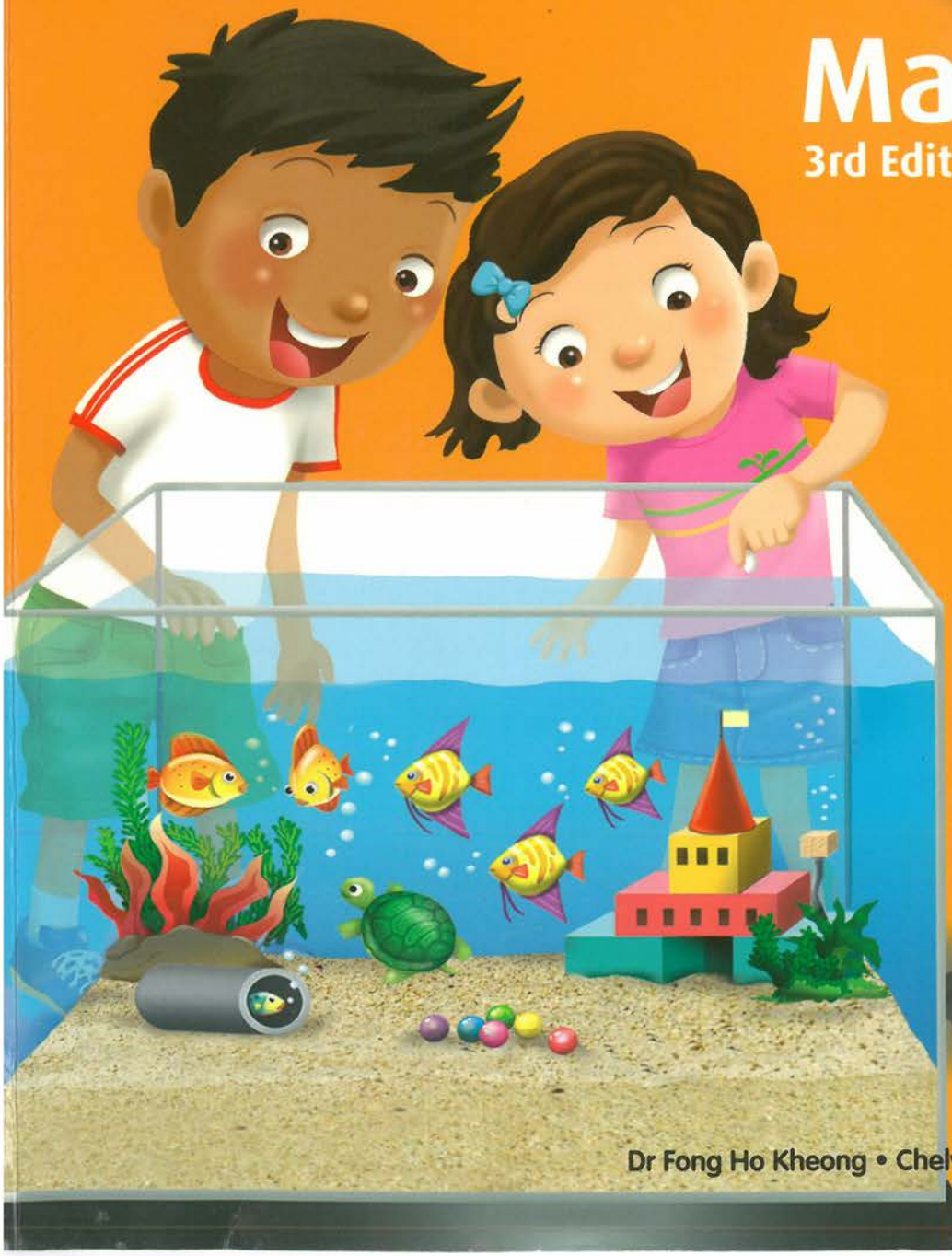
Marshall Cavendish Education

Pupil's Book

MY PALS ARE HERE!

Maths 2B

3rd Edition



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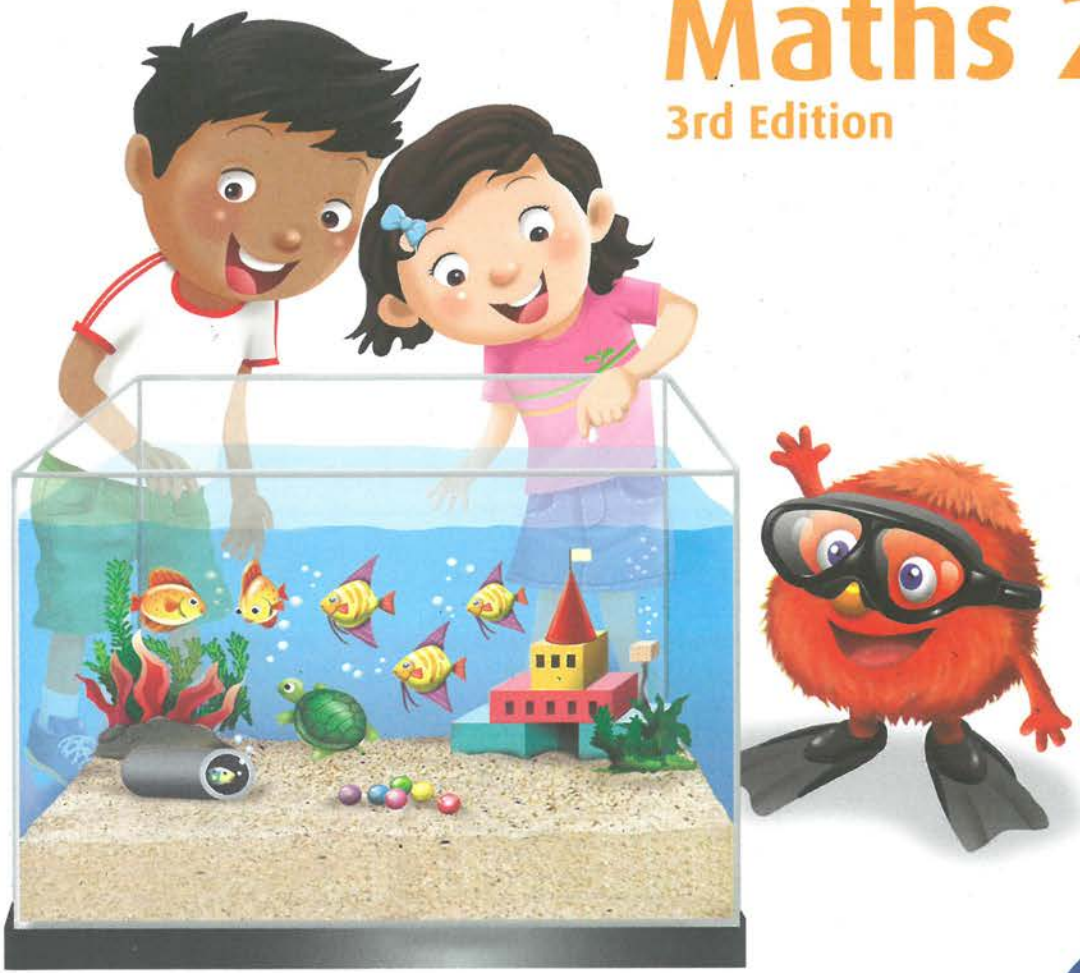

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Preface

My Pals Are Here! Maths (3rd Edition) is a comprehensive, task-based and learner-centred programme designed to provide pupils with a solid foundation in mathematics and opportunities to become efficient problem solvers.

My Pals Are Here! Maths (3rd Edition) continues to make learning mathematics fun and rewarding through the use of engaging illustrations, photographs, hands-on activities and games that help reinforce and consolidate learning for pupils of different abilities.

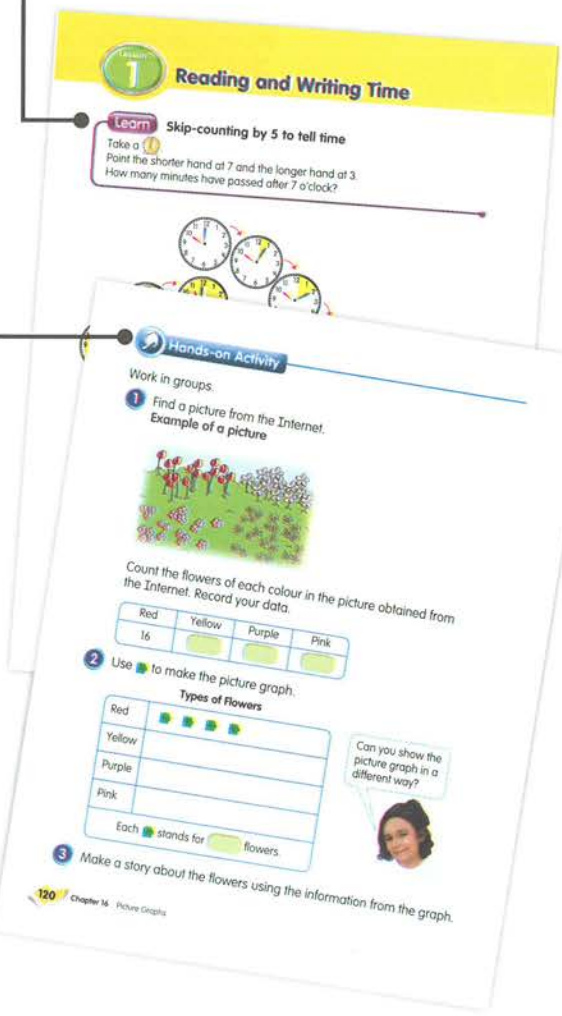
For the Teacher:

NEW!

