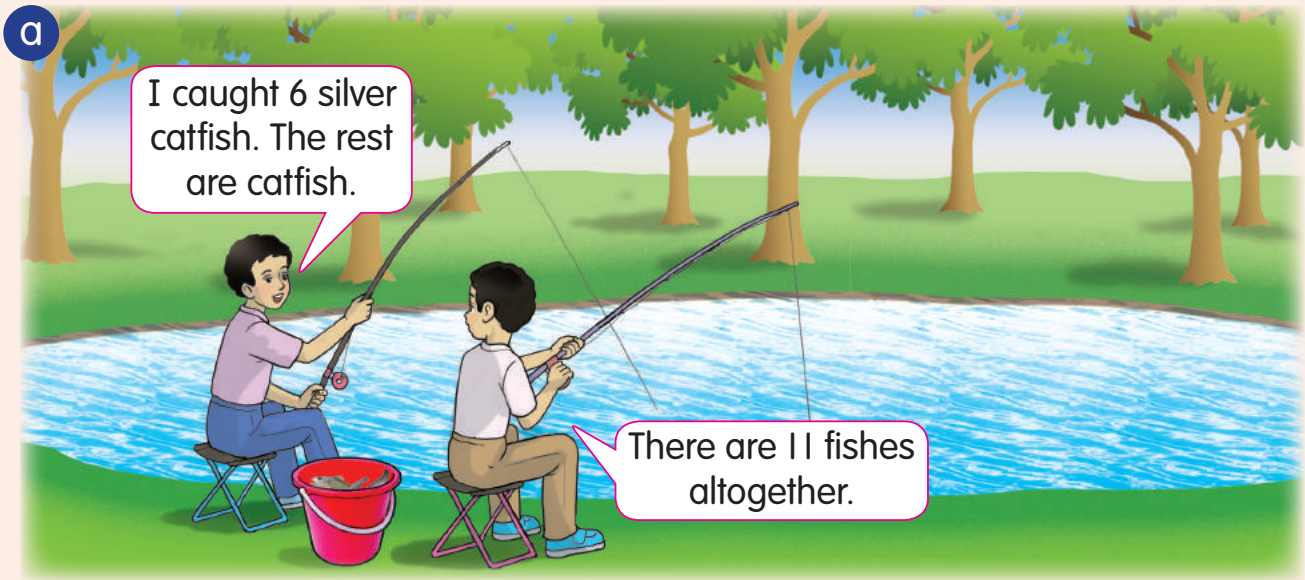
- Guide pupils to identify the unknown based on stories told or picture cards.

2.6.1
2.6.2

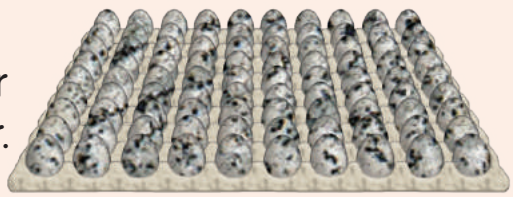
LET'S TRY

Identify the unknowns. Write the number sentences.

a



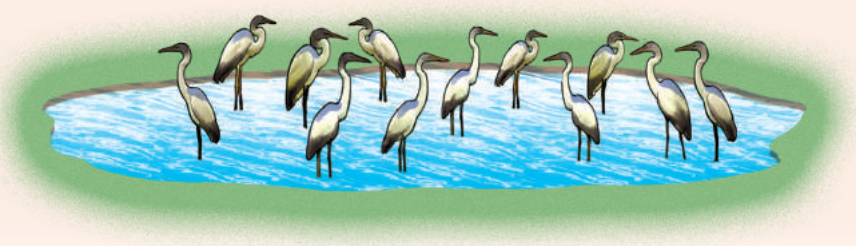
b Shanti sells a few quail eggs. Then, she sells another 90 quail eggs. The number of quail eggs sold is 105 eggs altogether.



c

There are several mangoes in the basket. 4 were eaten and 14 were left.

d 15 storks are hunting for fish in the lake. A few fly away and 12 are left.



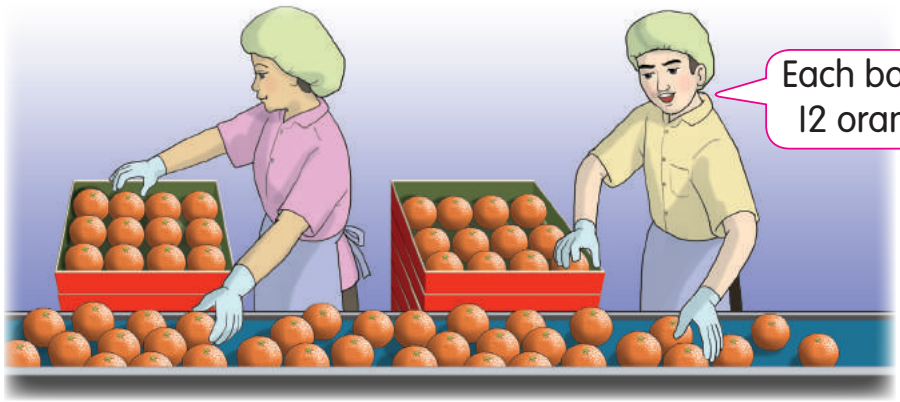
TEACHER'S NOTES

- Guide pupils to identify any unknown through various situations in daily life involving addition and subtraction, such as using objects in the classroom.

2.6.1
2.6.2

MULTIPLICATION

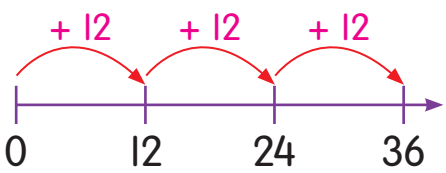
1



What is the total number of oranges in 3 boxes?

$3 \times 12 =$ ☐

Method 1



$$\begin{array}{r} 12 \\ 12 \\ +\ 12 \\ \hline 36 \end{array}$$

Method 2

tens	ones
1	2
×	3
3	6

Multiply ones
3 × 2 ones = 6 ones

Multiply tens
3 × 1 tens = 3 tens

3 × 2 = 2 × 3.
Is
3 × 12 = 12 × 3?

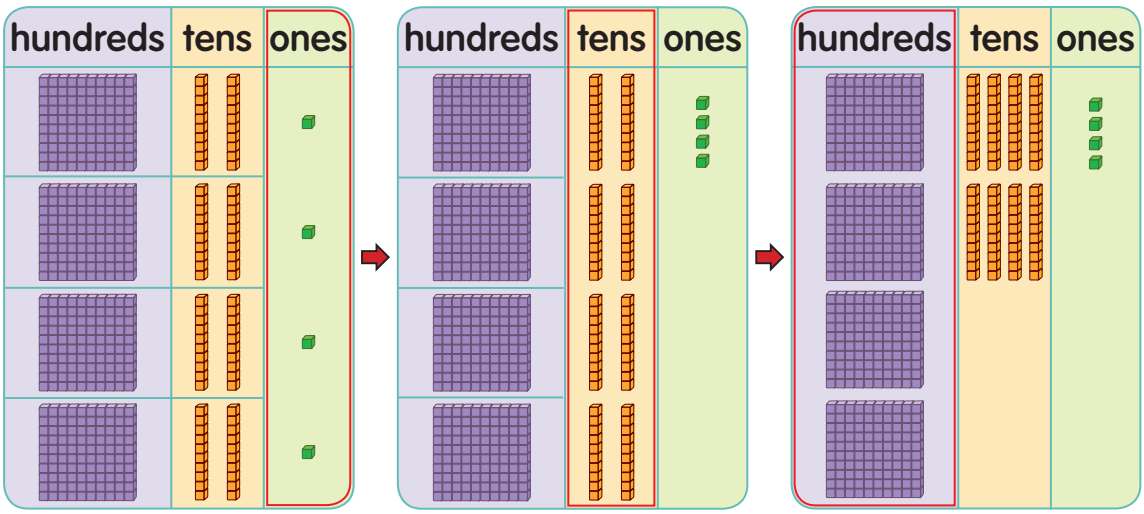
$3 \times 12 =$ **36**

The total number of oranges in 3 boxes is **36**.

TEACHER'S NOTES

- Guide pupils to multiply using counters and squared paper to reinforce their understanding of the multiplication concept.

2 $4 \times 121 =$ ☐



1	2	1
×		4
		4

Multiply ones
4 × 1 ones = 4 ones

1	2	1
×		4
	8	4

Multiply tens
4 × 2 tens = 8 tens

1	2	1
×		4
4	8	4

Multiply hundreds
4 × 1 hundreds
= 4 hundreds

$4 \times 121 =$ **484**

3 $2\,013 \times 2 =$ ☐

2	0	1	3
×			2
			6
		2	0
	0	0	0
+ 4	0	0	0
4	0	2	6

2 × 3 ones
2 × 1 tens
2 × 0 hundreds
2 × 2 thousands

Estimate to check.
2 000 × 2 = 4 000

4 026 is nearer to 4 000. The answer is reasonable.

$2\,013 \times 2 =$ **4 026**

TEACHER'S NOTES

- Provide more exercises without regrouping to reinforce pupils' understanding of the multiplication process.
- Encourage pupils to check their answers using estimation method and calculator.

4 596 × 10 = ☐

Method 1

596 × 1 tens = 596 tens
= 5 960

Method 2

$$\begin{array}{r} 596 \\ \times\ \ 10 \\ \hline 5960 \end{array}$$

596 × 10 = **5 960**

5 78 × 100 = ☐

Method 1

$$\begin{array}{r} 78 \\ \times\ 100 \\ \hline 7800 \end{array}$$

Method 2

78 × 1 = 78
78 × 10 = 780
78 × 100 = 7 800

78 × 100 = **7 800**

6 10 × 1 000 = ☐

$$\begin{array}{r} 10 \\ \times\ 1000 \\ \hline 10000 \end{array}$$

10 × 1 000 = **10 000**

7 9 × ☐ = 9 000

9 × 10 = 90
9 × 100 = 900
9 × 1 000 = 9 000

9 × **1 000** = 9 000

What is the smallest hundreds digit if the answer is a four digit number?

☐12 × 4 = ☐

LET'S TRY

Multiply.

a $\begin{array}{r} 40 \\ \times\ 8 \\ \hline \square \end{array}$

b $\begin{array}{r} 21 \\ \times\ 5 \\ \hline \square \end{array}$

c $\begin{array}{r} 501 \\ \times\ 6 \\ \hline \square \end{array}$

d $\begin{array}{r} 29 \\ \times\ 10 \\ \hline \square \end{array}$

e 17 × 100 = ☐

f 10 × 35 = ☐

g 100 × 80 = ☐

h 6 × ☐ = 6 000

i ☐ × 902 = 9 020

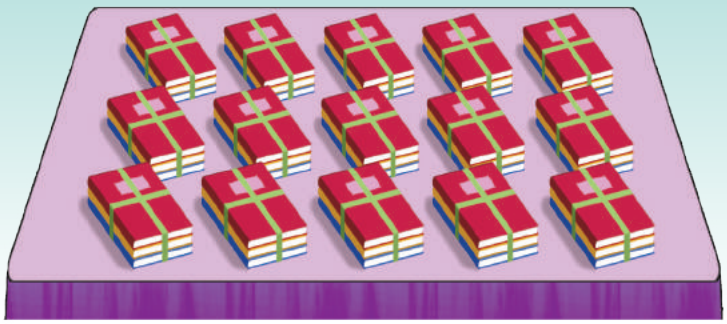
j 10 000 = ☐ × 1 000

AB 39 TEACHER'S NOTES

- For multiplication in vertical form, encourage pupils to place larger numbers on top for easier calculation.
- Emphasise the multiplication pattern of any number by 10, 100 and 1 000.

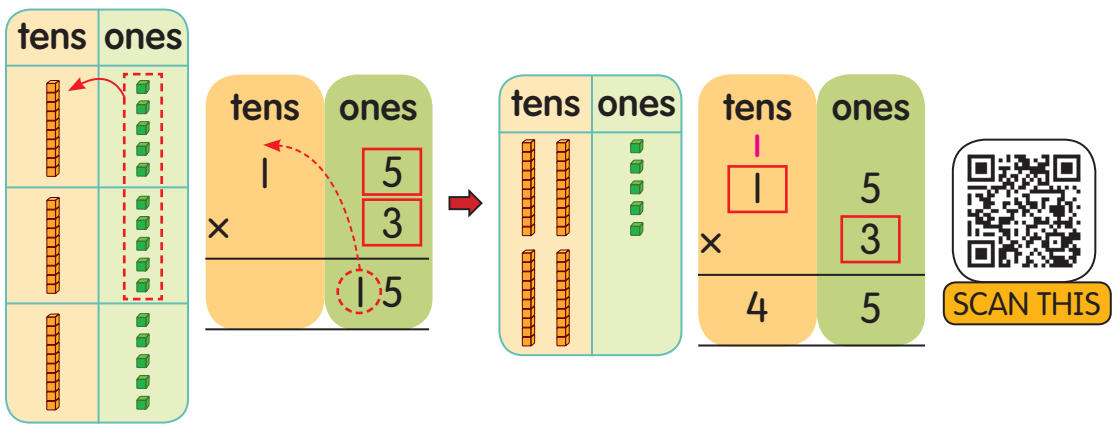
MORE MULTIPLICATION

1



How many books are there altogether?

15 × 3 = ☐



Multiply ones
3 × 5 ones = 15 ones
Change 15 ones to
1 tens and 5 ones.

Multiply tens
3 × 1 tens = 3 tens
3 tens + 1 tens = 4 tens

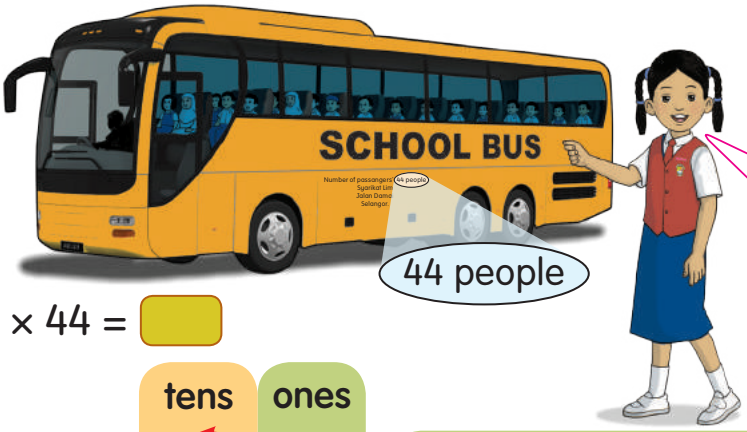
15 × 3 = **45**

There are **45** books altogether.

TEACHER'S NOTES

- Guide pupils to use number lines and squared paper to multiply two numbers involving regrouping.

2



What is the total number of pupils in 6 buses?

$6 \times 44 =$ ☐

tens	ones
4	4
×	6
	24

Multiply ones
6 × 4 ones = 24 ones
24 ones is 2 tens and 4 ones.

	tens	ones
	2	
	4	4
×		6
	26	4

Multiply tens
6 × 4 tens = 24 tens
24 tens + 2 tens = 26 tens
26 tens is 2 hundreds and 6 tens.

hundreds	tens	ones
2	2	
0	4	4
×		6
2	6	4

Multiply hundreds
6 × 0 hundreds = 0 hundreds
0 hundreds + 2 hundreds = 2 hundreds

$6 \times 44 =$ **264**

The total number of pupils in 6 buses is **264**.

3 $109 \times 7 =$ ☐

Method 1

$$\begin{array}{r} {\scriptstyle 6}\,1\,0\,9 \\ \times \quad 7 \\ \hline 7\,6\,3 \end{array}$$

Method 2

1	0	9	×
0 / 7	0 / 0	6 / 3	7
7	6	3	

SCAN THIS

$109 \times 7 =$ **763**

TEACHER'S NOTES

- Guide pupils to multiply using lattice and mental calculation methods.
- Encourage pupils to check their answers using estimation.

2.3.1

4 576 × 8 = ☐

×	500	70	6
8	4 000	560	48

576 × 8 = 4 000 + 560 + 48
= 4 608

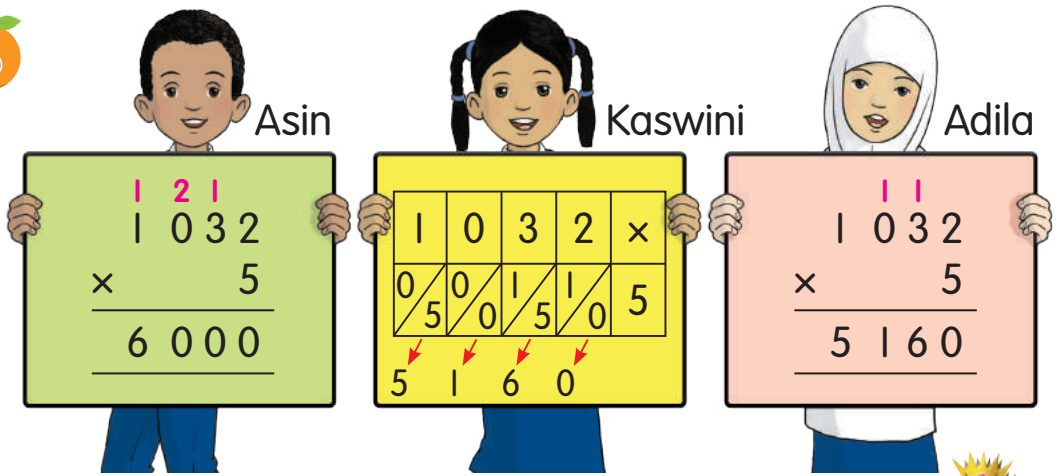
576 × 8 = **4 608**

5 4 × 2 193 = ☐


```
  2 1 9 3
×       4
---------
    1 2
  3 6 0
  4 0 0
+ 8 0 0 0
---------
  8 7 7 2
```

4 × 2 193 = **8 772**

6



Whose answer is correct? Why?

LET'S TRY

Multiply.

a
```
  3 0
×   2
-------
```

b
```
  6 7
×   6
-------
```

c
```
  2 0 9
×     3
---------
```

d
```
  2 0 1 5
×       4
-----------
```

e 65 × 8 = ☐

f 5 × 417 = ☐

g 9 × 1 108 = ☐

AB 40 TEACHER'S NOTES

- Encourage pupils to use times table as a reference.
- Remind pupils about the commutative law in multiplication, that is a × b = b × a.

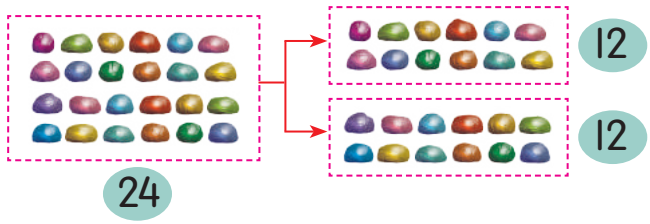
2.3.1

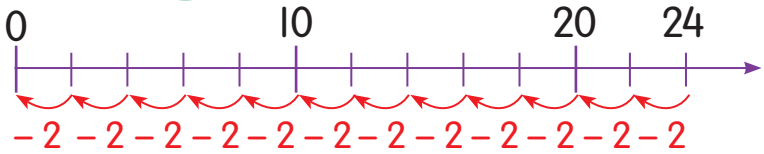
DIVISION

1 We put 24 small stones equally into 2 jars.

Calculate the number of small stones in one jar.

$24 \div 2 =$ ☐

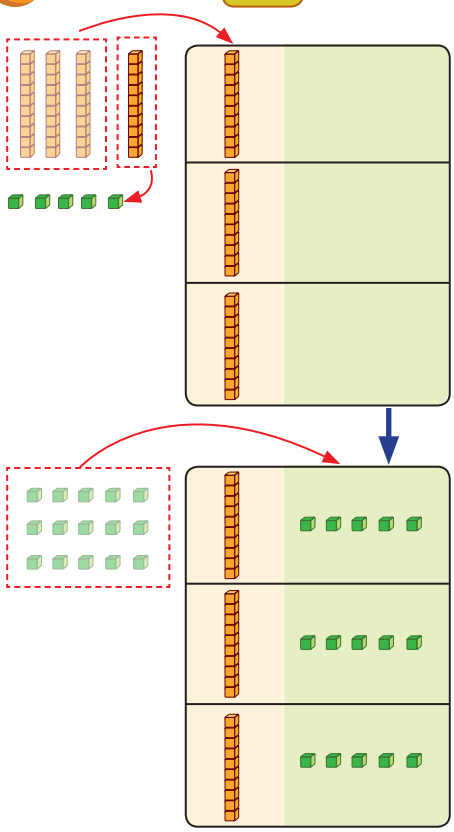




$24 \div 2 =$ **12**

There are **12** small stones in one jar.

2 $45 \div 3 =$ ☐



$$\begin{array}{r} 1 \\ 3\overline{)\,4\,5} \\ -\,3\downarrow \\ \hline 1\,5 \end{array}$$

Divide tens
4 tens ÷ 3
= 1 tens remainder 1 tens

Change 1 tens to 10 ones.
10 ones + 5 ones = 15 ones

$$\begin{array}{r} 1\,5 \\ 3\overline{)\,4\,5} \\ -\,3\downarrow \\ \hline 1\,5 \\ -\,1\,5 \\ \hline 0 \end{array}$$

Divide ones
15 ones ÷ 3 = 5 ones

$45 \div 3 =$ **15**

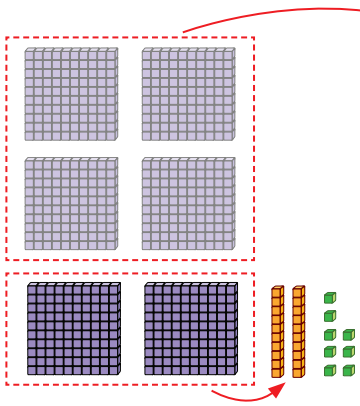
TEACHER'S NOTES

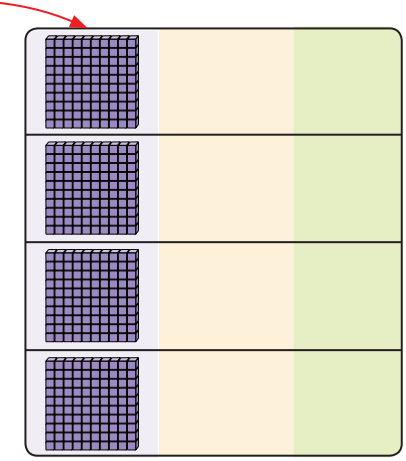
- Guide pupils to divide numbers without a remainder using object simulations, diagrams, and times tables.
- Guide pupils to construct a 3 times table for an easier division process.

2.4.1

3 628 doughnuts are packed in fours. How many packets of doughnuts are there?

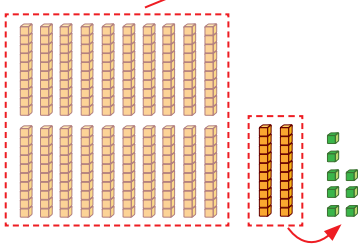
$628 \div 4 =$ ☐

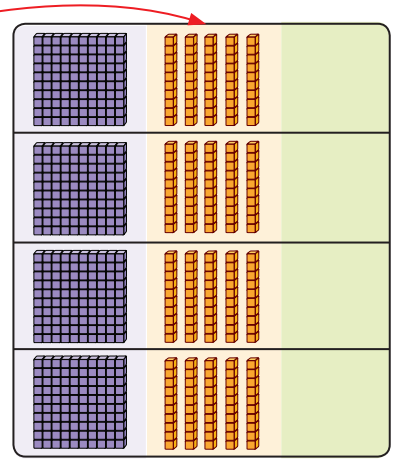




$$\begin{array}{r} 1 \\ 4\overline{)\,6\,2\,8} \\ -\,4\downarrow \\ \hline 2\,2 \end{array}$$

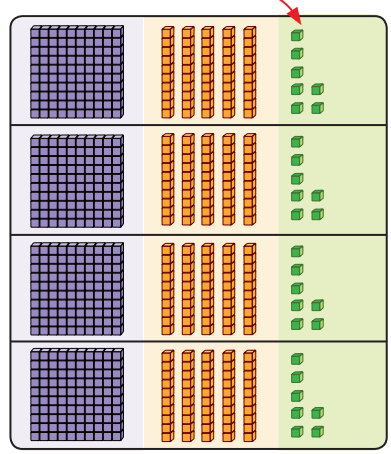
Divide hundreds. Change the 2 hundreds remainder to 20 tens.





$$\begin{array}{r} 1\,5 \\ 4\overline{)\,6\,2\,8} \\ -\,4\downarrow \\ \hline 2\,2 \\ -\,2\,0 \\ \hline 2\,8 \end{array}$$

Divide tens. Change the 2 tens remainder to 20 ones.



$$\begin{array}{r} 1\,5\,7 \\ 4\overline{)\,6\,2\,8} \\ -\,4 \\ \hline 2\,2 \\ -\,2\,0 \\ \hline 2\,8 \\ -\,2\,8 \\ \hline 0 \end{array}$$

Divide ones.

There are **157** packets of doughnuts.

$628 \div 4 =$ **157**

- Guide pupils to divide numbers starting with hundreds, followed by tens and ones.

4 2 100 ÷ 7 = ☐

Method 1

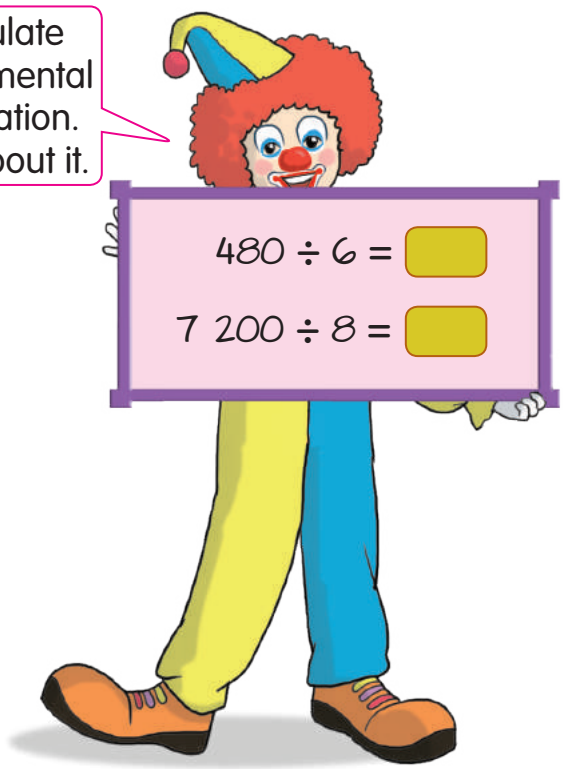
```
   3 0 0
7 ) 2 1 0 0
  - 2 1
    0 0
  -   0
      0 0
    -   0
        0
```

Method 2

3 × 7 = 21

300 × 7 = 2 100

2 100 ÷ 7 = **300**



5 5 045 ÷ 5 = ☐

```
   1 0 0 9
5 ) 5 0 4 5
  - 5
    0 0
  -   0
      0 4
    -   0
        4 5
      - 4 5
          0
```

5 045 ÷ 5 = **1 009**

6

Blue Card

```
    9 2 0
8 ) 7 2 1 6
  - 7 2
    0 1 6
  -   1 6
        0
```

Green Card

```
    9 0 2
8 ) 7 2 1 6
  - 7 2
    0 1
  -   0
      1 6
    - 1 6
        0
```

Which calculation is correct?

- Provide questions involving division in the form of games or number puzzles.
- Guide pupils to estimate before calculating the actual answers.

7 690 ÷ 10 = ☐

$$\begin{array}{r} 69 \\ 10\overline{)690} \\ -60\downarrow \\ \hline 90 \\ -90 \\ \hline 0 \end{array}$$

690 ÷ 10 = **69**

8 8 600 ÷ 100 = ☐

$$\begin{array}{r} 86 \\ 100\overline{)8600} \\ -800\downarrow \\ \hline 600 \\ -600 \\ \hline 0 \end{array}$$

8 600 ÷ 100 = **86**

9 7 000 ÷ 1 000 = ☐

7 000 ÷ 10 = 700
7 000 ÷ 100 = 70
7 000 ÷ 1 000 = ?

7 000 ÷ 1 000 = **7**

10 ☐ ÷ 10 = 204

$$\begin{array}{r} 204 \\ \times\ 10 \\ \hline 2040 \end{array}$$

2 040 ÷ 10 = 204

LET'S TRY

Divide.

a $2\overline{)36}$ b $3\overline{)603}$ c $5\overline{)840}$ d $6\overline{)1\,200}$

e 80 ÷ 4 = ☐ f 5 004 ÷ 9 = ☐ g 180 ÷ 10 = ☐

h 4 700 ÷ 100 = ☐ i 9 000 ÷ 1 000 = ☐ j ☐ ÷ 100 = 11

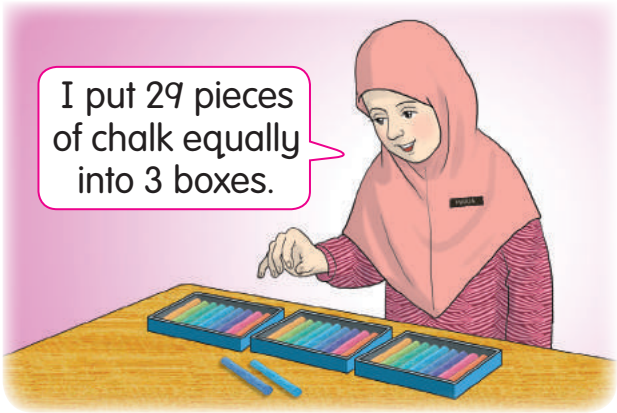
AB 42 TEACHER'S NOTES

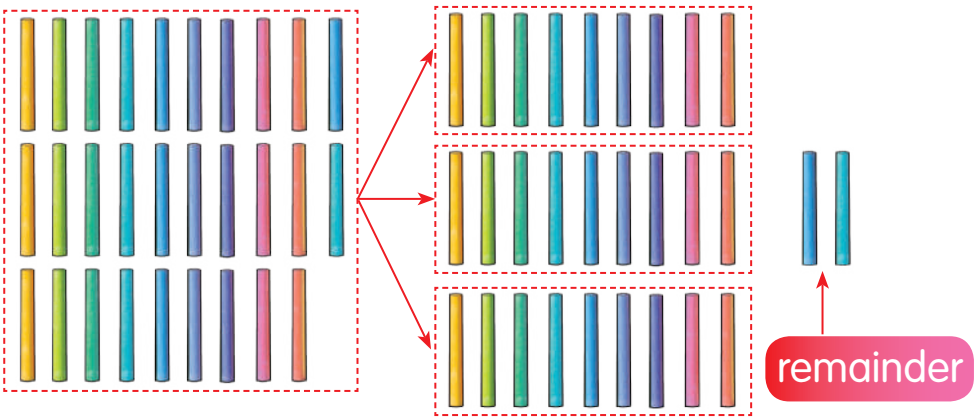
- Guide pupils to check their answers using multiplication.

MORE DIVISION

1 How many pieces of chalk are there in each box? How many pieces of chalk are left?

$29 \div 3 =$ ☐

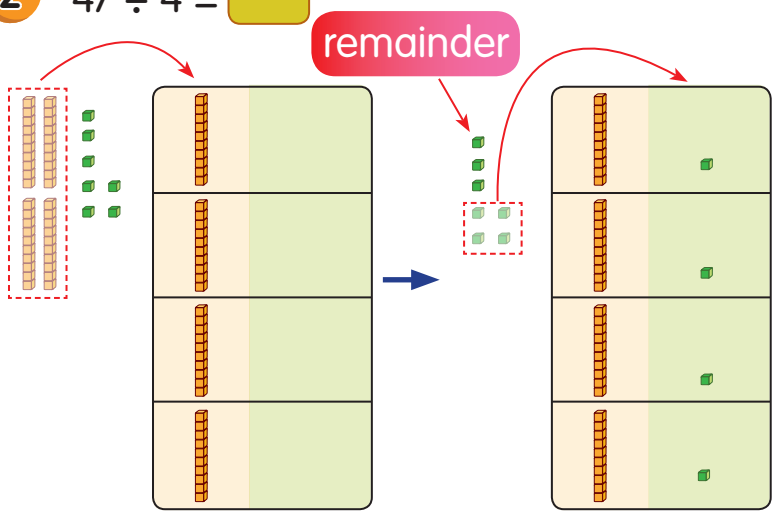




$29 \div 3 =$ **9 remainder 2**

Each box has 9 pieces of chalk.
There are **2** pieces of chalk left.