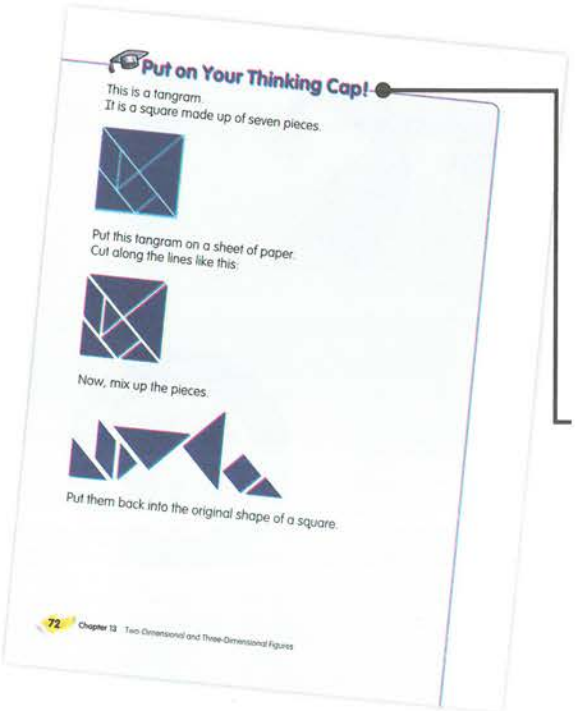
Use poems, stories and scenarios pupils can relate to in the chapter openers to capture their interest, provide an engaging introduction to the topics and jump-start learning.

NEW!

Introduce concepts through short tasks that involve the use of manipulatives and other concrete materials in **Learn**. At the end of each task, pose thought-provoking questions to help develop pupils' creative and critical thinking skills.



Carry out **Hands-on Activity** to promote active and collaborative learning. Where possible, pupils will complete station-based activities in rotating groups to best utilise class time.



Challenge pupils to solve non-routine questions by applying relevant heuristics and thinking skills in **Put on Your Thinking Cap!**

For the Parent/Guardian:

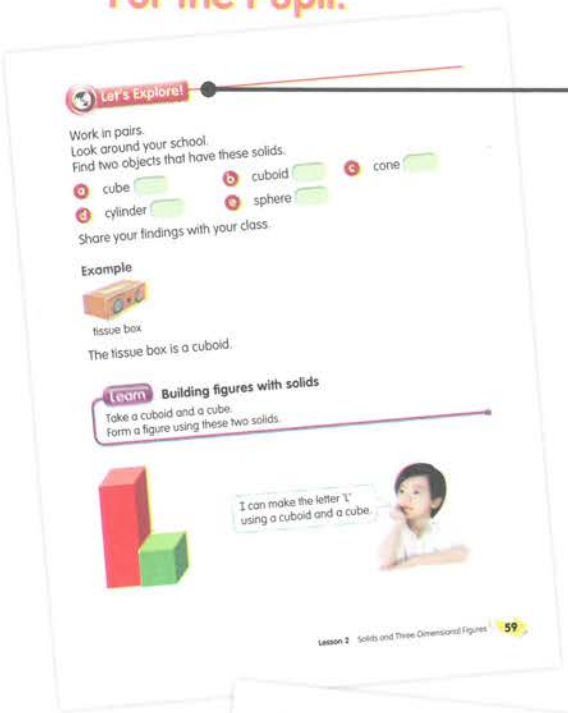
Make mathematics come alive by using the tips found in  to apply mathematical concepts to everyday scenarios in and around the home.

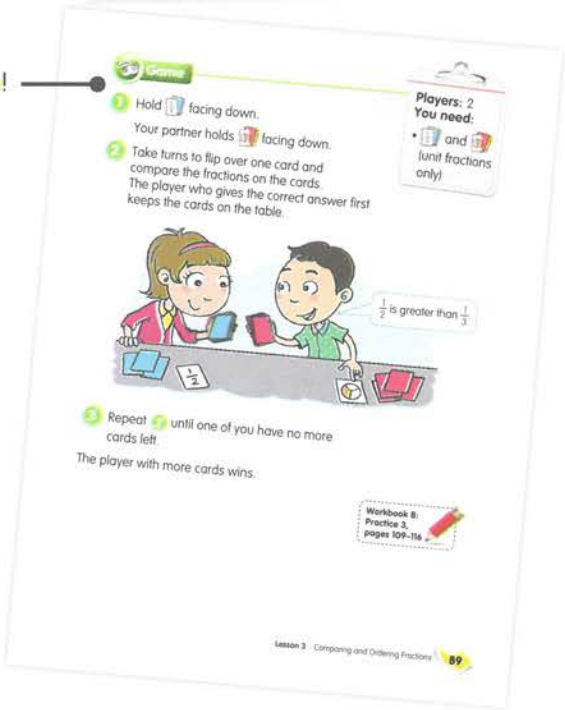
For the Pupil:

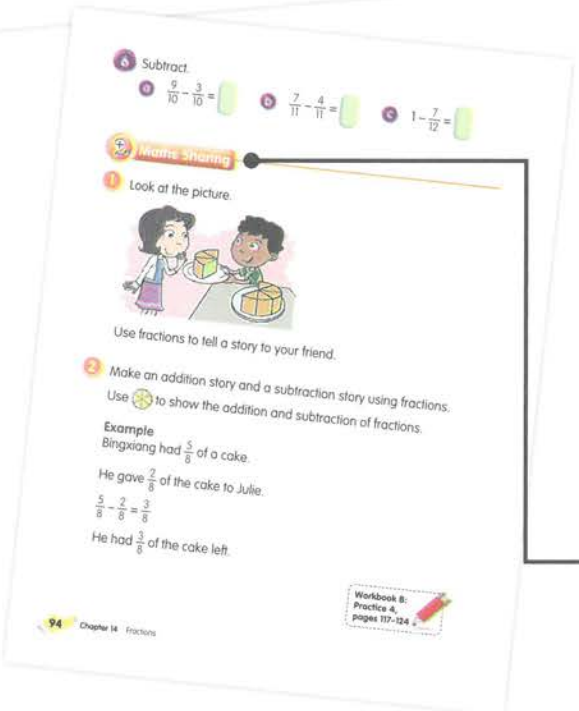
Perform investigative activities with **Let's Explore!**

Discover exciting and interesting ways to have fun learning mathematics with **Game**!

Share your thoughts with your teachers, create your own mathematics questions and become aware of your own mathematical thinking in **Maths Sharing**!





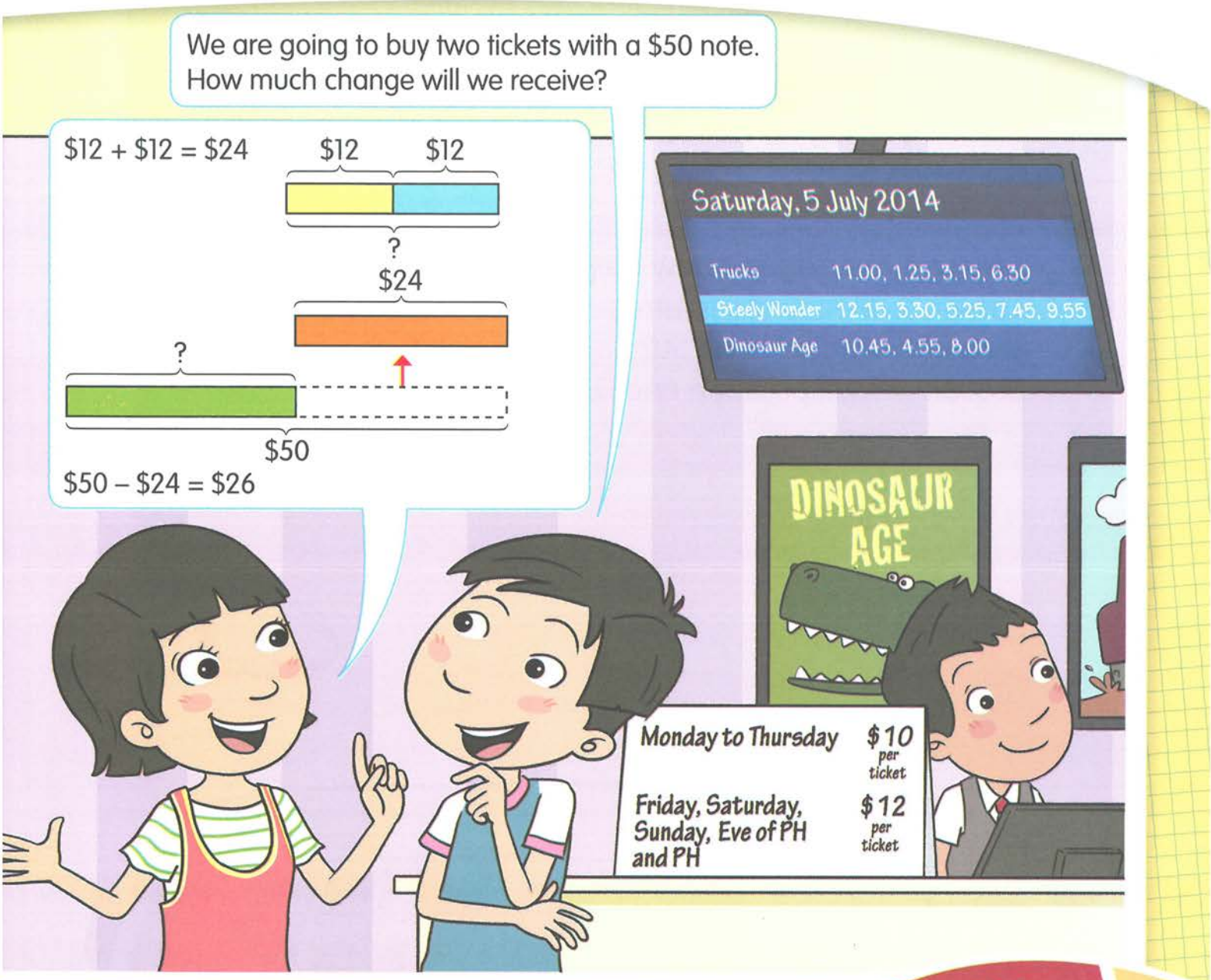


Enjoy learning mathematics with **My Pals Are Here! Maths (3rd Edition)**!