2 $47 \div 4 =$ ☐



$$\begin{array}{r} 11 \\ 4\overline{)\,47} \\ -\,4\downarrow \\ \hline 07 \\ -\;4 \\ \hline 3 \end{array}$$ remainder

$47 \div 4 =$ **11 remainder 3**

TEACHER'S NOTES

- Carry out simulation activities using objects and representatives.
- Guide pupils to use other division strategies such as repeated subtraction according to pupils' level of understanding.

2.4.1

3 376 ÷ 6 = ☐

```
   62
6)376
 -36
  16
 -12
   4
```

376 ÷ 6 = **62 remainder 4**

4 8 035 ÷ 9 = ☐

```
   □9□
9)8035
 -72
  83
 -81
  25
 -□
  □
```

8 035 ÷ 9 = **□9□ remainder □**

5 682 ÷ 10 = ☐

```
   68
10)682
 -60
  82
 -80
   2
```

682 ÷ 10 = **68 remainder 2**

6 7 090 ÷ 100 = ☐

```
    70
100)7090
 -700
  590
 -  0
  590
```

7 090 ÷ 100 = **70 remainder 90**

7 8 400 ÷ 1 000 = ☐

```
    8
1000)8400
 -8000
  400
```

8 400 ÷ 1 000 = **8 remainder 400**

AB 43-44 TEACHER'S NOTES

- Encourage pupils to check their answers using multiplication.

8

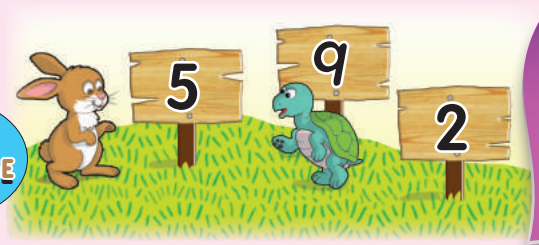
a 9 768 ÷ 10 = 976 remainder 8

b 9 768 ÷ 100 = 97 remainder 68

c 9 768 ÷ 1 000 = ____

MIND CHALLENGE

Fill in the blanks with the digits given.



3 1 7 remainder 1

3) ☐☐☐

LET'S TRY

Divide.

a $2\overline{)45}$ b $3\overline{)590}$ c $7\overline{)8\,032}$ d $10\overline{)607}$

e 92 ÷ 5 = ☐ f 702 ÷ 8 = ☐ g 1 502 ÷ 9 = ☐

h 3 791 ÷ 10 = ☐ i 513 ÷ 100 = ☐ j 4 300 ÷ 1 000 = ☐

• Provide more exercises to reinforce pupils' understanding.

CREATE STORIES

1

$3 \times 24 = \mathbf{72}$

Puan Zurina distributed bags of souvenirs to **3** group leaders. Each group leader received **24** bags. The total number of bags is **72**.

2

$8 \times \text{RM}1\,000 = \mathbf{RM8\,000}$

8 pupils won the robotic competition. Each pupil received **RM1 000**. The total amount of money received is **RM** ____.

3

$675 \div 9 = \mathbf{75}$

There were **675** boxes of food distributed to ____ orphanages. Each orphanage received ____ boxes.

4

$3\,740 \div 100$
$= \mathbf{37 \text{ remainder } 40}$

____ key chains are put into **100** boxes. Each box contains **37** key chains. The remainder of the key chains are ____.

LET'S TRY

Create stories.

a $16 \times 4 = 64$

b $7 \times 1\,000 = 7\,000$

c $528 \div 6 = 88$

d $643 \div 100 = 6 \text{ remainder } 43$

AB 45-46 TEACHER'S NOTES

- Guide pupils to create stories based on the pictures and number sentences.
- Provide suitable keywords to help pupils create stories.

2.7.1

KPM

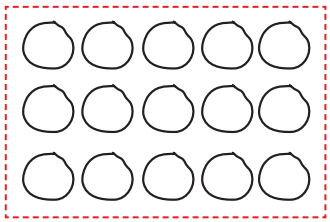
SOLVE THE PROBLEMS

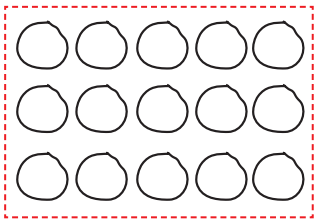
1 Darren's mother bought 4 boxes of strawberries. Each box has 15 strawberries. What is the total number of strawberries?

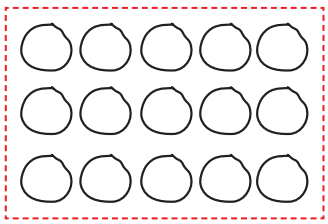
Given bought 4 boxes of strawberries
A box has 15 strawberries.

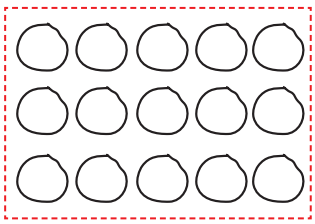
Find total number of strawberries

Method


15 strawberries

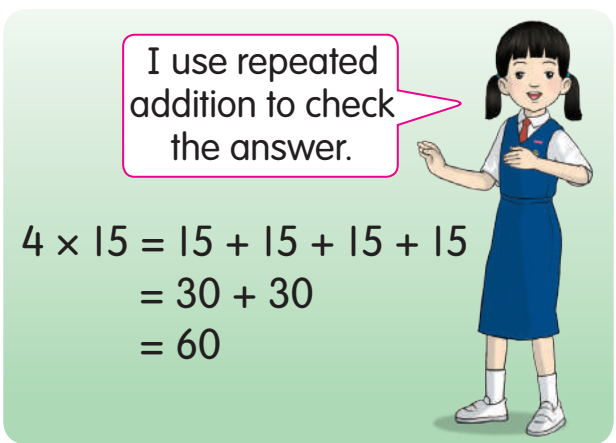

15 strawberries


15 strawberries


15 strawberries

$4 \times 15 = \square$

$$\begin{array}{r} {\scriptstyle 2} \\ 15 \\ \times\ \ 4 \\ \hline 60 \end{array}$$



$4 \times 15 = \boxed{60}$

The total number of strawberries is **60**.

TEACHER'S NOTES

- Guide pupils to solve problems using various methods such as models and number lines.
- Provide more practise in constructing number sentences orally based on story cards.

2

Farm	Bee Tin's father	Jarjit's father
Number of cocoa trees	1 670	3 times the number of trees Bee Tin's father has

How many cocoa trees are there on Jarjit's father's farm?

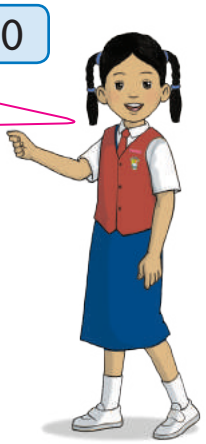
Method Bee Tin's father's farm [1 670]

Jarjit's father's farm [1 670] [1 670] [1 670]

$3 \times 1\,670 =$ ☐

$$\begin{array}{r} {\scriptstyle 2\ \ 2\ \ \ } \\ 1\,670 \\ \times \quad 3 \\ \hline 5\,010 \end{array}$$

$3 \times 1\,670 =$ **5 010**



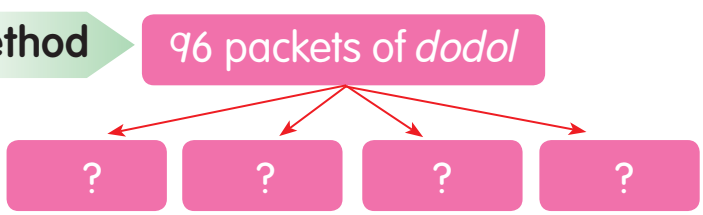
The number of cocoa trees on Jarjit's father's farm is **5 010**.

3 Hajar puts 96 packets of *dodol* equally into 4 containers. How many packets are there in each container?

Given 96 packets of *dodol*, 4 containers

Find number of packets of *dodol* in each container

Method

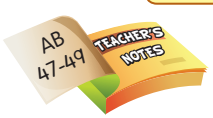


$96 \div 4 =$ ☐

$$\begin{array}{r} 24 \\ 4\overline{)\,96} \\ -\ 8\ \downarrow \\ \hline 16 \\ -\ 16 \\ \hline 0 \end{array}$$

$96 \div 4 =$ **24**

The number of packets of *dodol* in each container is **24**.



- Guide pupils to underline important points and understand the questions.
- Guide pupils to solve problems using number lines and encourage them to check their answers.

4 A factory produces 9 507 bottles of soursop juice in one day. 8 bottles are packed in each box. How many boxes of soursop juice are there? What is the remainder of bottles?

Given There are 9 507 bottles of juice. Each box has 8 bottles.

Find number of boxes and remainder of bottles

Method 9 507 ÷ 8 = ☐ remainder ☐

```
  1 1 8 8
8)9 5 0 7
- 8
  1 5
-   8
    7 0
  - 6 4
      6 7
    - 6 4
        3
```

9 507 ÷ 8 = **1 188** remainder **3**

1 188 boxes of juice are produced. The remainder is **3** bottles.

LET'S TRY

Solve these.

a Rita arranges 18 flowers in a vase. Calculate the total number of flowers in 6 vases.

b A charity organisation distributes 840 storybooks equally to 5 orphanages. How many storybooks does each orphanage get?

c There are 2 008 packets of batteries. Each box has 100 packets of batteries. How many packets of batteries are not in the boxes?

AB 49 TEACHER'S NOTES

- Working backwards is an easy way to check whether the answers are reasonable or not.
- Guide pupils to check the answers of division involving remainders.

RECOGNISE MORE UNKNOWN

1

The **number of pages for each comic** is the **unknown**.

3 comics **times the certain number** of pages is **150** pages.

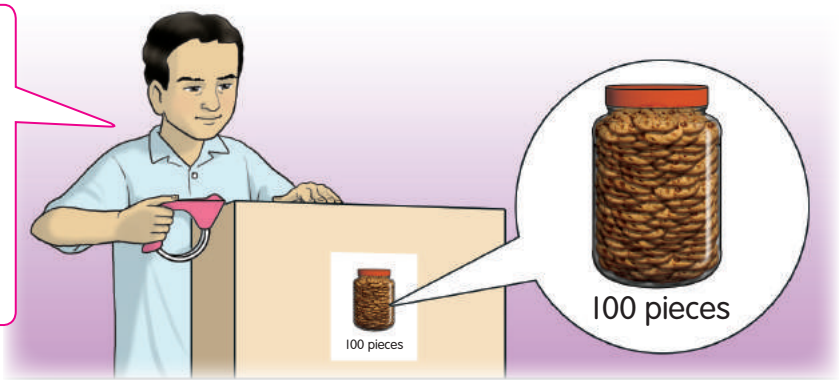
3 multiply **unknown** is equal to **150**.

Number sentence $3 \times \square = 150$

unknown

2

There are several jars of biscuits in this box. The total number of biscuits is 1 200 pieces.



Several jars is the **unknown**.

Number sentence $\square \times 100 = 1\,200$

unknown

TEACHER'S NOTES

- Carry out simulation activities using story cards to identify the unknown.
- Provide a variety of unknown symbols in teaching and learning process. For example ▲ and ★.

2.6.1
2.6.2

3

Puan Siti hands out 20 pieces of coloured paper equally to several pupils. Each pupil receives 5 pieces of coloured paper.

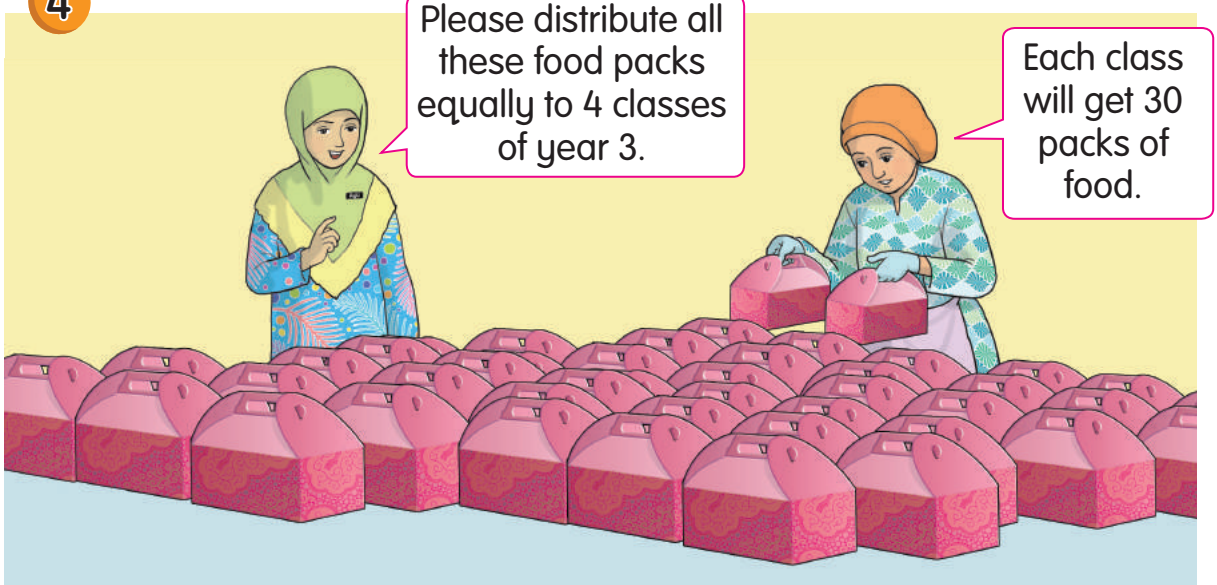
Identify the unknown. Write the number sentence.

Several pupils is the **unknown.**

20 divided by the **unknown** is equal to **5**.

20 ÷ ☐ = 5

4



State the unknown. Write the number sentence.

The **unknown** is ☐.

⬡ ÷ 4 = 30

AB 50 TEACHER'S NOTES

- Carry out simulation activities to identify the unknown. Encourage pupils to relate the multiplication with division.

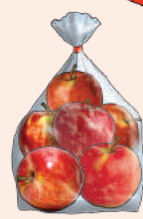
2.6.1
2.6.2

The total mass of several similar cakes is 4 000 g. State the unknown. Write the number sentence.

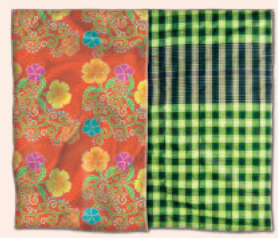
LET'S TRY

Identify the unknowns. Write the number sentences.

a Jamit has several files. He keeps 20 certificates in one file. There are 40 certificates altogether.



b Mogan's mother buys a quantity of apples. She puts 6 apples into each plastic bag and sells them. She has 30 bags of apples.



c Habsah's textile factory donated 400 pieces of batik and *pelekat* sarong to several charities. Each charity received 80 pieces.

d 35 schools take part in the Muafakat Johor Run. Each school is represented by a number of pupils. The total number of pupils participating in the run is 3 500.