CONTENTS

CHAPTER 10

Two-Step Word Problems: Addition and Subtraction



Lesson 1 Two-Step Word Problems

Big Idea

Two-step addition and subtraction word problems can be solved using models.

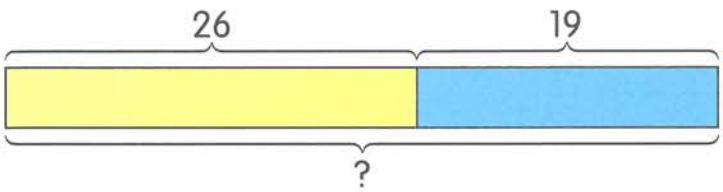
Lesson 1

Two-Step Word Problems

Learn Solving two-step word problems

Take some .
Ask your partner to take 13 more than you did.
How many cubes do you and your partner have altogether?

There are 26 boys and 19 girls in a class.
How many children are there in the class?



26 + 19 = 45

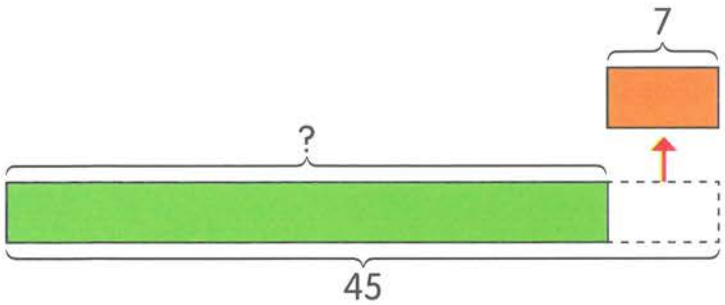
There are 45 children in the class.

Check!

45 – 19 = 26
45 – 26 = 19

The answer is correct.

Then, 7 children leave the class.
How many children are there in the class now?



45 – 7 = 38

There are 38 children in the class now.

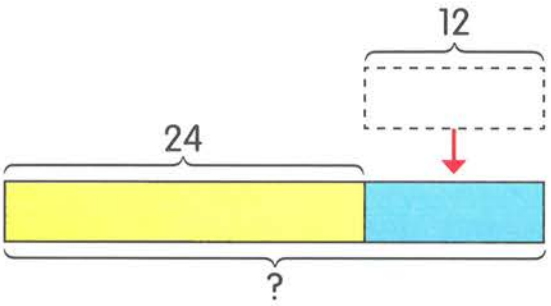
Check!

38 + 7 = 45

The answer is correct.

Mr Fong has 24 black markers.
After buying another 12 red markers, Mr Fong has 14 markers more than Miss Chua.

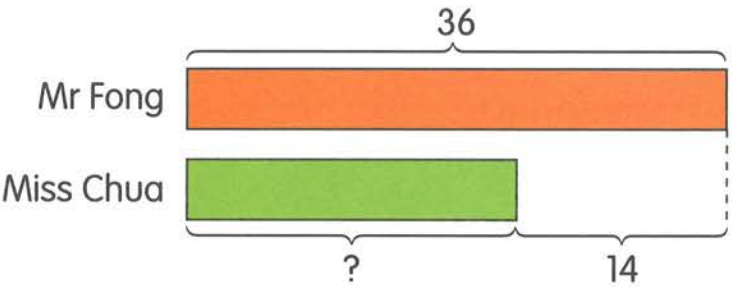
a How many markers does Mr Fong have altogether?



$24 + 12 = 36$

Mr Fong has 36 markers altogether.

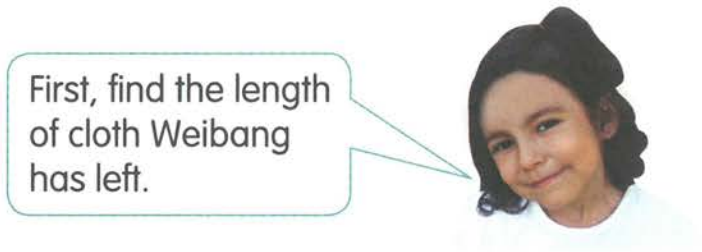
b How many markers does Miss Chua have?

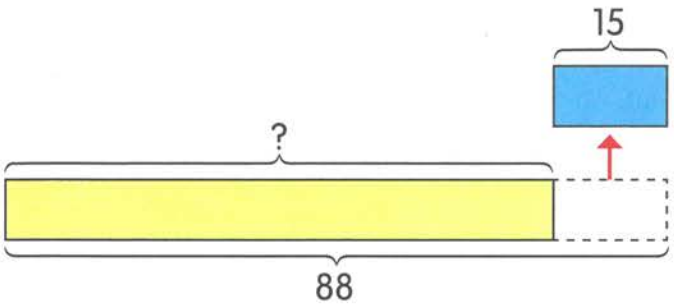


$36 - 14 = 22$

Miss Chua has 22 markers.

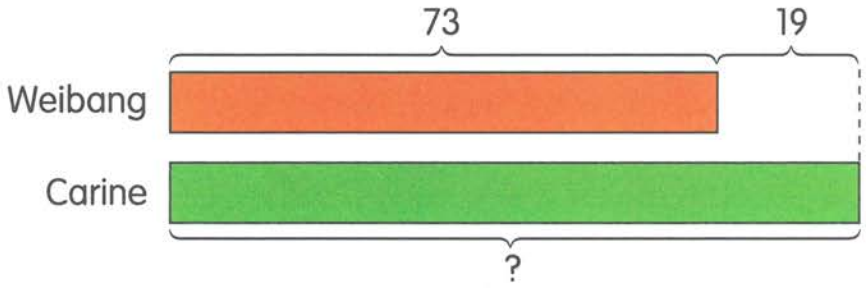
Weibang has 88 m of cloth.
After using 15 m to make a dress, Weibang has 19 m of cloth less than Carine.
How much cloth does Carine have?





$88 - 15 = 73$

Weibang has 73 m of cloth left.



$73 + 19 = 92$

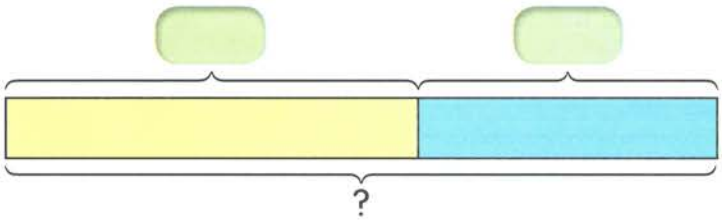
Carine has 92 m of cloth.

1 There are 22 boys and 16 girls in Vicky's class.
There are 5 more children in Joshua's class than in Vicky's class.

a How many children are there in Vicky's class?

b How many children are there in Joshua's class?

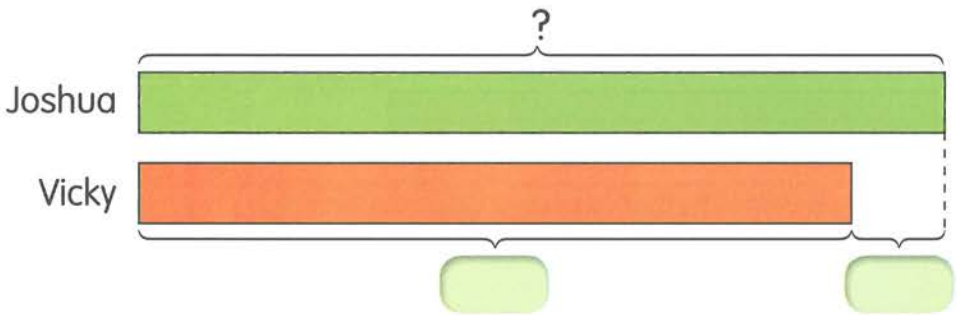
a



[ ] [ ] [ ] = [ ]

There are [ ] children in Vicky's class.