TEACHER'S NOTES

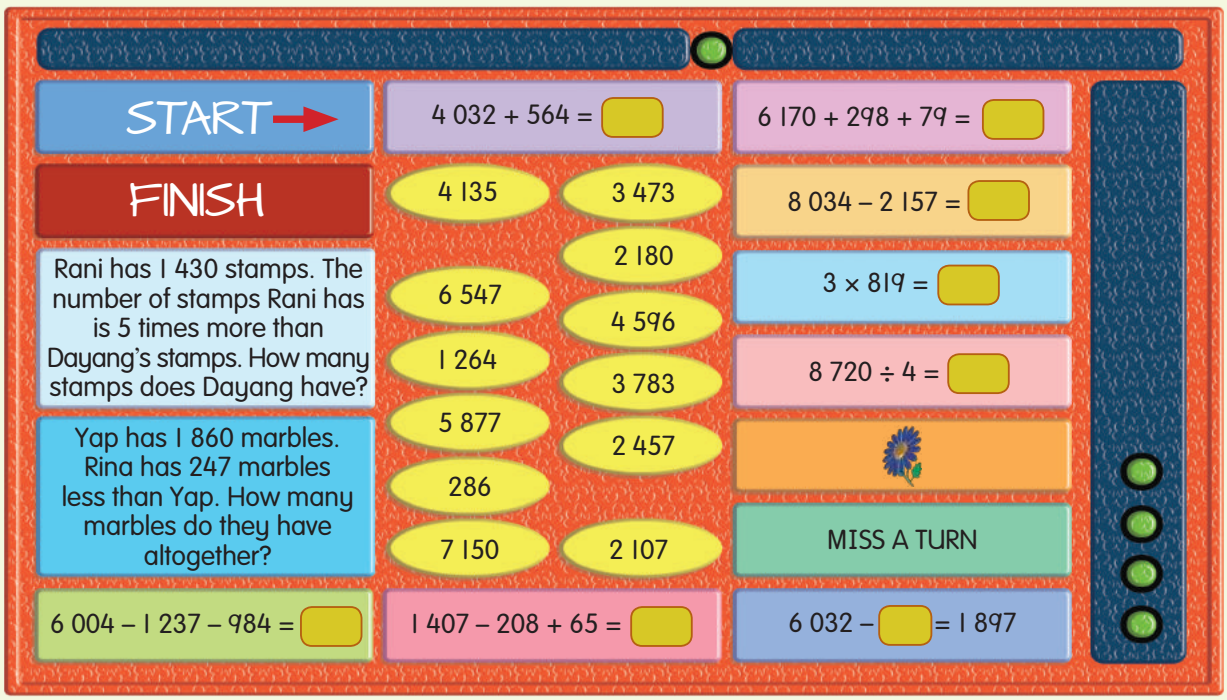
- Guide pupils to identify the unknown based on several situations inside and outside the classroom.

2.6.1
2.6.2

COLLECT CHIPS

Tools/Materials dice, A4 paper, pencil, 2 markers, 12 red chips, 12 blue chips

Participants 2 players and 1 referee



Method

1. Throw the dice. The first player moves the marker according to the number on the dice.
2. Answer the question. Show your calculation to the referee. If it is correct, put a chip on the answer in the middle.
3. If the marker stops on the flower, put a chip on any answer in the middle.
4. The next player takes his/her turn. Repeat steps 1 to 3. If the marker stops on a question answered correctly, throw the dice again.
5. The player with the most chips wins.

AB 51-52 TEACHER'S NOTES

- Provide copies of the game for pupils.
- Ask pupils to determine their turns before the game starts. Players should take a set of coloured chips and a marker.
- Instil cooperation, honesty, and trustworthiness while playing.

2.1.1, 2.1.2, 2.2.1, 2.2.2, 2.3.1, 2.4.1, 2.5.1, 2.7.3

3 FRACTIONS, DECIMALS, AND PERCENTAGES

TEACHER'S NOTES

- Discuss fractions, decimals, and percentages shown in the picture above.
- Ask pupils to state several daily situations related to fractions, decimals, and percentages.

3.1.1, 3.2.1
3.3.1, 3.3.2

KPM

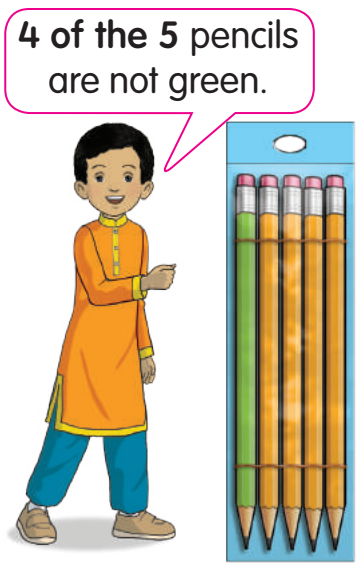
PROPER FRACTIONS

1

Three over four is written as $\frac{3}{4}$ (3: numerator, 4: denominator)

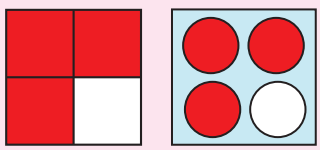
$\frac{3}{4}$ is a **proper fraction.**
The numerator is smaller than the **denominator.**

2



4 of 5 is **four over five.**
Four over five is written as $\frac{4}{5}$.

Look at the diagram. Do the red parts have the same fractions? Discuss.



LET'S TRY

State the fractions of the balloons:

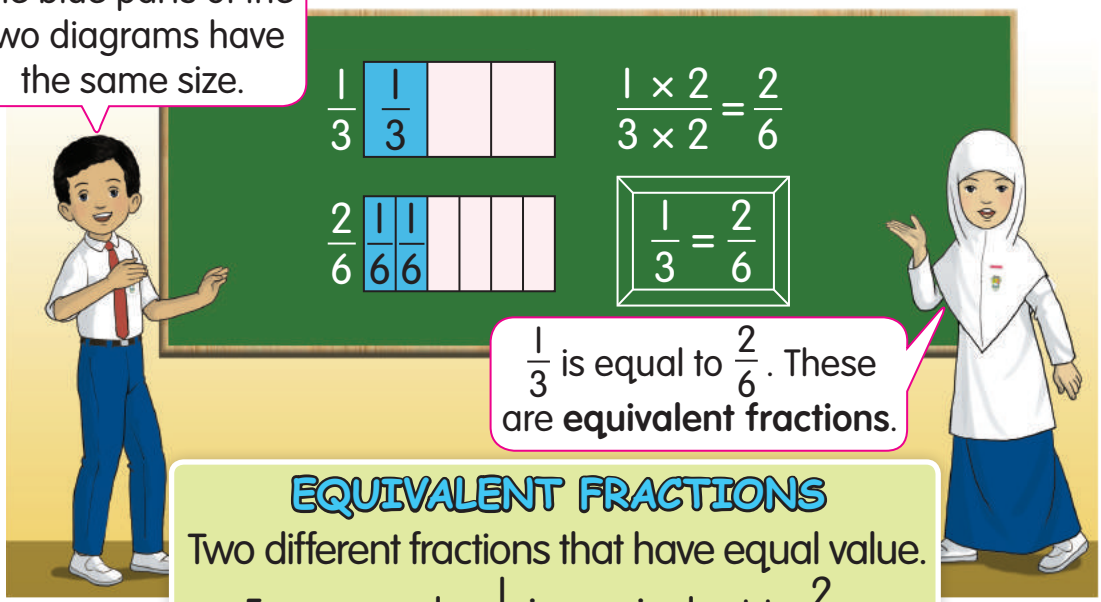
a red.
b blue.
c yellow.
d purple.

- Carry out activities of stating various proper fractions from a group of objects where the denominator is up to 10 using flash cards.
- Explain that the value of a proper fraction is less than 1.
- Surf http://www.mathinenglish.com/worksheetview.php?id=3079&stid=10020

AB 53-54 TEACHER'S NOTES

EQUIVALENT FRACTIONS

1 The blue parts of the two diagrams have the same size.



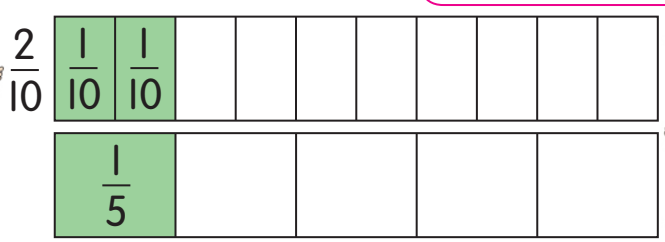
EQUIVALENT FRACTIONS

Two different fractions that have equal value.

For example, $\frac{1}{2}$ is equivalent to $\frac{2}{4}$.

2 Is $\frac{2}{10}$ equivalent to $\frac{1}{5}$?

Method 1



Method 2

$$\frac{2 \div 2}{10 \div 2} = \frac{1}{5}$$

$$\frac{2}{10} = \frac{1}{5}$$

$\frac{2}{10}$ is **equivalent** to $\frac{1}{5}$.

TEACHER'S NOTES

- Use the same size and same coloured paper to colour parts that make equivalent fractions.
- Reinforce pupils' understanding of equivalent fractions by simulation using a fraction kit, paper strips, and transparencies.

3 What is the equivalent fraction of $\frac{1}{2}$?

FRACTION CHART

	$\frac{1}{2}$									
	$\frac{1}{3}$									
$\frac{2}{4}$	$\frac{1}{4}$	$\frac{1}{4}$								
	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$							
$\frac{3}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$							
$\frac{4}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$						
$\frac{5}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$					

$\frac{1}{2} = \frac{2}{4}$ $\frac{1}{2} = \frac{3}{6}$ $\frac{1}{2} = \frac{4}{8}$ $\frac{1}{2} = \frac{\square}{\square}$

The equivalent fractions of $\frac{1}{2}$ are $\frac{2}{4}$, $\frac{\square}{\square}$, $\frac{\square}{\square}$ and $\frac{\square}{\square}$.

Give examples of equivalent fractions based on the chart above.

LET'S TRY

Choose and say the following equivalent fractions.

a $\frac{2}{3}$ → $\frac{4}{6}$, $\frac{1}{6}$

b $\frac{4}{5}$ → $\frac{8}{5}$, $\frac{8}{10}$

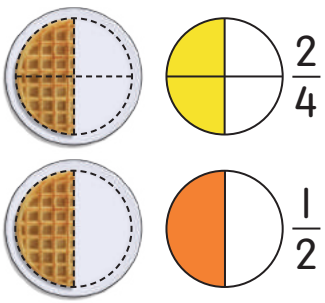
c $\frac{3}{4}$ → $\frac{4}{8}$, $\frac{6}{8}$

d $\frac{6}{9}$ → $\frac{2}{3}$, $\frac{3}{2}$

- Emphasise that to find an equivalent fraction, multiply or divide the denominator and numerator by the same number.
- Explore the number pattern of the numerator and denominator for equivalent fractions.
- Surf www.mathfox.com/topics/fractions/ for reinforcement exercises.

FRACTIONS IN THE SIMPLEST FORM

1 $\frac{2}{4}$ equals $\frac{1}{2}$.
Which fraction shows the simplest form?



$\frac{2}{4}$

$\frac{1}{2}$

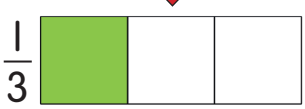
$\frac{2 \div 2}{4 \div 2} = \frac{1}{2}$

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

$\frac{1}{2}$ is **the simplest form** of $\frac{2}{4}$.

2 State $\frac{3}{q}$ in the simplest form.

$\frac{3}{q}$



$\frac{1}{3}$

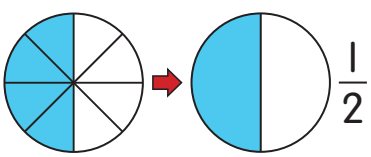
$\frac{3 \div 3}{q \div 3} = \frac{1}{3}$

$\frac{3}{q} = \frac{1}{3}$

$\frac{3}{q}$ in **the simplest form** is $\frac{1}{3}$.

3

$\frac{4}{8}$



$\frac{1}{2}$

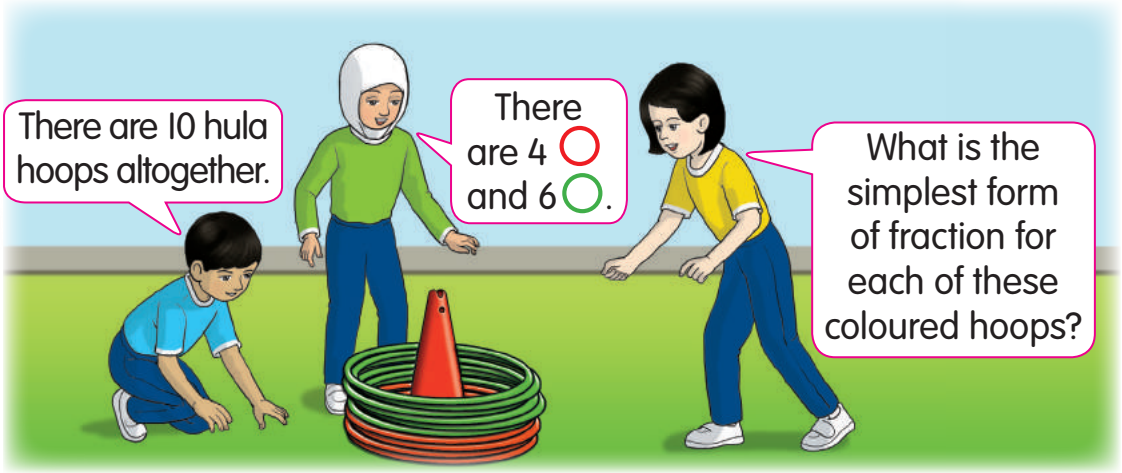
$\frac{4 \div 4}{8 \div 4} = \frac{1}{2}$

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

TEACHER'S NOTES

- Emphasise that to simplify a fraction, the numerator and the denominator must be divided by the same number.
- Emphasise that the simplest form of fraction has the smallest value for the numerator and denominator, and can only be divided by 1.

4



a The fraction of ○ is $\frac{4}{10}$.

$\frac{4}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$
$\frac{2}{5}$	$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$	

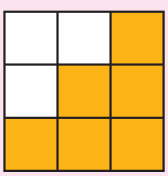
$\frac{4}{10} = \frac{2}{5}$

The simplest form of $\frac{4}{10}$ is $\frac{2}{5}$.

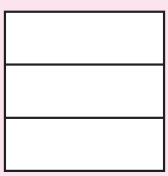
b The fraction of ○ is $\frac{6}{10}$.

$\frac{6}{10} = \frac{6 \div \square}{10 \div \square} = \frac{\square}{\square}$

The simplest form of $\frac{6}{10}$ is $\frac{\square}{\square}$.



Dina



Ailee

How many parts should Ailee colour so that it is equal to Dina's?

LET'S TRY

Simplify.

a $\frac{2}{6} = \frac{2 \div \square}{6 \div \square} = \frac{\square}{\square}$

b $\frac{4}{8} = \frac{4 \div \square}{8 \div \square} = \frac{\square}{\square}$

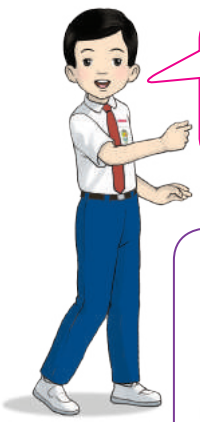
c $\frac{8}{10} = \frac{8 \div \square}{10 \div \square} = \frac{\square}{\square}$

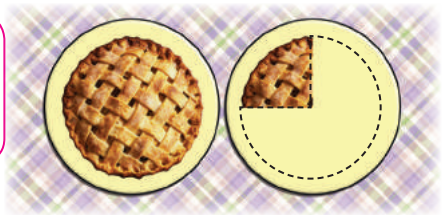
AB 56 TEACHER'S NOTES

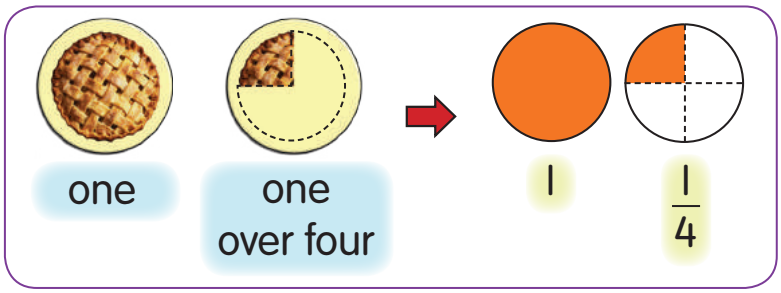
- Surf www.kidsmathtv.com/video-by-topic/fractions-ratios-and-percentages/ to watch a video of fractions in the simplest form.

IMPROPER FRACTIONS AND MIXED NUMBERS

1







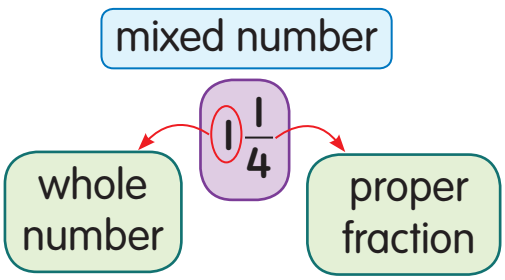
There is **one and one over four** pie.

One and one over four is written as $1\frac{1}{4}$.

$1\frac{1}{4}$ is a **mixed number**.

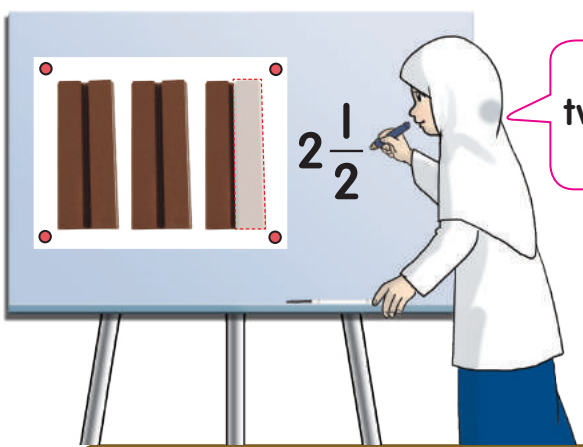
1 is a **whole number**.

$\frac{1}{4}$ is a **proper fraction**.



There is $1\frac{1}{4}$ pie.

2



There are **two and one over two** chocolate fingers.

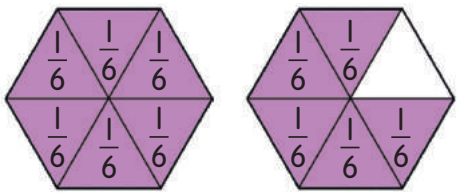
Give other examples of mixed numbers.

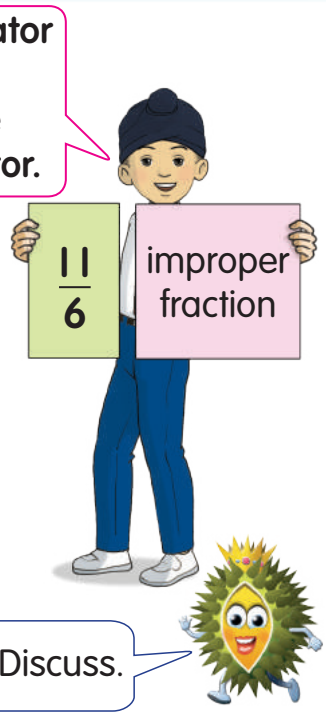
TEACHER'S NOTES

- Use various objects such as fraction kits to show mixed numbers.
- Explain that the value of a proper fraction is less than 1 and the value of a mixed number is more than 1.

3.1.7

3 Two hexagons are divided into 6 equal parts.
What is the fraction of 11 parts?





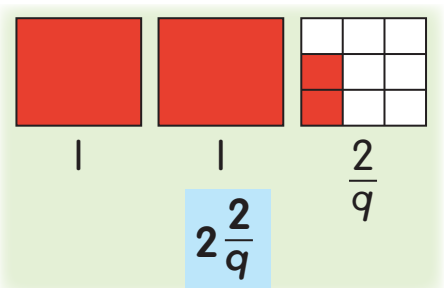
11 parts of $\frac{1}{6}$ is $\frac{11}{6}$.

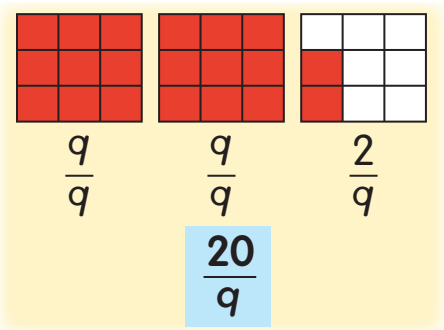
$\frac{11}{6}$ is an **improper fraction**.

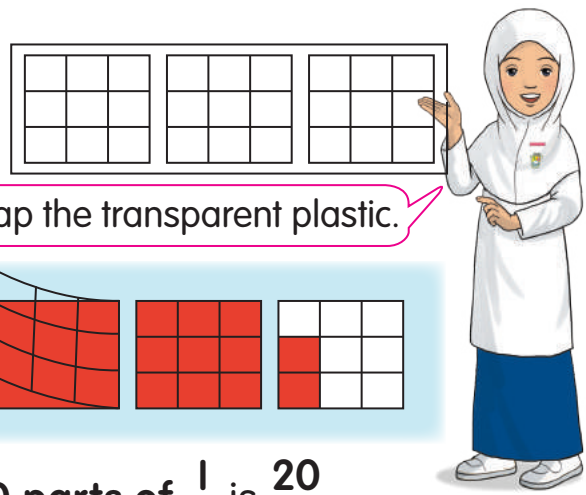
The fraction of 11 parts is $\frac{11}{6}$.

$\frac{6}{6}$ is also an improper fraction. Discuss.

4 State $2\frac{2}{q}$ as an improper fraction.







20 parts of $\frac{1}{q}$ is $\frac{20}{q}$.

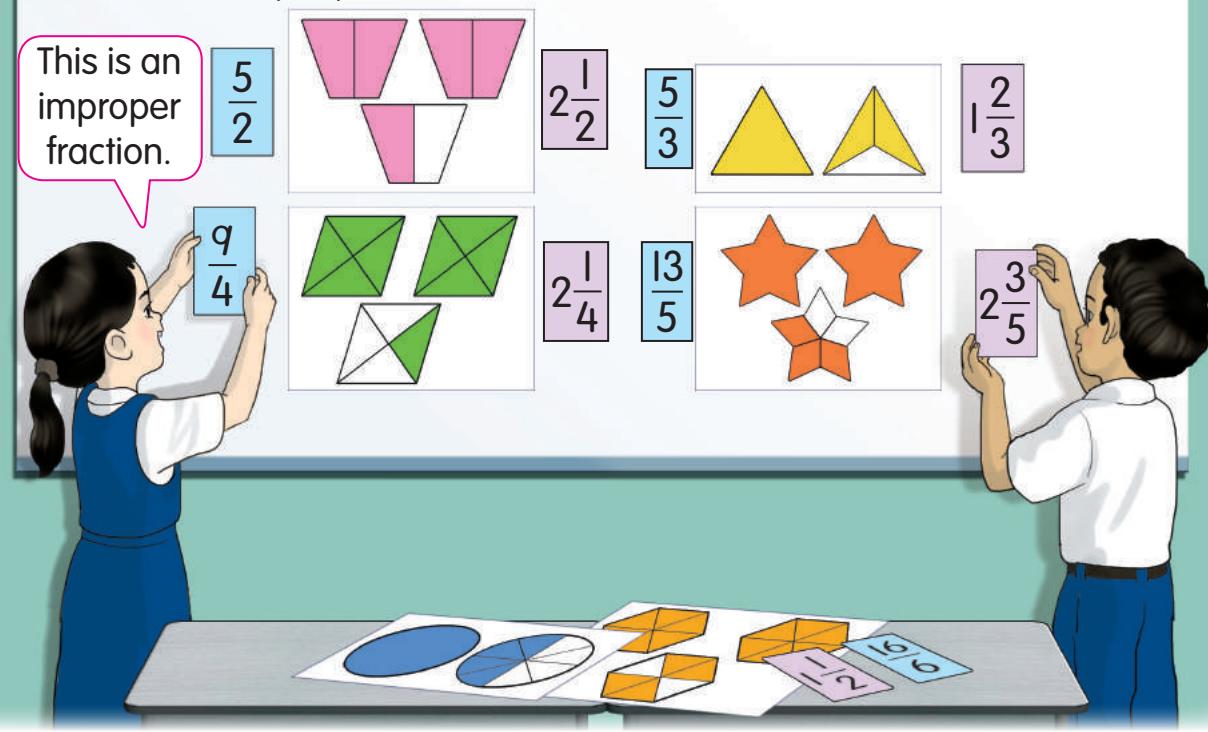
$$2\frac{2}{q} = \frac{20}{q}$$

- Carry out paper folding activities to show the relationship between mixed numbers and improper fractions.
- Explain that an improper fraction has a numerator larger than or equal to the denominator.

5 Monday

Improper Fractions and Mixed Numbers

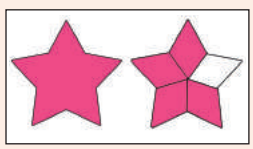
4/3/2019

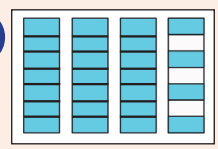


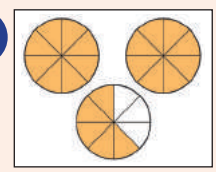
What can you tell about these two fractions?

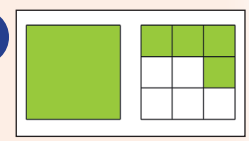
LET'S TRY

1 Write the mixed numbers and improper fractions.

a 

b 

c 

d 

2 $2\frac{1}{4}$ $\frac{6}{6}$ $3\frac{2}{9}$ $\frac{9}{4}$ $1\frac{4}{5}$ $\frac{7}{3}$ $\frac{14}{8}$ $\frac{15}{7}$

a Say the improper fractions.

b Say the mixed numbers.

AB 58 TEACHER'S NOTES

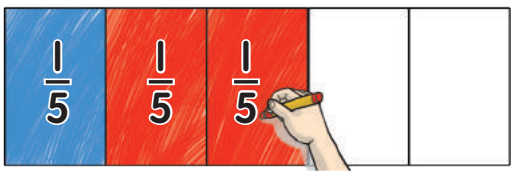
- Prepare suitable examples of improper fractions and mixed numbers involving the denominators up to 10 using shapes for identifying activities.

3.1.7

KPM

ADDITION OF FRACTIONS

1 $\frac{1}{5} + \frac{2}{5} = \square$

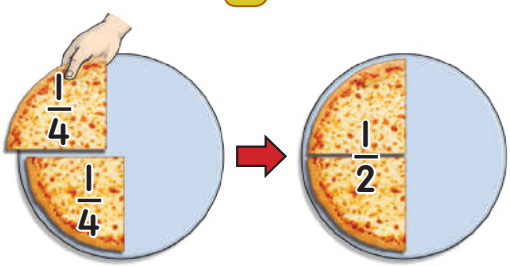


$\frac{1}{5} + \frac{2}{5} = \boxed{\frac{3}{5}}$

The denominator is the same. Just add the numerator.

2 Add $\frac{1}{4}$ and $\frac{1}{4}$.

$\frac{1}{4} + \frac{1}{4} = \square$

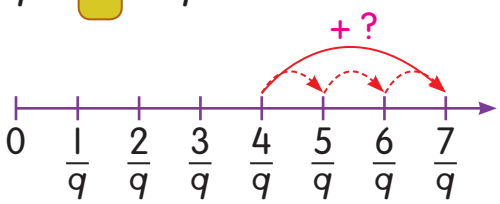


$\frac{1}{4} + \frac{1}{4} = \boxed{\frac{1}{2}}$

$$\frac{1}{4} + \frac{1}{4} = \frac{2}{4}$$
$$= \frac{2 \div 2}{4 \div 2}$$
$$= \frac{1}{2}$$

Simplify $\frac{2}{4}$.

3 $\frac{4}{q} + \square = \frac{7}{q}$



$\frac{4}{q} + \boxed{\frac{3}{q}} = \frac{7}{q}$

Look at the number line. What are two other fractions which give a total of $\frac{7}{q}$?

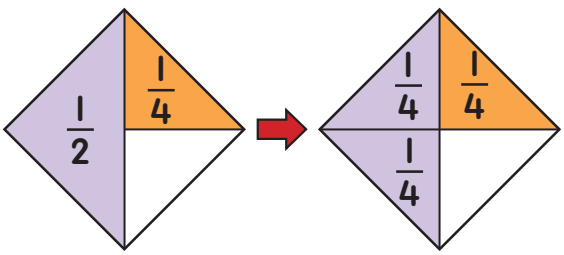
AB 59 TEACHER'S NOTES

- Use paper strips, paper discs, transparencies, and picture cards to simulate addition. Emphasise that to add fractions of the same denominator, pupils only have to add the numerators.

3.1.5 (i)

4 $\frac{1}{2} + \frac{1}{4} = \square$

Method 1



$\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$

Method 2

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

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

$= \frac{3}{4}$

5 $\frac{1}{2} + \frac{1}{6} = \square$

$\frac{1}{2} + \frac{1}{6} = \frac{1 \times 3}{2 \times 3} + \frac{1}{6}$

$= \frac{3}{6} + \frac{1}{6}$

$= \frac{4 \div 2}{6 \div 2}$

$= \frac{2}{3}$

$\frac{1}{2} + \frac{1}{6} = \frac{2}{3}$

6 $\frac{2}{3} + \frac{1}{6} = \square$

$\frac{2}{3} + \frac{1}{6} = \frac{2 \times 2}{3 \times 2} + \frac{1}{6}$

$= \frac{\square}{\square} + \frac{1}{6}$

$= \frac{\square}{\square}$

$\frac{2}{3} + \frac{1}{6} = \square$

$\frac{1}{2} + \frac{1}{8} = \square$

$\frac{1}{2} + \frac{3}{10} = \square$

$\frac{1}{3} + \frac{4}{9} = \square$

TEACHER'S NOTES

- Guide pupils to construct a fraction chart to find equivalent fractions when adding two fractions of different denominators.
- Emphasise that in order to add two fractions of different denominators, they must find a common denominator for both.

3.1.5 (ii)
3.1.5 (iii)

KPM

7

$\frac{2}{5} + \frac{3}{10} = \square$

$\frac{2}{5} + \frac{3}{10} = \frac{2}{10} + \frac{3}{10}$

$= \frac{5 \div 5}{10 \div 5}$

$= \frac{1}{2}$

$\frac{3}{4} + \frac{1}{8} = \square$

$\frac{3}{4} + \frac{1}{8} = \frac{3 \times 2}{4 \times 2} + \frac{1}{8}$

$= \frac{6}{8} + \frac{1}{8}$

$= \frac{7}{8}$

Look at the calculations above. Which one is correct? Discuss.

Show the workings for this answer.

$\frac{3}{8} + \square = \frac{7}{8}$

LET'S TRY

Solve these.

a $\frac{1}{3} + \frac{1}{3} = \square$

b $\frac{2}{7} + \frac{4}{7} = \square$

c $\frac{5}{9} + \frac{2}{9} = \square$

d $\frac{3}{5} + \frac{1}{5} = \square$

e $\frac{2}{3} + \frac{2}{9} = \square$

f $\frac{3}{8} + \frac{1}{2} = \square$

g $\frac{4}{5} + \frac{1}{10} = \square$

h $\frac{1}{8} + \square = \frac{5}{8}$

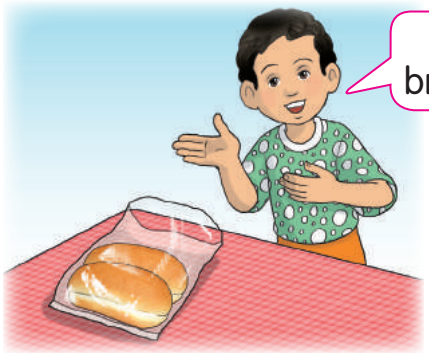
i $\frac{1}{9} + \square = \frac{7}{9}$

AB 60 TEACHER'S NOTES

- Surf https://solvemymaths.com/2015/02/06/adding-and-subtracting-fractions-worksheet/
- Guide pupils to add fractions of the same denominator involving an unknown.

SUBTRACTION OF FRACTIONS

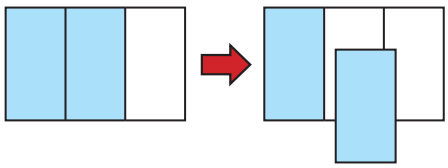
1



There are 2 out of 3 parts of a bread roll. I'm going to take 1 part.

What is the remaining part of the bread roll?

$\frac{2}{3} - \frac{1}{3} = \square$



$\frac{2}{3} - \frac{1}{3} = \frac{1}{3}$

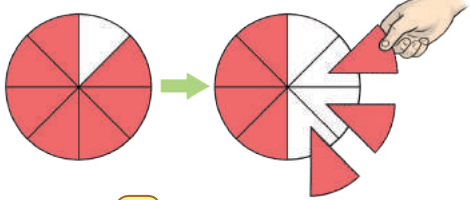
The denominator is the same. Just subtract the numerator.

The remaining part of the bread roll is $\frac{1}{3}$.