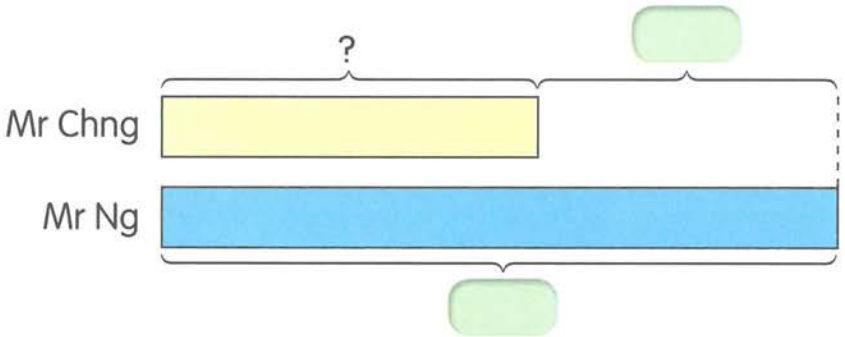
b



[ ] [ ] [ ] = [ ]

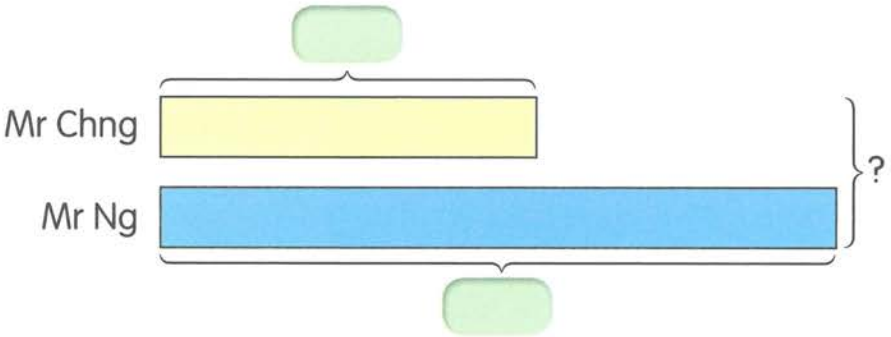
There are [ ] children in Joshua's class.

2 Mr Ng had a 620 m long fence.
His fence was 279 m longer than Mr Chng's fence.
What was the total length of fences altogether?



[ ] [ ] [ ] = [ ]

Mr Chng's fence was [ ] m long.



[ ] [ ] [ ] = [ ]

The total length of fences was [ ] m altogether.

Maths Sharing

1. Use these words and numbers provided to write two addition and two subtraction word problems.
2. Ask your classmates to solve the word problems.

Kelly	327	sells	stickers	Joe
753	stamps	Sally	in all	how many
left	Kevin	468	buys	buttons

Workbook B: Practice 1, pages 1–6

Chapter 10 Review

1. Peijuan and Shini have some ribbons.
Peijuan's ribbon is 165 cm long.
Her ribbon is 48 cm longer than Shini's ribbon.
What is the total length of ribbon they have altogether?
____ cm

2. There are 56 Mathematics books and 78 English books in a tall bookcase.
There are 39 fewer books in a short bookcase.
How many books are there in the short bookcase? ____

3. There are 235 boys and 172 girls in a tuition centre.
45 new pupils join the tuition centre.
How many pupils does the tuition centre have now? ____

4. Justin ran 147 m in the morning.
He ran another 33 m in the afternoon.
Kevin ran 66 m less than Justin on the same day.
How far did Kevin run on that day? ____ m

5. Ruth bought 245 red beads and 370 blue beads.
She bought 437 more beads than Lea.
How many beads did Lea buy? ____

6. Kenny had 315 marbles.
After winning another 223 marbles in a game, he had 245 marbles more than Sally.
How many marbles did Sally have? ____

7. Susie had 762 game tokens.
After losing 537 of them in a game, she had 169 fewer game tokens than Audrey.
How many game tokens did Audrey have? ____

Workbook B:
Maths Journal, page 7 and
Performance Task, page 8

Put on Your Thinking Cap!

William had 5 fewer coloured pencils than Zoe.
Zoe had 10 more coloured pencils than Serene.
How many more coloured pencils did William have than Serene?

Workbook B: Put on Your Thinking Cap! pages 9–10

CHAPTER 11

Mass

Lessons

Big Idea

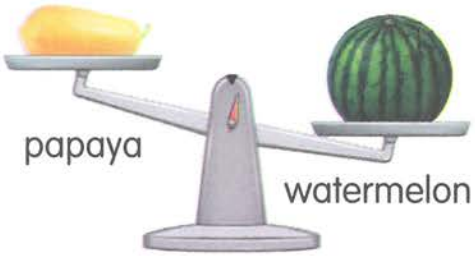
A scale can be used to measure and compare masses in kilograms and grams.

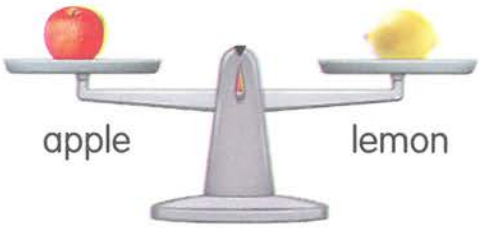
Lesson 1

Getting to Know Mass

Learn Comparing two masses

Take a packet of flour and a box of blueberries.
Which is lighter?



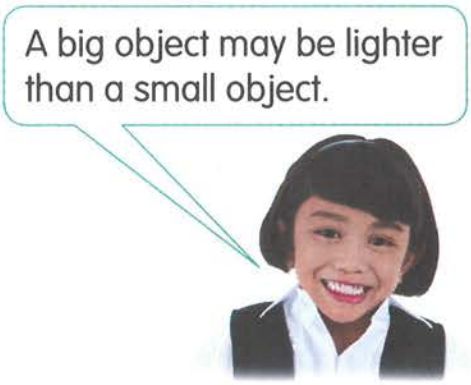


Mass is a measure of how heavy an object is.

1

metal ball

soft toy



a Which is heavier?

The _____ is heavier.

b Which is lighter?

The _____ is lighter.

c Is a big object always heavier than a small object? _____

Hands-on Activity

Guess which object is heavier in each group.
Use a balance to check your answers.

box of paper clips

stapler

Group 1

eraser

pencil

Group 2

sharpener

crayon

Group 3

Learn Comparing more than two masses

Take a packet of milk, a box of cereal and a packet of sweets.
Which is the heaviest?

The bag of sugar is lighter than the bag of flour.
The bag of rice is heavier than the bag of flour.
The bag of sugar is the **lightest**.
The bag of rice is the **heaviest**.

Arrange the items from lightest to heaviest.
sugar, flour, rice

2

(a) The durian is _____ than the papaya.

(b) The pear is _____ than the papaya.

(c) The _____ is the lightest.

(d) The _____ is the heaviest.

(e) Arrange the fruits from heaviest to lightest.

_____, _____, _____

heaviest

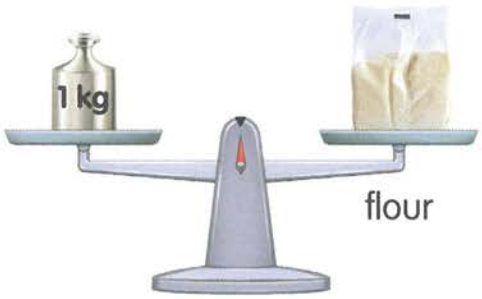
Workbook B: Practice 1, pages 11–12

Lesson 2

Measuring in Kilograms

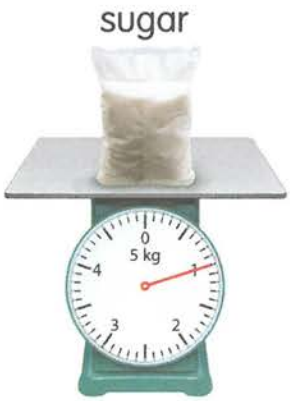
Learn Using a kilogram of mass to compare masses

Look at a packet of flour.
How heavy is the packet of flour?
Is it heavier or lighter than 1 kilogram?



The packet of flour is **as heavy as** the 1-kilogram mass.
The mass of the packet of flour is 1 **kilogram**.

The kilogram is a unit of mass.
We write **kg** for kilogram.
We read 1 kg as one kilogram.
We use kilograms to measure the mass of heavier objects.



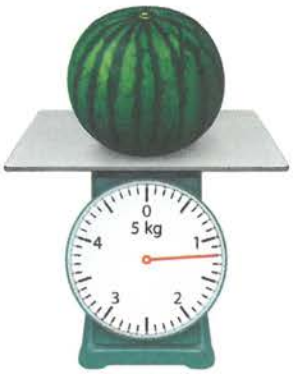
The bag of rice is as heavy as the bag of sugar. How heavy are they?

Can you name some objects that are about 1 kg?

butter

The mass of the block of butter is **less than** 1 kg.

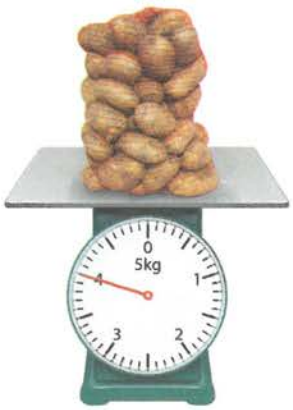
watermelon



The mass of the watermelon is **more than** 1 kg.

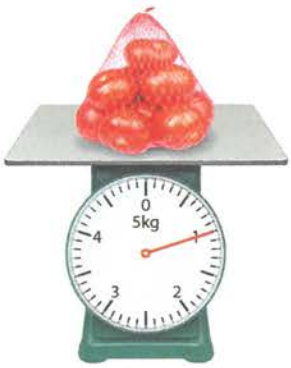
1 Look at the picture.

Bag A



Bag B

Bag C



a The mass of Bag ____ is 1 kg.

b The mass of Bag ____ is less than 1 kg.

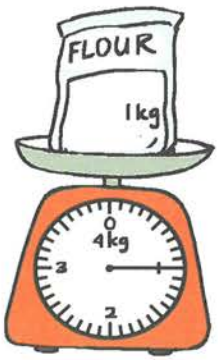
c The mass of Bag ____ is more than 1 kg.

Hands-on Activity

1. Hold a 1-kilogram mass in one hand and a packet of flour in the other hand.

2. Guess if the packet of flour is heavier or lighter than 1 kg.

3. Place the packet of flour on the kitchen scale.
Read the measurement.
Did you guess correctly?

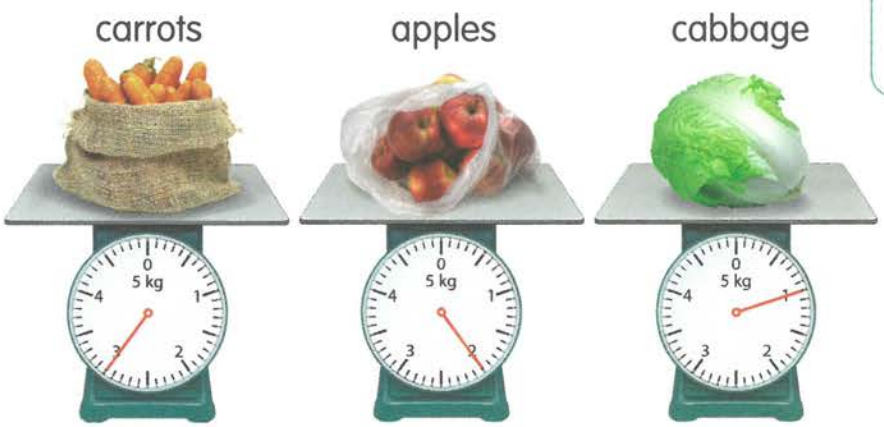


4. Choose another object. Repeat 1 to 3 with this object.

Learn Measuring masses of heavier objects

Place a sack of rice on a balance.
What would you do to find the mass of the sack of rice?

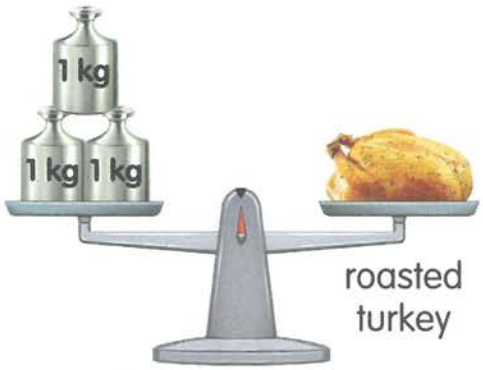
The bag weighs about 2 kg.



Arrange the items from heaviest to lightest.

carrots, apples, cabbage

2



The roasted turkey weighs about ____ kg.

3 papaya sugar rice

_____ kg _____ kg _____ kg

Arrange the items from heaviest to lightest.

_____, _____, _____

heaviest

Hands-on Activity

1 Guess the mass of your classmate.

2 Get your classmate to stand on a bathroom scale.
Read the measurement.
Did you guess correctly?

3 Repeat 1 and 2 with another classmate.

Workbook B: Practice 2, pages 13–18

Get your child to guess if the masses of objects around the house weigh 1 kg or more/less than 1 kg. Allow him/her to use the kitchen scale to find the actual masses.

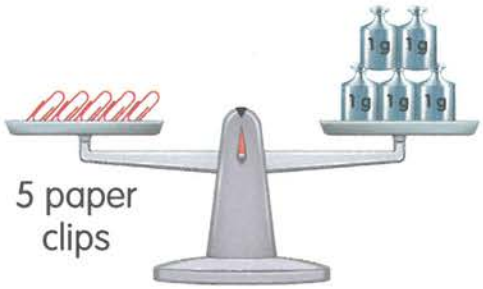
Lesson 3

Measuring in Grams

Learn Measuring masses of lighter objects

Place an eraser on a balance.
What would you do to measure the mass of the eraser?
What unit of measurement do you use?

These are some items that are lighter than 1 kilogram.



5 paper clips

1 pencil

The mass of the paper clip is about 1 **gram**.

The mass of the pencil is about ____ grams.

The gram is a unit of mass.
We write **g** for gram.
We read 1 g as one gram.
We use grams to measure the mass of lighter objects.

pencil case

300 g

muffin

40 g

light bulb

450 g

Arrange the items from lightest to heaviest.

muffin, pencil case, light bulb

1 parcel

The mass of the parcel is ____ g.

2 bottle

The mass of the bottle is ____ g.

3 mug

____ g

jam

____ g

cookies

____ g

Arrange the items from lightest to heaviest.

____, ____, ____

lightest

4 tissue box

cereal

cookies

Arrange the items from heaviest to lightest.

, ,

heaviest

Maths Sharing

Work in pairs.

Which unit (g, kg) would you use for each item? Why?

a

apple

b

school bag

What is the mass of your school bag?

Workbook B: Practice 3, pages 19–28

Try out a recipe with your child. Get him/her to measure the mass of the required ingredients using the kitchen scale.

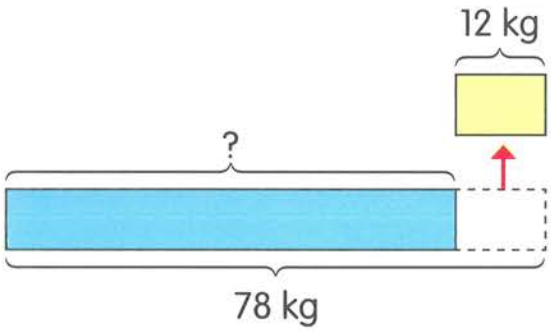
Lesson 4

Addition and Subtraction of Masses

Learn Solving word problems involving addition and subtraction of masses

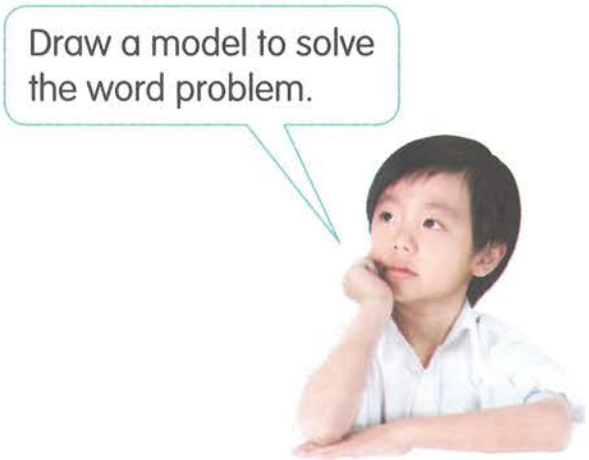
Is a bag of rice or a bag of flour heavier?
How much heavier?
Do you add or subtract to find each answer?

A grocer has 78 kg of potatoes.
He sells 12 kg of potatoes.
How many kilograms of potatoes does he have left?



$78 - 12 = 66$

He has 66 kg of potatoes left.

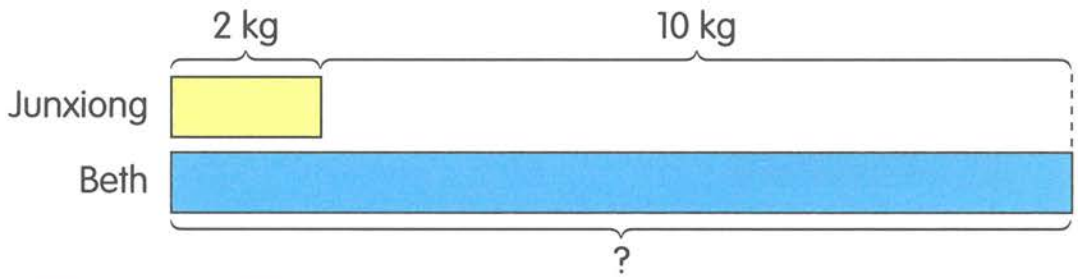


1

(a) How many kilograms of the weight can Beth lift?

(b) How much less weight can Junxiong lift than Nathan?

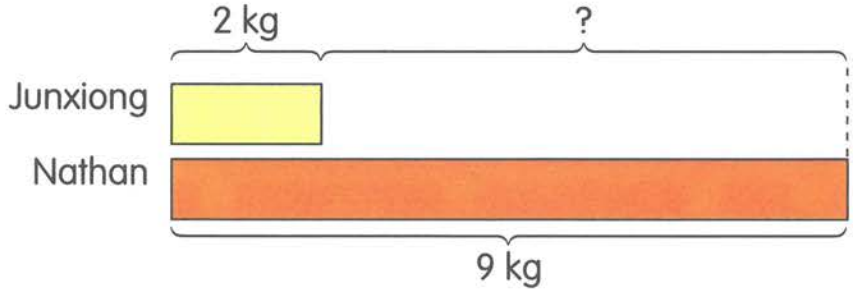
(a)



[ ] [ ] [ ] = [ ]

Beth can lift [ ] kg of the weight.