2 Subtract $\frac{3}{8}$ from $\frac{7}{8}$.

$\frac{7}{8} - \frac{3}{8} = \square$

$\frac{7}{8}$



$\frac{7}{8} - \frac{3}{8} = \frac{1}{2}$

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

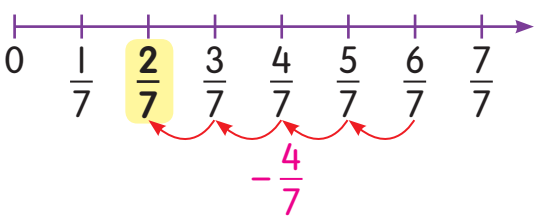
Simplify the answer.

$\frac{7}{8} - \frac{3}{8} = \frac{4}{8}$

$= \frac{1}{2}$

3 What is the difference between $\frac{4}{7}$ and $\frac{6}{7}$?

$\frac{6}{7} - \frac{4}{7} = \square$



$\frac{6}{7} - \frac{4}{7} = \frac{2}{7}$

4 $\frac{1}{2} - \frac{1}{4} = \square$

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

$= \frac{1}{4}$

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

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

On the fraction chart, $\frac{1}{2} = \frac{2}{4}$ and $\frac{1}{4} = \frac{2}{8}$.

5 $\frac{1}{4} - \frac{1}{8} = \square$

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

$= \frac{1}{8}$

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

6 $\frac{5}{6} - \frac{1}{3} = \square$

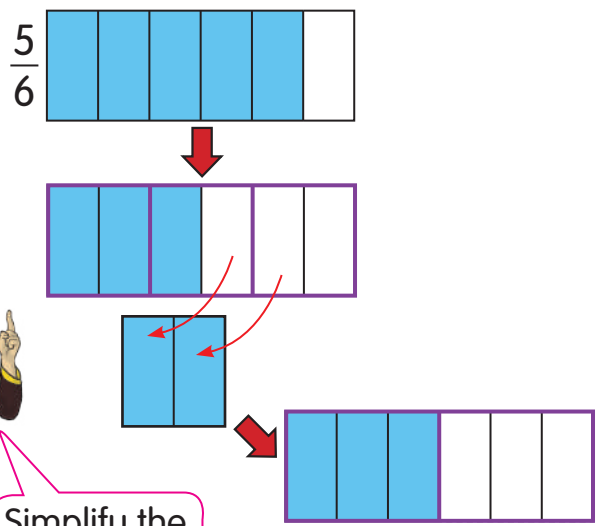
$\frac{5}{6} - \frac{1}{3} = \frac{5}{6} - \frac{1 \times 2}{3 \times 2}$

$= \frac{5}{6} - \frac{2}{6}$

$= \frac{3 \div 3}{6 \div 3}$

$= \frac{1}{2}$

$\frac{5}{6} - \frac{1}{3} = \frac{1}{2}$



Simplify the answer.

Can you subtract $\frac{1}{2}$ from $\frac{1}{6}$? Discuss.

TEACHER'S NOTES

- Emphasise that to subtract a fraction, the denominator must be of equal value.
- Use 2, 4, 6, 8 and 10 times tables to help pupils determine the equivalent fractions.

3.1.6 (ii)
3.1.6 (iii)
3.1.6 (v)

7 $\frac{7}{10} - \frac{1}{2} = \square$

$\frac{7}{10} - \frac{1}{2} = \frac{7}{10} - \frac{1 \times 5}{2 \times 5}$

$= \frac{7}{10} - \frac{5}{10}$

$= \frac{2 \div 2}{10 \div 2}$

$= \frac{1}{5}$

$\frac{7}{10} - \frac{1}{2} = \frac{1}{5}$

8 $\frac{2}{3} - \frac{5}{q} = \square$

$\frac{2}{3} - \frac{5}{q} = \frac{2 \times \square}{3 \times \square} - \frac{5}{q}$

$= \frac{\square}{\square} - \frac{5}{q}$

$= \frac{\square}{\square}$

$\frac{2}{3} - \frac{5}{q} = \frac{\square}{\square}$

9 $\frac{q}{10} - \square = \frac{3}{10}$

$\frac{q}{10} - \frac{6}{10} = \frac{3}{10}$

$\frac{q}{10} - \frac{6}{10} = \frac{3}{10}$

10 $\square - \frac{2}{5} = \frac{2}{5}$

$\frac{4}{5} - \frac{2}{5} = \frac{2}{5}$

$\frac{4}{5} - \frac{2}{5} = \frac{2}{5}$

LET'S TRY

Solve these.

a $\frac{7}{8} - \frac{5}{8} = \square$

b $\frac{5}{6} - \frac{1}{6} = \square$

c $\frac{2}{3} - \frac{2}{q} = \square$

d $\frac{1}{2} - \frac{3}{10} = \square$

e $\frac{4}{5} - \square = \frac{1}{5}$

f $\square - \frac{7}{10} = \frac{1}{10}$

AB 62 TEACHER'S NOTES

- Guide pupils to multiply correctly to find the equivalent fractions.
- Guide pupils to subtract fractions of the same denominator involving an unknown.

3.1.6

RECOGNISE FRACTIONS OF HUNDREDTHS AND DECIMALS

1

a **16 of 100** is **sixteen hundredths.**
Sixteen hundredths is written as $\frac{16}{100}$.

$\frac{16}{100}$ **in decimal is 0.16.**

It is read as **zero point one six**.

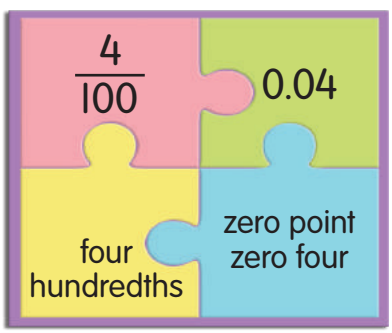
fraction of hundredths — $\frac{16}{100}$ — 0.16 — decimal

decimal point

b **4 of 100** tiles are **pink**.
4 of 100 is $\frac{4}{100}$.

$\frac{4}{100}$ in decimal is **0.04**.

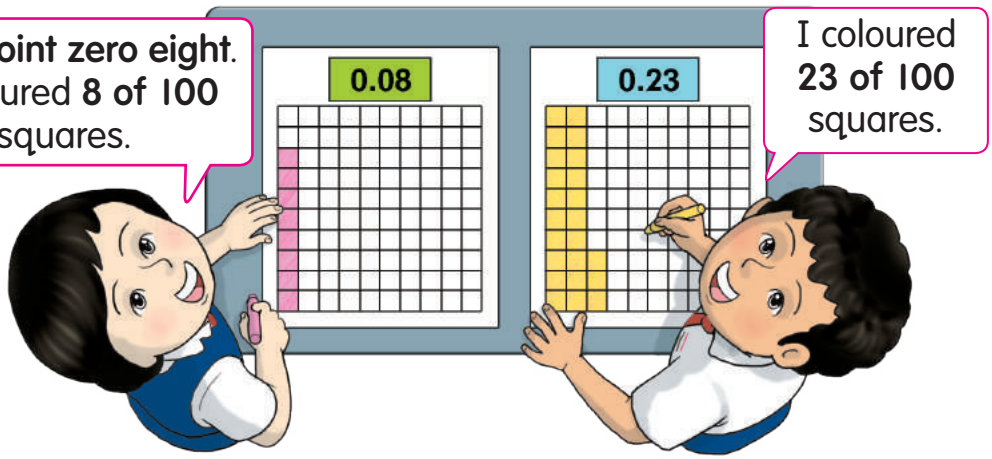
ones	•	tenths	hundredths
0	•	0	4



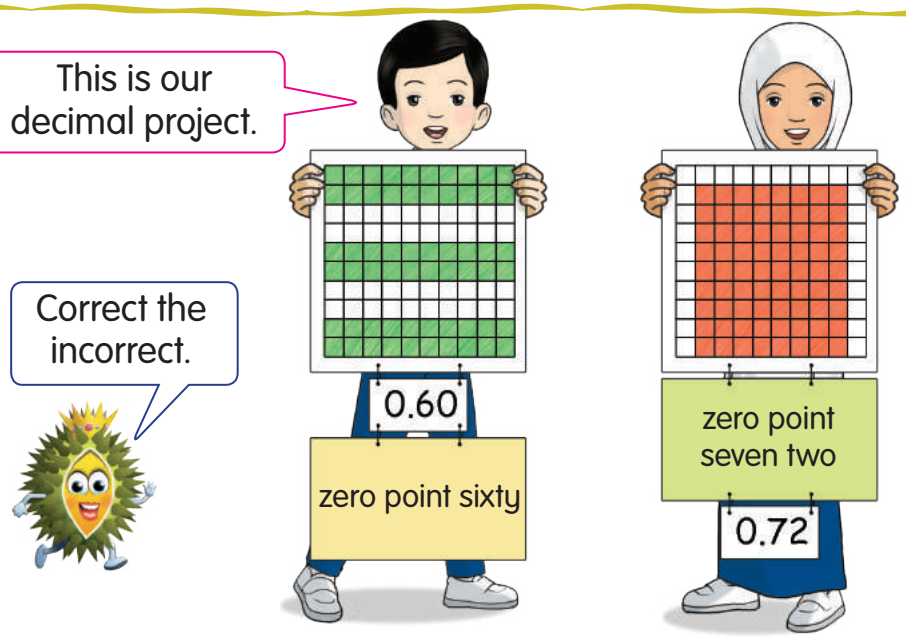
- Ask pupils to state the fractions and the decimals of the white and the green tiles in the diagram above.
- Guide pupils to read out decimal numbers correctly according to their place value using word cards and number cards.

3.1.4
3.2.1

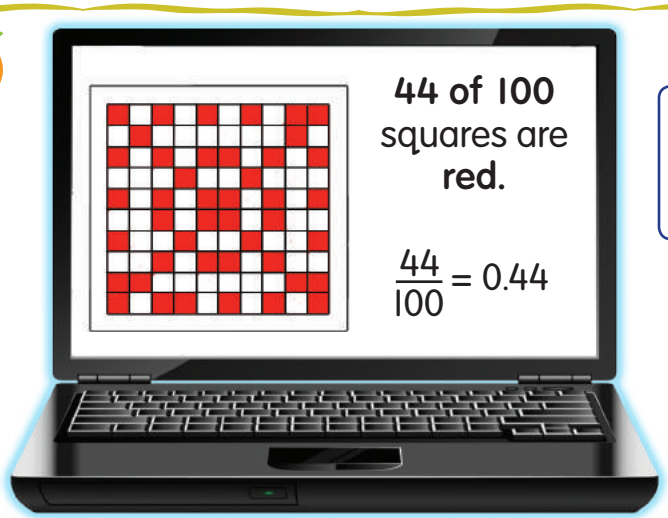
2



3



4



What are the decimal and hundredths fraction of the white squares?

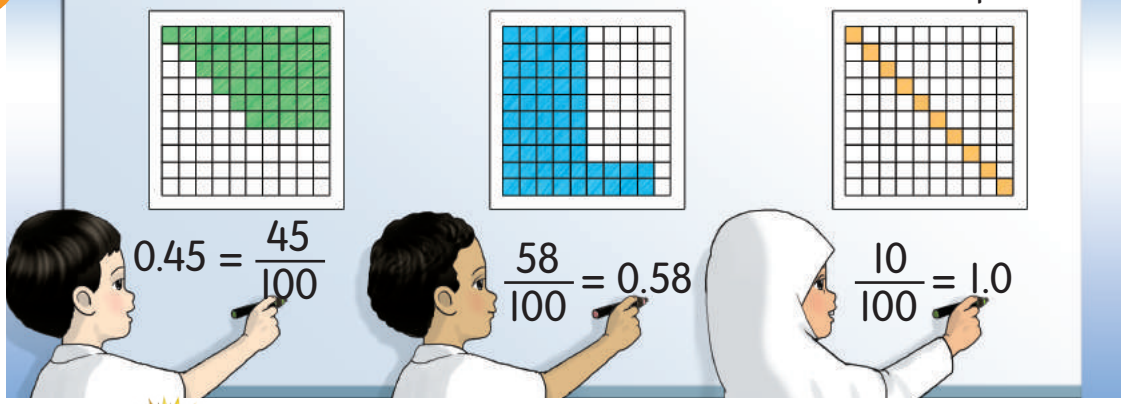
TEACHER'S NOTES

- Provide sufficient paper or hundred square grids for colouring activities to represent various decimal numbers.

3.2.2
3.4.1

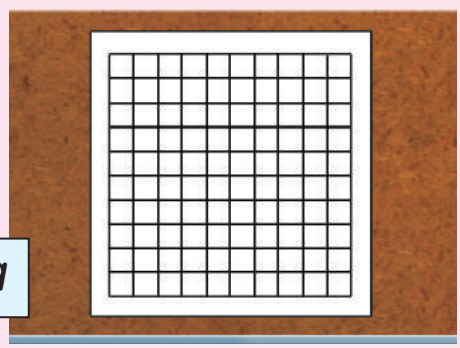
KPM

5 Write the fractions and decimals of the coloured parts.



What is incorrect? Correct it.

How many squares should be coloured?



LET'S TRY

1 Match the correct word cards to the numeral cards, and read them out.

zero point one eight	$\frac{9}{100}$	sixty-seven hundredths	0.05
nine hundredths	0.18	zero point zero five	$\frac{67}{100}$

2 Colour the decimal parts and fractions on hundred square grids.

a $\frac{3}{100} = 0.03$

b $\frac{24}{100} = 0.24$

c $0.65 = \frac{65}{100}$

AB 64 TEACHER'S NOTES

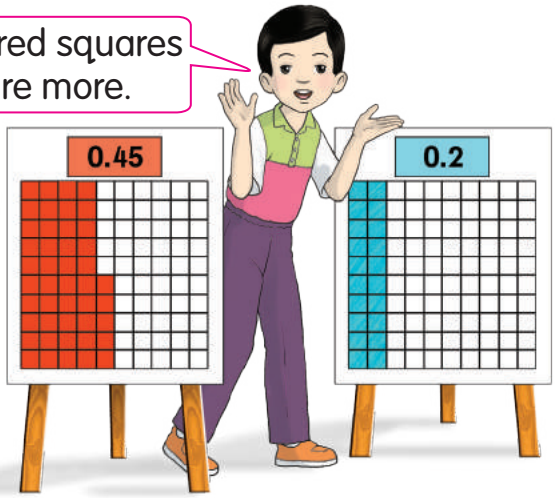
- Provide sufficient hundred square grids to pupils to represent decimals and fractions of hundredths.
- Surf http://www.visnos.com/demos/percentage-fraction-decimals-grid

3.1.4
3.2.1
3.2.2
3.4.1

COMPARE DECIMALS

1 Which mass is heavier, 0.45 kg or 0.2 kg?

The red squares are more.



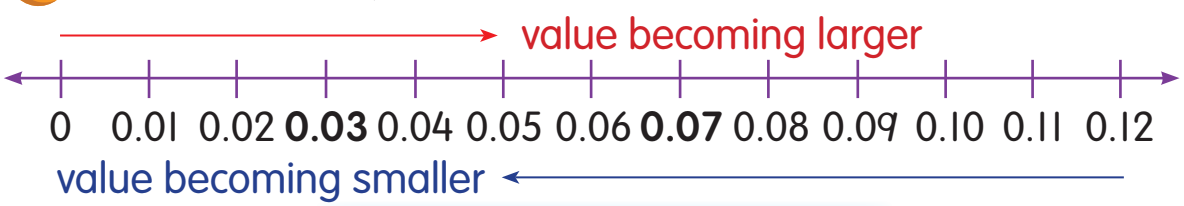
ones	tenths	hundredths
0	4	5
0	2	0

Compare the tenths digits. 4 is larger than 2.

0.45 is larger than **0.2**

0.45 kg is **more than 0.2** kg.

2 Which is smaller, 0.03 or 0.07?



0.03 comes before 0.07

0.03 is **smaller than 0.07**

LET'S TRY

Which decimal is larger? Explain.

a 0.1 0.11

b 0.52 0.25

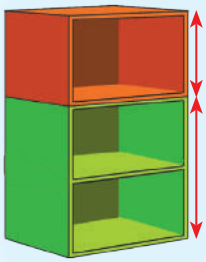
c 0.08 0.8

AB 65 TEACHER'S NOTES

- Surf www.superteacherworksheets.com/place-value/orfering-cards-set
- Use common objects in daily life for the activity of comparing decimals.