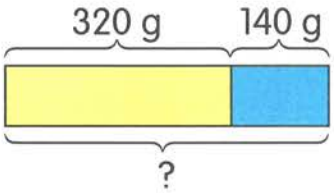
(b)



[ ] [ ] [ ] = [ ]

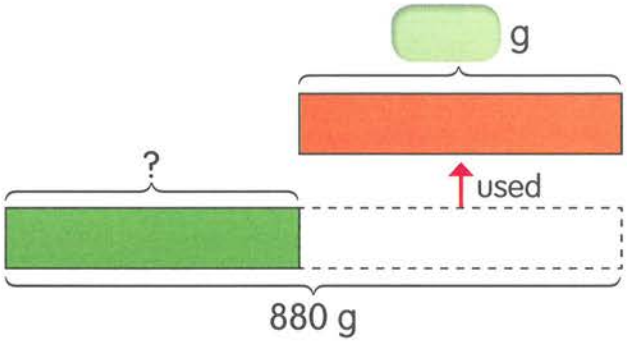
Junxiong can lift [ ] kg less than Nathan.

2 Mum has 880 g of flour.
She uses 320 g on Monday and 140 g on Tuesday.
How much flour does she have left at the end of Tuesday?



[ ] [ ] [ ] = [ ]

She uses [ ] g of flour on Monday and Tuesday.



[ ] [ ] [ ] = [ ]

She has [ ] g of flour left at the end of Tuesday.

Workbook B: Practice 4, pages 29–32

Lesson 5

Multiplication and Division of Masses

Learn Solving word problems involving multiplication and division of masses

Take three 

.
What is their total mass altogether?

Raj buys 5 boxes of oranges.
The mass of each box of oranges is 4 kg.
What is the mass of 5 boxes of oranges altogether?

$5 \times 4 = 20$

The mass of 5 boxes of oranges is 20 kg altogether.

3 tins of milk powder weigh 24 kg.
Each tin has the same mass.
What is the mass of each tin of milk powder?

$24 \div 3 = 8$

Each tin of milk powder weighs 8 kg.

1 A sweet weighs 9 g.
What is the mass of 3 such sweets?

[ ] [ ] [ ] = [ ]

The mass of 3 such sweets is [ ] g.

2 Peiling buys 35 kg of tomatoes.
Each bag of tomatoes weighs 5 kg.
How many bags of tomatoes does Peiling buy?

[ ] × 5 = 35

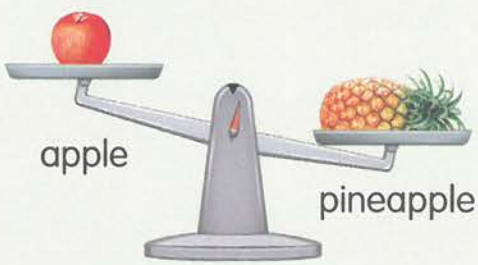
[ ] [ ] [ ] = [ ]

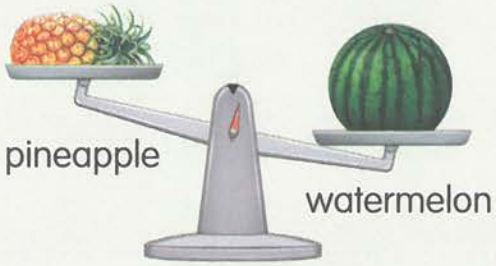
Peiling buys [ ] bags of tomatoes.

Workbook B:
Practice 5,
pages 33–36

Chapter 11 Review

1 **a** Look at the pictures.
Choose **lighter** or **heavier**.





The apple is _____ than the pineapple.

The watermelon is _____ than the pineapple.

b Arrange the fruits from heaviest to lightest.

_____, _____, _____

heaviest

2

potatoes

beancurd

burgers

a The burgers weigh _____ g.

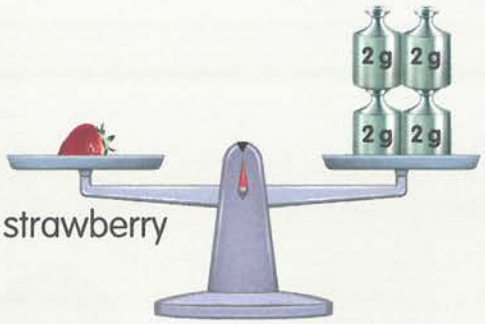
b Which is the heaviest? _____

c Arrange the items from heaviest to lightest.

_____, _____, _____

heaviest

3



The strawberry weighs about ____ g.

4 Choose **kg** or **g**.

a

jam

150 ____

b

toaster

3 ____

c

onions

10 ____

d

canned food

300 ____

5 The total mass of a mini cupcake and a slice of cheesecake is 80 g.
The slice of cheesecake weighs 61 g.
What is the mass of the mini cupcake? ____ g

6 A chicken weighs 2 kg.
A turkey is 5 kg heavier than the chicken.
What is the total mass of the chicken and the turkey? ____ kg

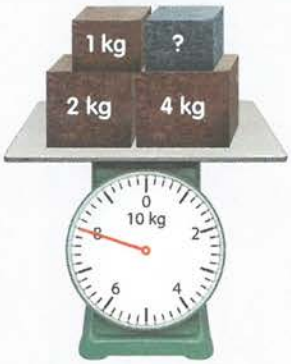
7 A teacher puts some green beans equally into 5 bags.
The mass of each bag of green bean is 10 g.
What is the total mass of the 5 bags of green beans? ____ g

8 A grocer buys 18 kg of sugar.
He repacks the sugar equally into some bags.
Each bag of sugar weighs 2 kg.
How many bags of sugar are there?

Workbook B:
Maths Journal, page 37 and
Performance Task, page 38

Put on Your Thinking Cap!

1 The picture shows some blocks on a scale.



What is the mass of the blue block?

2

a Which is heavier, Box A or Box B?

b How much heavier?

Workbook B: Put on Your Thinking Cap! pages 39–40

CHAPTER 12

Money

Big Idea

Money can be shown and counted using notes and coins.

Lessons

Lesson 1

Counting Dollars and Cents

Learn Finding the value of a group of notes and coins

Take a  and a  .

How much money is this?
How can we write this amount?

Alif has some money.

Count on from the note of the greatest value.
10, … 15 dollars, 20, … 30, … 35 cents.
15 dollars and 35 cents!

We can also write this amount as $15.35.
The dot in $15.35 separates the dollars from the cents.

Muthu paid this amount of money for a bookshelf.

Count on from the note of the greatest value.
100, ... 150, ... 160, ... 170, ... 180, ... 190, ... 195, ... 197, ...
199 dollars!

We write 199 dollars as \$199 or \$199.00.

Meilin has some money.

Count on from the coin of the greatest value.
50, ... 70, ... 80, ... 90, ... **95 cents**!

We write 95 cents as 95¢ or \$0.95.

1 Count the money and write the amounts in two ways.

a

58 dollars and 85 cents

\$ 58.85

b 

67 dollars 0 cents

$ 67.00

c 

0 dollars and 80 cents

$ 0.80

Hands-on Activity

Work in pairs.

1. Choose an item in an advertisement. Cut it out and paste it on a card.
2. Read the cost of the item.
   Then, write it in two ways on the other side of the card.
3. Use  to show the cost of the item.

4. Repeat 1 to 3 with four other items in the advertisement.

Workbook B: Practice 1, pages 41–48

Lesson 2

Changing Cents and Dollars

Learn Changing cents and dollars

Take two 50¢ and a 20¢.
How much is the amount in cents?
How do we write the amount in dollars?

Mrs Lim gives her child 100¢ on Monday.

100¢ = $1.00
So, 200¢ = $2.00.

She gives her child 270¢ on Tuesday.

$$\begin{aligned} 270¢ &= 200¢ + 70¢ \\ &= \$2 + 70¢ \\ &= \$2.70 \end{aligned}$$

Bala saved $1 on Friday.

He saved $9.65 on Saturday.

$1.00 = 100¢
So, $2.00 = 200¢.

$$\begin{aligned} \$9.65 &= \$9 + 65¢ \\ &= 900¢ + 65¢ \\ &= 965¢ \end{aligned}$$

1 Write the amount in dollars.

a 610¢ = $ ____ b 8¢ = $ ____

2 Write the amount in cents.

a $4 = ____ ¢ b $9.05 = ____ ¢

Hands-on Activity

Work in groups of four.

1 Show $1 in different ways using  .

2 Write $1 in two different ways on your whiteboard.

3 In how many ways can you show $1?

4 Repeat 1 to 3 for $2, $5 and $10.

Workbook B: Practice 2, pages 49–50

Lesson 3

Comparing Amounts of Money

Learn Using dollars and cents tables to compare amounts of money

Bring out some  .
How much do you have?
Compare this amount with your classmate's.
Who has more?

Compare. Which item costs more?

A dress costs $29.50.

Dollars	Cents
29	50

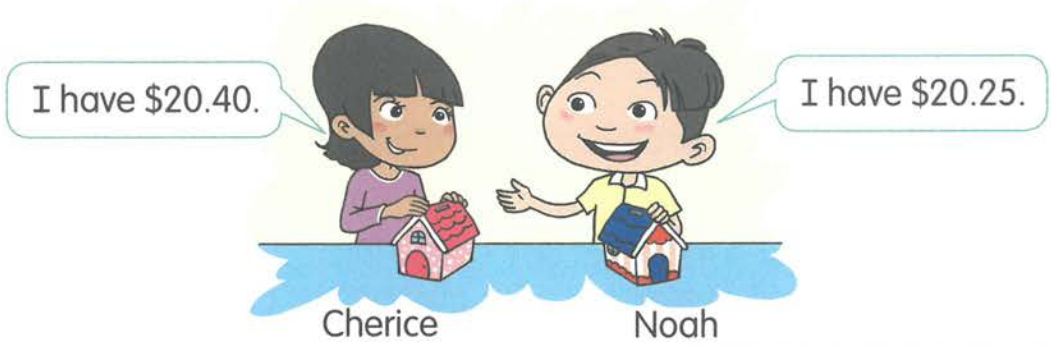
A shirt costs $32.20.

Dollars	Cents
32	20

$32.20 is more than $29.50.
$29.50 is less than $32.20.

So, the shirt costs more than the dress.

1 Compare. Who has less?



Dollars	Cents
20	40

Dollars	Cents
20	25

$\square$ is more than $\square$.

$\square$ is less than $\square$.

First, compare the dollars.
They are the same.
Then, compare the cents.
40 is greater than 25.

So, $\square$ has less money than $\square$.

2 Compare.

$\square$ is the greatest amount. So, the dress costs the most.

$\square$ is the smallest amount. So, the T-shirt costs the least.

Arrange the amounts from smallest to greatest.

$\square$, $\square$, $\square$

smallest

Workbook B: Practice 3, pages 51–54

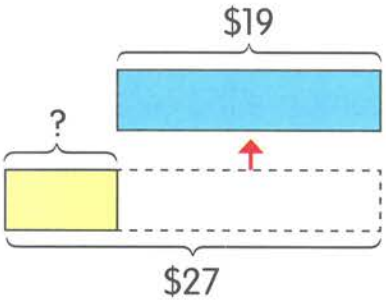
Lesson 4

Word Problems

Learn Solving word problems involving addition and subtraction of money

A camera costs $299 and a mobile phone costs $198.
You have $500. How much do you have left after buying both items?

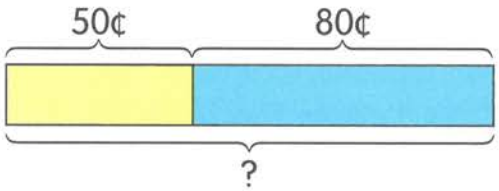
Rani had $27.
She spent $19 on a storybook.
How much money did Rani have left?



$27 – $19 = $8

Rani had $8 left.

Candy bought an eraser and a pencil.
The eraser cost 50¢.
The pencil cost 80¢.
How much did she pay altogether?



50¢ + 80¢ = 130¢
= $1.30

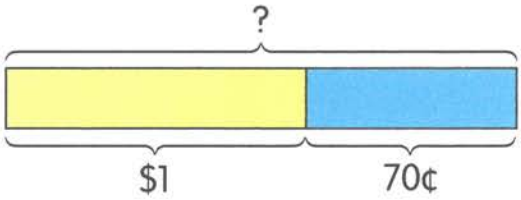
She paid $1.30 altogether.

1 Ben has $1.
Helen has 70¢.
How much money do they have altogether?

$1 = ____ ¢

____ ¢ + ____ ¢ = ____ ¢

= $ ____



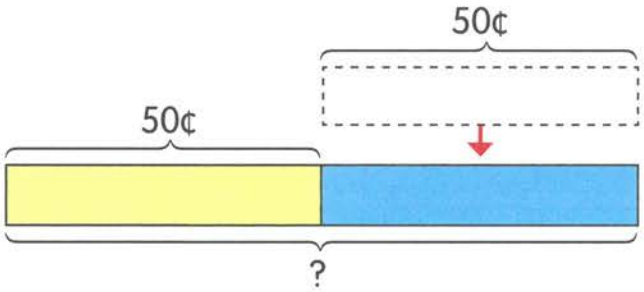
They have $ ____ altogether.

2 Maggie has 50¢.
Her mother gives her 50¢ more.

a How much money does Maggie have altogether?

b Maggie spends 35¢.
How much money does she have left?

a

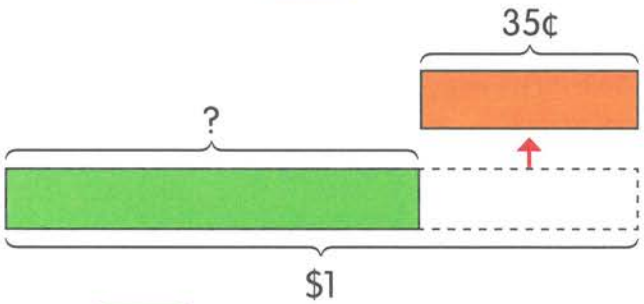


____ ¢ + ____ ¢ = ____ ¢

= $ ____

Maggie has $ ____ altogether.

b

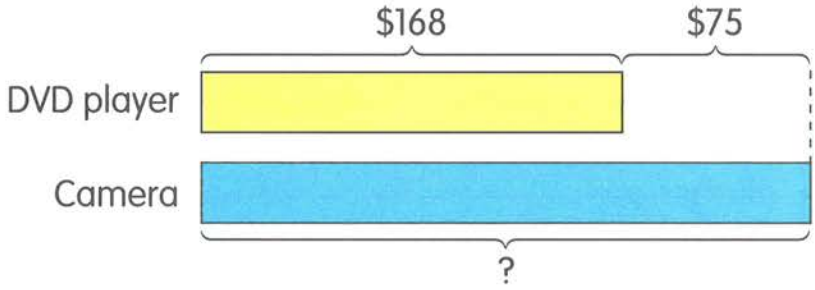


$1 = ____ ¢

____ ¢ − ____ ¢ = ____ ¢

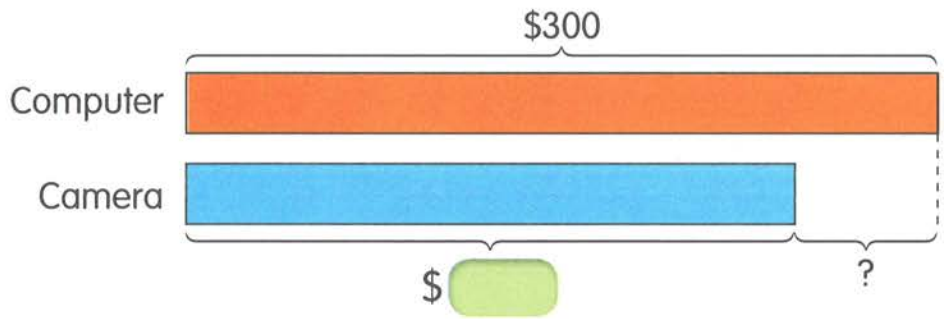
Maggie has ____ ¢ left.

3 A DVD player costs $168.
The DVD player costs $75 less than a camera.
A computer costs $300.
How much more does the computer cost than the camera?



$ ☐ + $ ☐ = $ ☐

The camera costs $ ☐.



$ ☐ − $ ☐ = $ ☐

The computer costs $ ☐ more than the camera.

Hands-on Activity

1. In groups of four, set up a toy shop.
   Bring your own toys. Write how much each toy costs in dollars.
2. One of you will be the shopkeeper. The rest will be the customers.
3. Each customer will be given 

to buy the toy(s) that he/she likes. Each customer can only buy up to two toys.
4. The shopkeeper has to give the correct change to the customers.
5. Take turns to be the shopkeeper and the customers.

Learn Solving word problems involving multiplication and division of money

3 sets of coloured pencils cost $21.
How much does 1 set of coloured pencils cost?
How much do you need to pay if you buy 5 sets of coloured pencils?

Lucy gives $3 to each of her 5 children.
How much money does Lucy give her children altogether?

$5 \times \$3 = \$15$

Lucy gives her children $15 altogether.

Tim saved $20 in 4 days.
He saved an equal amount each day.
How much did Tim save each day?

$20 ÷ 4 = $5

Tim saved $5 each day.

3 Lina spends $2 each day.
How much does she spend in 8 days altogether?

[ ] ○ $[ ] = $[ ]

Lina spends $[ ] in 8 days altogether.

4 6 movie tickets cost $60.
How much does each movie ticket cost?

$[ ] ○ [ ] = $[ ]

Each movie ticket costs $[ ].

Hands-on Activity

Work in groups.
Each pupil will bring a supermarket advertisement.

Create word problems using the advertisements for other groups to solve.
Use only the items in the advertisements that are in dollars or cents.

Example
Yvonne bought a bottle of orange juice and a carton of apple juice.
How much did she pay altogether?

$1 + $2 = $3

She paid $3 altogether.

Workbook B: Practice 4, pages 55–59

Chapter 12 Review

1. Write the amounts in dollars.

(a) 

3 dollars and 85 cents
$ ____

(b) 

4 dollars
$ ____

2. Write the amounts in dollars.

(a) 90¢ = $ ____

(b) 705¢ = $ ____

3. Write the amounts in cents.

(a) $0.45 = ____ ¢

(b) $3.18 = ____ ¢

4 Compare.

$62.90 $69.00 $62.35

a Which is the smallest amount? $

b Which is the greatest amount? $

5 Wayne has 95¢.
He has 20¢ more than his sister.
How much money do Wayne and his sister have altogether? $

6 Ali bought some books for $16.
Each book cost $4.
How many books did he buy?

7 Raj spends $3 each day.
How much does he spend in 7 days? $

Workbook B:
Maths Journal, page 60 and
Performance Task, pages 61–62

Put on Your Thinking Cap!