ADDITION OF DECIMALS

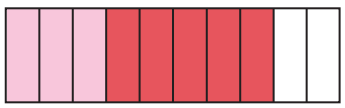
1



What is the total height of this shelf?

0.3 m + **0.5** m = ☐ m

Method 1



0.3 + 0.5 = 0.8

Colour 3 of the 10 parts. Colour another 5 parts.

Method 2

Arrange the digits. Make sure that the decimal point is aligned.

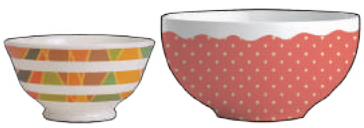
	ones	•	tenths
	0	•	3
+	0	•	5
	0	•	8

Add the tenths

0.3 m + **0.5** m = **0.8** m

The total height of the shelf is **0.8** m.

2

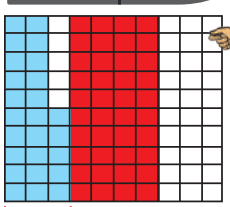


0.25 ℓ 0.4 ℓ

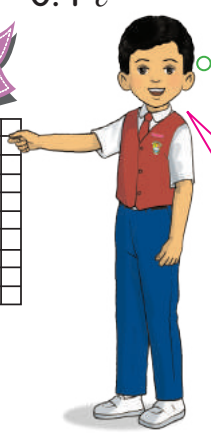
Add both volumes.

0.25 ℓ + **0.4** ℓ = ☐ ℓ

Method 1



0.25 0.40



0.4 = 0.40

Add the blue and the red squares.

Method 2

	0	• 2	5
+	0	• 4	0
	0	• 6	5

0.25 ℓ + **0.4** ℓ = **0.65** ℓ

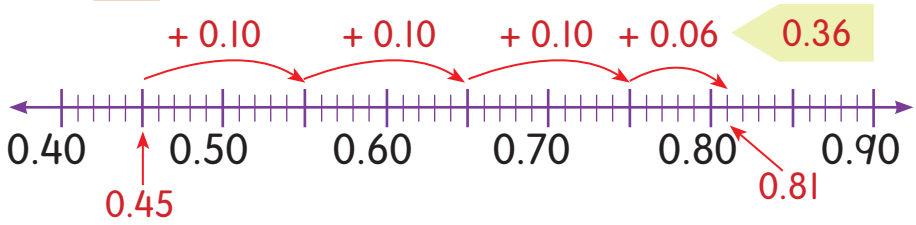
The total volume is **0.65** ℓ.

- Emphasise that when pupils write decimal numbers, the decimal points must be aligned before adding any numbers.

3 Add 0.45 and 0.36.

0.45 + 0.36 = ☐

Method 1



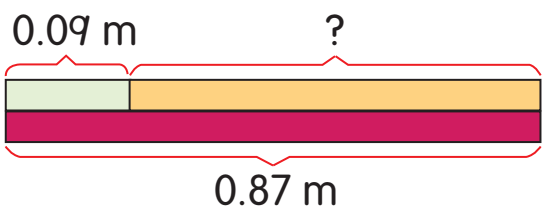
Method 2

		1	
	0	4	5
+	0	3	6
	0	8	1

0.45 + 0.36 = 0.81

---

4 **0.09 m + ☐ m = 0.87 m**



0.09 m + 0.78 m = 0.87 m

Subtract 0.09 from 0.87.

$$\begin{array}{r} {\scriptstyle 7\ 17} \\ 0.\not{8}\not{7} \\ -\ 0.09 \\ \hline 0.78 \end{array}$$

LET'S TRY

Solve these.

a

$$\begin{array}{r} 0.2\ \text{kg} \\ +\ 0.69\ \text{kg} \\ \hline \square\ \text{kg} \end{array}$$

b

$$\begin{array}{r} 0.74 \\ +\ 0.16 \\ \hline \square \end{array}$$

c

$$\begin{array}{r} 0.58 \\ +\ \square.\square\square \\ \hline 0.90 \end{array}$$

d 0.03 + 0.5 = ☐

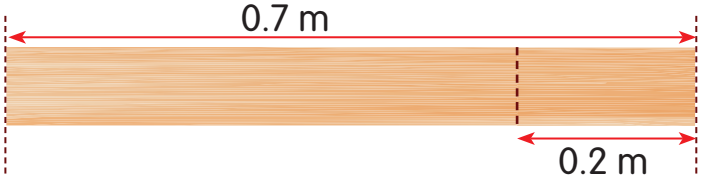
e 0.8 + ☐ = 0.99

AB 66 TEACHER'S NOTES

- Remind pupils that addition of decimal numbers is the same as addition of whole numbers.
- Provide questions on addition of decimal numbers involving an unknown for reinforcement.

SUBTRACTION OF DECIMALS

1



What is the length of the wooden plank after it is cut?

0.7 m – **0.2** m = ☐ m

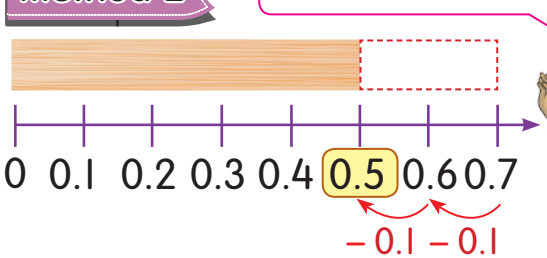
Method 1

	ones	•	tenths
	0	•	7
–	0	•	2
	0	•	5

Subtract the tenths
7 tenths – 2 tenths = 5 tenths

Method 2

Use a number line.



0.7 m – **0.2** m = **0.5** m

The remaining part of the wooden plank is **0.5** m.

2 Subtract **0.28** ℓ from **0.54** ℓ.

0.54 ℓ – **0.28** ℓ = ☐ ℓ

$$\begin{array}{r} {\scriptstyle 4\ 14} \\ 0.\cancel{5}\cancel{4} \\ -\ 0.28 \\ \hline 0.26 \\ \hline \end{array}$$

0.54 ℓ – **0.28** ℓ = **0.26** ℓ

TEACHER'S NOTES

- Emphasise that to subtract decimal numbers, the decimal points must be aligned.
- Remind pupils that subtraction of decimal numbers is the same as subtraction of whole numbers.

3 Calculate the difference between **0.13** kg and **0.6** kg.

0.6 kg – **0.13** kg = ☐ kg

$$\begin{array}{r} {\scriptstyle 5\ 10} \\ 0.\cancel{6}\cancel{0} \\ -\ 0.13 \\ \hline 0.47 \end{array}$$

We cannot subtract 3 hundredths from 0 hundredths. Therefore, regroup from the tenths to the hundredths.

0.6 kg – **0.13** kg = **0.47** kg

The difference between **0.13** kg and **0.6** kg is **0.47** kg.

4 **0.95** – ☐ = **0.52**

$$\begin{array}{r} 0.95 \\ -\ 0.52 \\ \hline \mathbf{0.43} \end{array}$$

0.95 – **0.43** = **0.52**

Check the answer.
0.43 + 0.52 = 0.95

LET'S TRY

Solve these.

a
$$\begin{array}{r} 0.39\text{ m} \\ -\ 0.28\text{ m} \\ \hline \square\ \text{m} \end{array}$$

b
$$\begin{array}{r} 0.7 \\ -\ 0.34 \\ \hline \square \end{array}$$

c
$$\begin{array}{r} 0.59 \\ -\ \square.\square\square \\ \hline 0.43 \end{array}$$

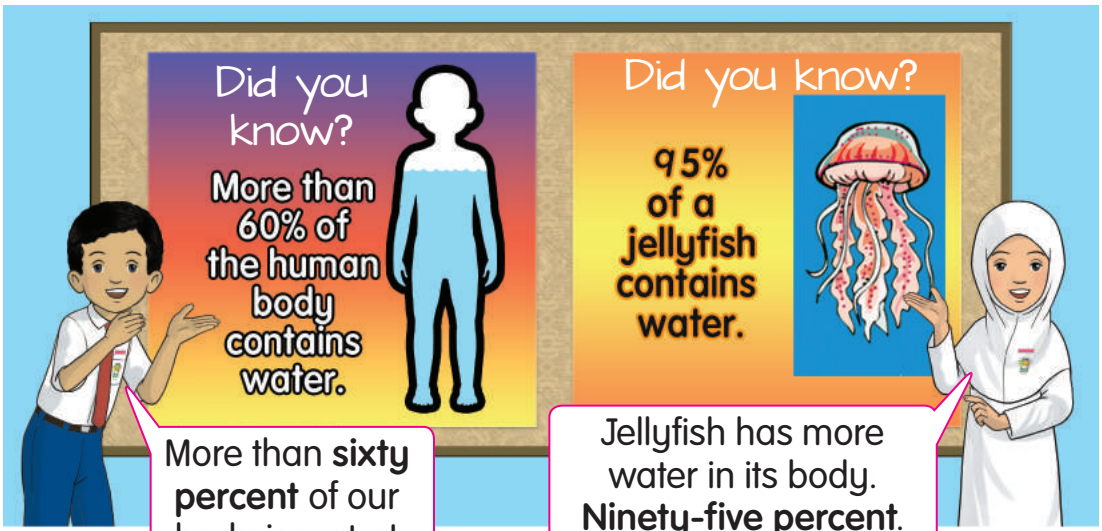
d 0.82 mℓ – 0.63 mℓ = ☐ mℓ

e 0.93 – ☐ = 0.4

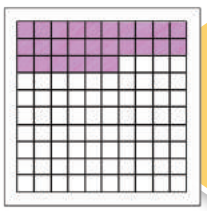
- Encourage pupils to check their answers using addition.
- Surf http://www.k5learning.com/free-math-worksheets/third-grade-3/fractions-and-decimals

RECOGNISE PERCENTAGES

1



2 **a**

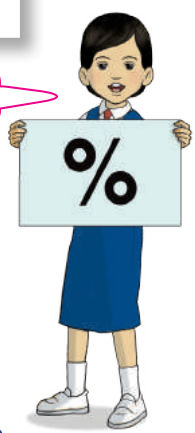


26 of 100 is $\frac{26}{100}$.

$\frac{26}{100}$ in **percentage** is written as **26%**.

We read it as **twenty-six percent**.

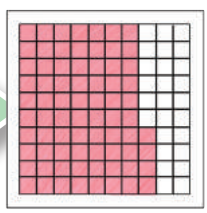
This is the **percentage** symbol.

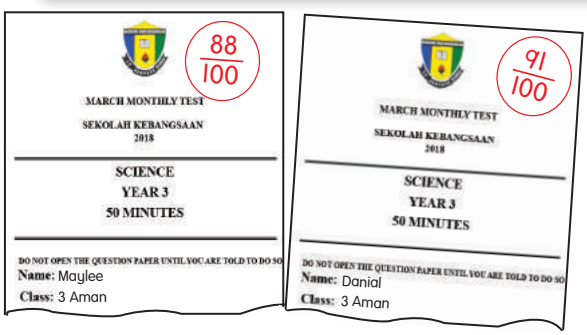


b **74 of 100** is $\frac{74}{100}$.

$\frac{74}{100}$ in **percentage** is written as _____.

We read it as _____.





Say your test marks in percentages.

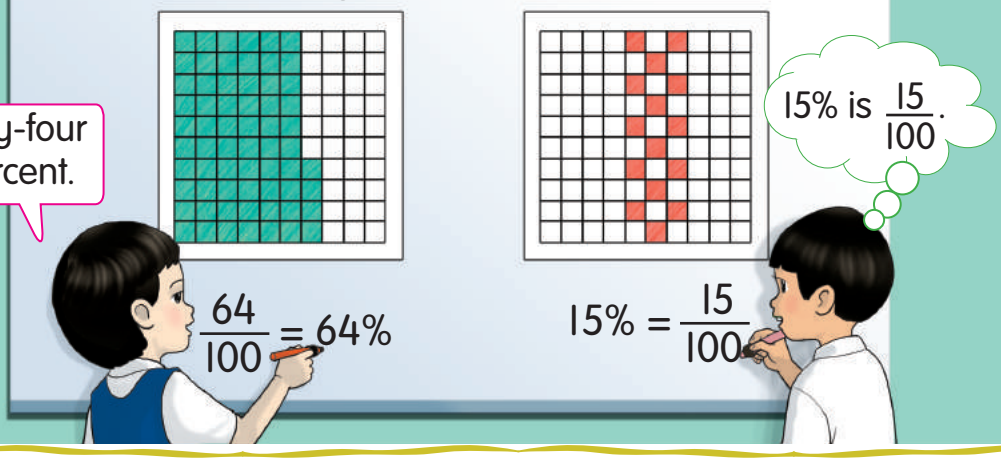
AB 68 TEACHER'S NOTES

- Ask pupils to provide examples of percentage in daily life.
- Surf https://www.teachervision.com/graph-chart-0/blank-100-grid to print hundred square grids for pupils to practise stating percentages based on the number of coloured squares.

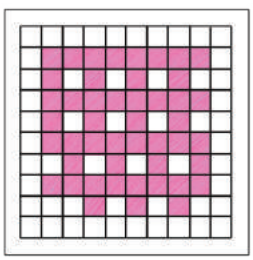
3.1.4
3.3.1
3.3.2
3.4.2

3

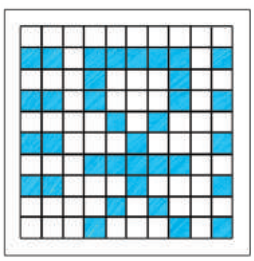
Write the percentages and fractions of hundredths.



4



forty-seven percent

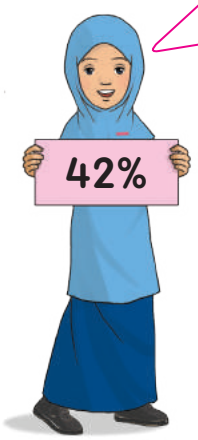


35%

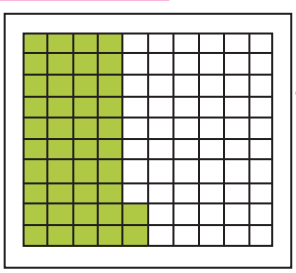
Write the percentages above.

5

42% pupils of 3 Alpha are girls. State the percentage in decimal.



I coloured 42 squares green. 42% is equal to $\frac{42}{100}$.



$\frac{42}{100}$ in decimal is 0.42.

42% = **0.42**

AB 69-70 TEACHER'S NOTES

- Provide sufficient hundred square grids to represent various fractions of hundredths and percentages.
- Surf https://www.extendoffice.com/documents/excel/2419-excel-grid-paper-template.html

3.3.3
3.3.4
3.4.2
3.4.3

KPM

6 8% = ☐

$8\% = \frac{8}{100}$

$\frac{8}{100}$ is **8 hundredths**.

ones	tenths	hundredths
0	0	8

8 hundredths in decimal is **0.08**.

8% = **0.08**

7 0.69 = ☐

0.65 0.66 0.67 0.68 **0.69**

$\frac{65}{100}$ $\frac{66}{100}$ $\frac{67}{100}$ $\frac{68}{100}$ $\frac{69}{100}$

0.69 = **69%**

Which decimals have equal percentage values? Explain.

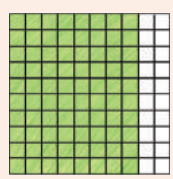
0.4 0.04 0.40

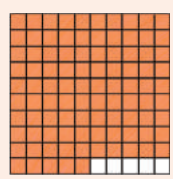
LET'S TRY

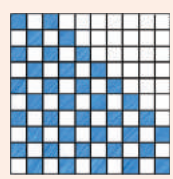
1 Say and write the percentages in words.

a 6% b 27% c 30% d 54%

2 Write the fractions of hundredths and percentages of the coloured parts.

a 

b 

c 

3 State in decimals. a 25% b 3% c 19%

4 State in percentages. a 0.42 b 0.07 c 0.86

5 Colour the hundred square grids.

a 9% b 71% c $\frac{40}{100}$ d $\frac{13}{100}$

AB 71 TEACHER'S NOTES

- Surf http://www.mathsisfun.com/converting-decimals-percents.html for more exercises on the relationship between percentages and decimals and vice versa.

3.3
3.4.2
3.4.3

FUN PROJECT

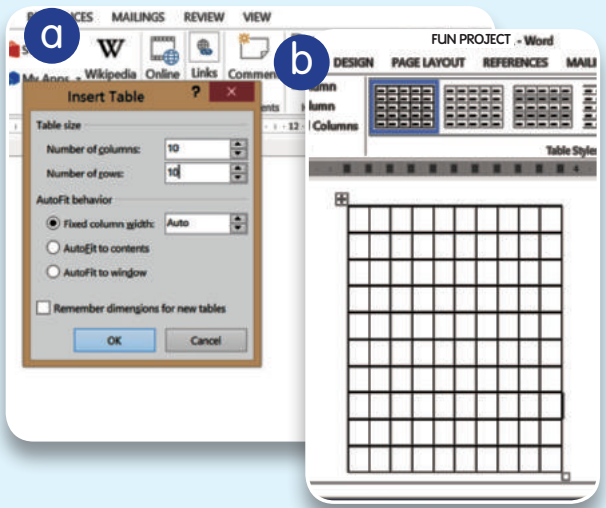
Tools/Materials MS Word software

Method

1

Launch MS Word. Click *Insert* and choose *Table*. Then, click *Insert Table*.

2

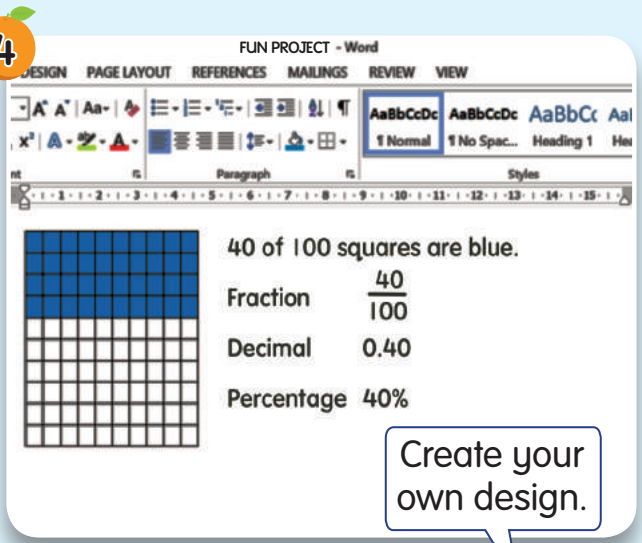


Type 10 for rows and columns. Select *AutoFit to Contents*. Click *OK*.

3

Select 40 square grids. Select a colour and click.

4



Type fraction, decimal, and percentage for the coloured square grid.

TEACHER'S NOTES

- Guide pupils to type fractions in their Fun Project.
- Carry out activities individually or in pairs. Print pupils' work and display them at the mathematics corner.

3.1.4
3.2.2
3.3.3

CREATE STORIES

1

$$\frac{1}{2}\text{ kg} + \frac{1}{8}\text{ kg} = \frac{5}{8}\text{ kg}$$

Devi's father bakes a fruit cake. He adds $\frac{1}{2}$ **kg** of flour to $\frac{1}{8}$ **kg** of mixed dried fruits. The total mass is $\frac{5}{8}$ **kg**.

2

$$\frac{q}{10}\text{ m} - \frac{3}{5}\text{ m} = \frac{3}{10}\text{ m}$$

Li Yin has $\frac{q}{10}$ **m** of ribbon. She uses $\frac{3}{5}$ **m** to decorate a gift box. The length of the ribbon left is ☐ **m**.

3

0.6 ℓ

0.25 ℓ

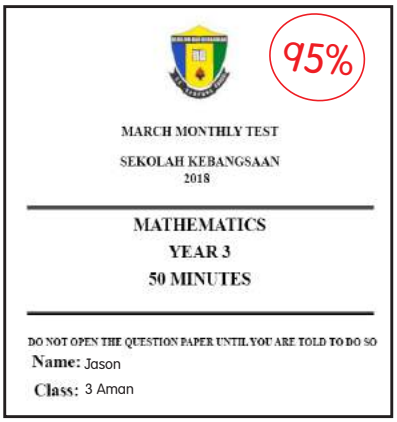
$$0.6\ \ell - 0.25\ \ell = 0.35\ \ell$$

A bottle contains **0.6** ℓ of mineral water. Another bottle has **0.25** ℓ of mineral water. The difference in volume of water for the two bottles is ☐ ℓ.

TEACHER'S NOTES

- Assist pupils to create stories using appropriate terms as keywords. Accept any stories that are related to logical mathematics.

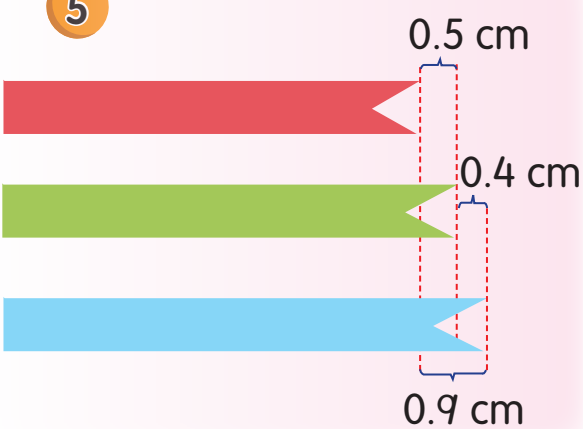
4



$95\% = \frac{95}{100}$

Jason gets **95%** in a Mathematics test.
His marks in fraction is ____.

5



0.5 cm + 0.4 cm = **0.9 cm**

The length of the green ribbon is **0.5 cm** more than the red ribbon. The length of the blue ribbon is **0.4 cm** more than the green ribbon. So, the length of the blue ribbon is ____ **cm** more than the red ribbon.

LET'S TRY

Create stories based on number sentences.

a $\frac{2}{3}$ m + $\frac{1}{9}$ m = $\frac{7}{9}$ m

b $\frac{1}{2}\ell - \frac{3}{10}\ell = \frac{1}{5}\ell$

c 0.7 mℓ + 0.05 mℓ = 0.75 mℓ

d 0.9 kg – 0.38 kg = 0.52 kg

e $63\% = \frac{63}{100}$

f $\frac{54}{100} = 54\%$

AB 72 TEACHER'S NOTES

- Provide number sentences involving addition of fractions, subtraction of fractions, decimals, and percentages for creating stories.

SOLVE THE PROBLEMS

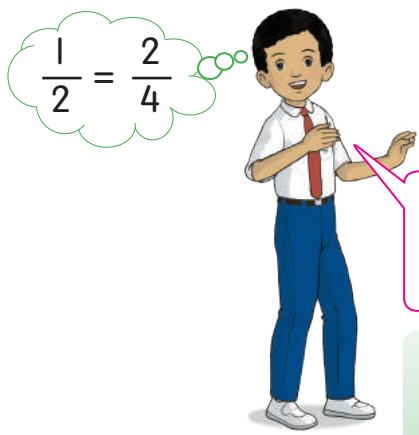
1 Danny's sister is making spaghetti sauce. She adds $\frac{1}{4}$ kg of mushrooms and $\frac{1}{2}$ kg of minced beef. What is the mass of the mixed ingredients?

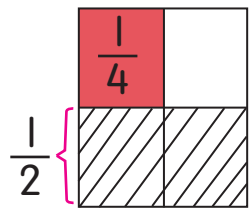
Given $\frac{1}{4}$ kg of mushrooms

$\frac{1}{2}$ kg of minced beef

Find mass of the mixed ingredients

Method $\frac{1}{4}$ kg + $\frac{1}{2}$ kg = ☐ kg





$\frac{1}{4} + \frac{1 \times 2}{2 \times 2} = \frac{1}{4} + \frac{2}{4}$

$= \frac{3}{4}$

$\frac{1}{4}$ kg + $\frac{1}{2}$ kg = $\frac{3}{4}$ kg

The mass of the mixed ingredients is $\frac{3}{4}$ kg.

TEACHER'S NOTES

- Prepare paper strips and a fraction chart for simulation activities. Carry out group activities to solve problems. Provide questions such as the above to reinforce pupils' understanding.

2 Eli wants to make a tablecloth. She only has $\frac{2}{5}$ m of cloth but she needs $\frac{q}{10}$ m. How much more length of cloth does she need to buy?

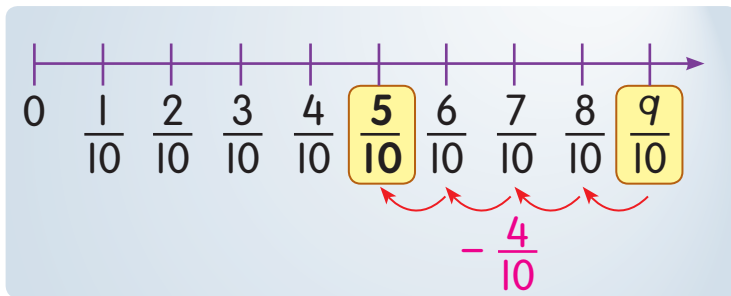
Given she has $\frac{2}{5}$ m of cloth

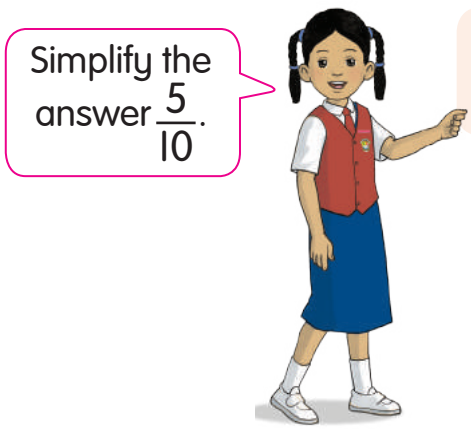
she needs $\frac{q}{10}$ m of cloth

Find length of cloth to buy

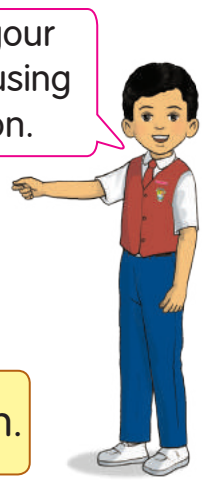
Method $\frac{q}{10}$ m − $\frac{2}{5}$ m = ☐

$\frac{2 \times 2}{5 \times 2} = \frac{4}{10}$





$\frac{5 \div 5}{10 \div 5} = \frac{1}{2}$



$\frac{q}{10}$ m − $\frac{2}{5}$ m = $\frac{1}{2}$ m

Eli needs to buy $\frac{1}{2}$ m of cloth.

TEACHER'S NOTES

- Use fraction chart and refresh pupils' memory on how to find equivalent fractions.
- Encourage pupils to check their answers using reverse operation, such as checking addition by subtraction and vice versa.

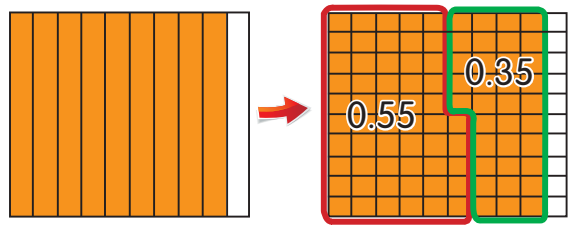
KPM

3 Haqim caught 0.9 kg of lobsters. Suresh caught 0.55 kg of lobsters. What is the difference between the two masses of lobsters?

Given Haqim's lobsters is 0.9 kg
Suresh's lobsters is 0.55 kg

Find the difference between the masses of lobsters

Method 0.9 kg – 0.55 kg = ☐



$$\begin{array}{r} {\scriptstyle 8\ 10} \\ 0.\cancel{9}\cancel{0} \\ -\ 0.5\ 5 \\ \hline 0.3\ 5 \end{array}$$

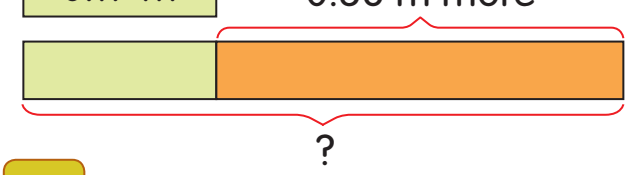
0.9 kg – 0.55 kg = **0.35** kg

The difference in mass is **0.35** kg.

4 The length of a bracelet is 0.17 m. The length of a necklace is 0.38 m more than the bracelet. How long is the necklace?

Method Length of bracelet: 0.17 m; 0.38 m more

Length of necklace:



0.17 m + 0.38 m = ☐

$$\begin{array}{r} {\scriptstyle 1} \\ 0.1\ 7 \\ +\ 0.3\ 8 \\ \hline 0.5\ 5 \end{array}$$

Check

$$\begin{array}{r} {\scriptstyle 4\ 15} \\ 0.\cancel{5}\cancel{5} \\ -\ 0.3\ 8 \\ \hline 0.1\ 7 \end{array}$$

0.17 m + 0.38 m = **0.55** m

The length of the necklace is **0.55** m.

- Use simulation strategies using concrete materials so that pupils can understand problems and solve them.
- Train pupils to write number sentences based on fractions and decimals story cards.

5 There are 100 pupils in the Chess Club. 45 pupils are girls. State the percentage of the boys.

Method

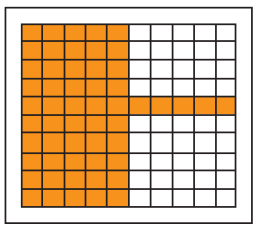
Write the information in a table.

Pupil	Number
Girl	45
Boy	
Total	**100**

First, calculate the number of boys.

$$\begin{array}{r} {}^{0}\not{1}\,{}^{\not{1}\not{0}\,9}\,{}^{10}\not{0} \\ -\quad 4\ 5 \\ \hline 5\ 5 \\ \hline \end{array}$$

55 boys of 100 pupils is $\frac{55}{100}$.



$\frac{55}{100}$ = 55%

The percentage of boys is **55%**.

LET'S TRY

Solve the problems.

a In a garden, $\frac{1}{4}$ of the area is covered with flowering plants. $\frac{3}{8}$ of the area is covered with non-flowering plants. What is the total area covered with plants?

b There are 2 packets of sweets with the mass of 0.17 kg and 0.08 kg. What is the difference in mass between the two packets of sweets?

c A cup of milk contains 30% of calcium. State 30% in decimal.

Let's drink milk for strong bones and teeth!

AB 74 TEACHER'S NOTES

- Prepare various problem solving questions of fractions, decimals, and percentages. Ask pupils to solve them in groups using methods such as bar model to reinforce pupils' understanding.

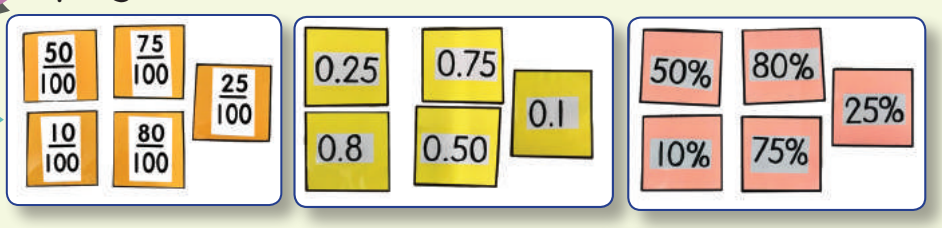
3.5.2

MATCH AND WIN

Tools/Materials 8 fraction cards, 8 percentage cards, 8 decimal cards

Participants 3 players and a referee

Examples of cards



Method

1. The referee distributes the cards equally among 3 players.
2. Each player aims to collect all 3 sets of matching cards and submit them to the referee.

3. The referee will then record the number of matching cards from each player.
4. The first player takes one of the remaining cards from the second player. If the player has 3 matching cards, submit them to the referee.

5. The second player then takes a card from the third player.
6. Continue playing until all matching cards are collected.

7. The player with the most number of matching cards wins.

AB 75-76 TEACHER'S NOTES

- Ask pupils to determine their turns. The referee shuffles a deck of 24 cards consisting of fractions, decimals, and percentages.
- Instil values such as cooperation, honesty, and tolerance while playing.

3.4.1
3.4.2
3.4.3

Dengan ini, **SAYA BERJANJI** akan menjaga buku ini dengan baiknya dan bertanggungjawab atas kehilangannya, serta mengembalikannya kepada pihak sekolah pada tarikh yang ditetapkan.

Skim Pinjaman Buku Teks

Sekolah _____

Tahun	Darjah	Nama Penerima	Tarikh Terima

Nombor Perolehan: _____

Tarikh Penerimaan: _____

BUKU INI TIDAK BOLEH DIJUAL