Peter saves $10 in his coin bank.
His money is in $2 notes and $1 coins.
How many $2 notes and $1 coins does he have in his coin bank?
(Hint: There is more than one answer.)

Workbook A: Put on Your Thinking Cap!, pages 63–64 and Review 4, pages 65–72

CHAPTER 13

Two-Dimensional and Three-Dimensional Figures

Lessons

1. Shapes and Two-Dimensional Figures
2. Solids and Three-Dimensional Figures
3. Making Patterns

Big Idea

Shapes and solids can be identified and classified. They can be combined to make figures.

Lesson 1

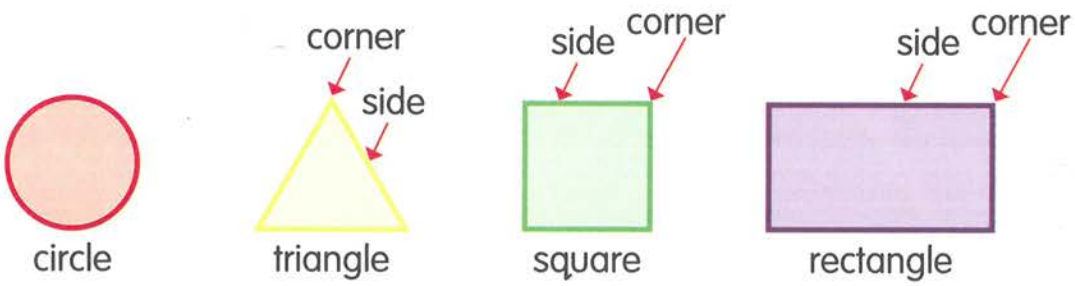
Shapes and Two-Dimensional Figures

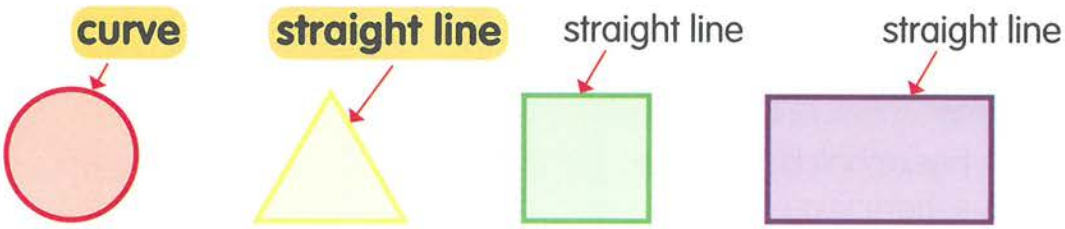
Learn Getting to know more shapes

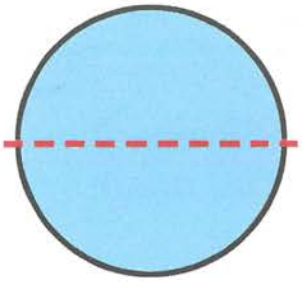
Take a circular piece of paper.
Fold it into quarters.
What shape do you have now?
How many of these shapes make a circle?

Recall

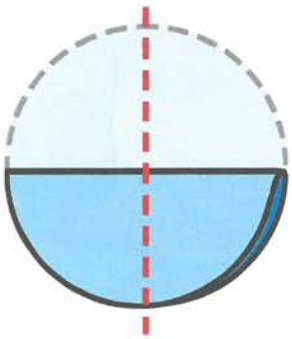
These are shapes you know.



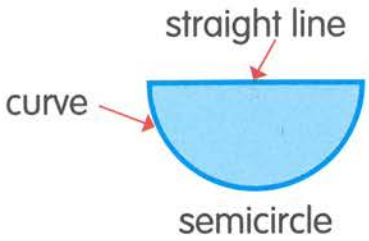




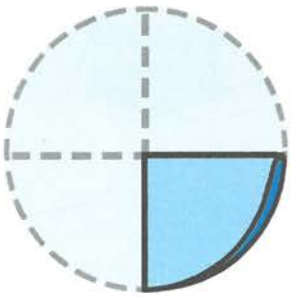
1 Use a circular piece of paper.
Fold the circle into two halves.



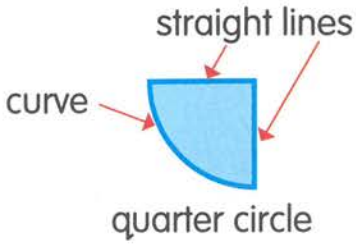
2 This half circle is known as a **semicircle**.

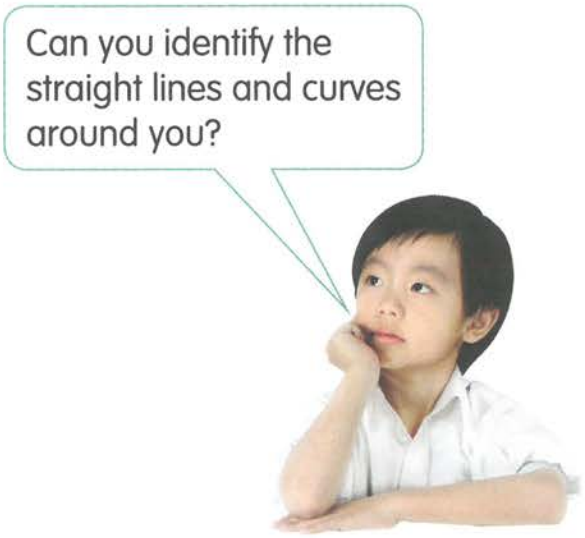


Fold the semicircle into two halves.



3 This is known as a **quarter circle**.



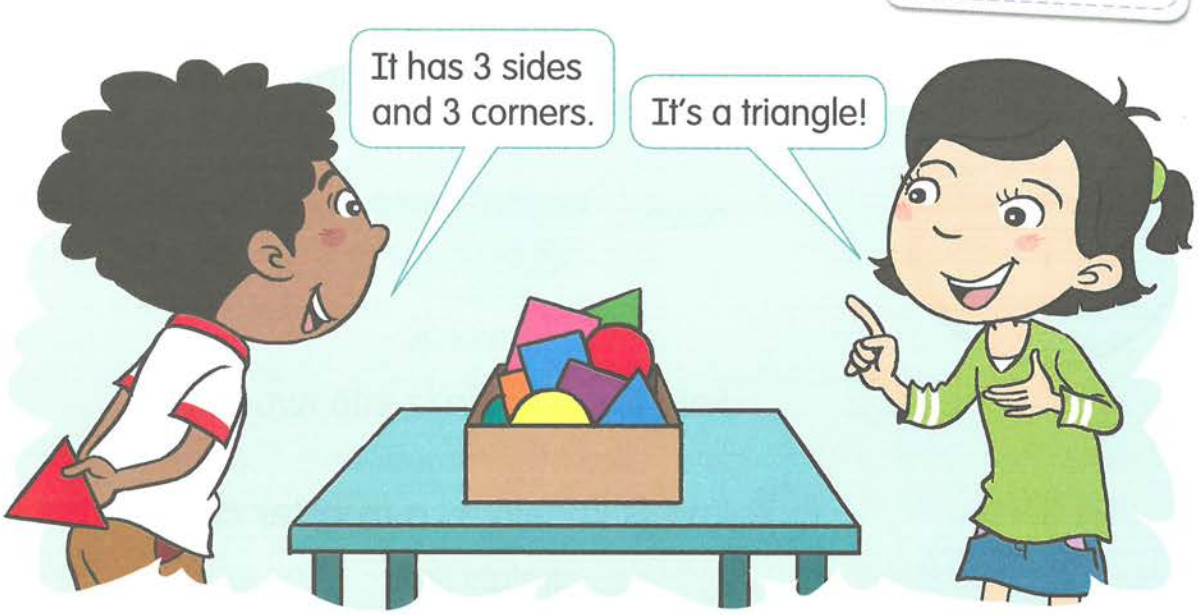


Game

Players: 2
You need:

- 

1. Put some  in a box.



2. Pick a shape from the box and hide it.
   Describe the shape to your partner.
3. Your partner will guess the name of the shape.
4. Your partner will get a point if the answer is correct.
5. Switch roles and repeat 2 to 4.

After five rounds, the player with more points wins!

Let's Explore!

Work in groups of two or three.

Place some  together so that they form a circle.

a What shapes do you use?

b How many of each shape do you use?

c Show two other ways to form a circle.

Maths Sharing

Work in pairs.

1. Choose any two of the  .
2. Compare these two  and share it with your partner.

Example

Difference: A circle has a curve. A triangle has no curves.

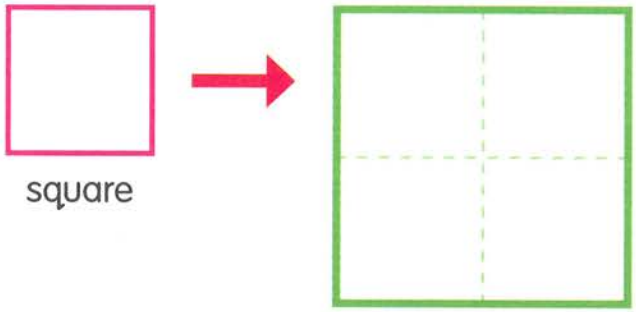
Similarity: A rectangle and a square have 4 straight lines each.

3. Repeat 1 and 2 for another two pairs of  .

Learn Combining shapes to make a figure

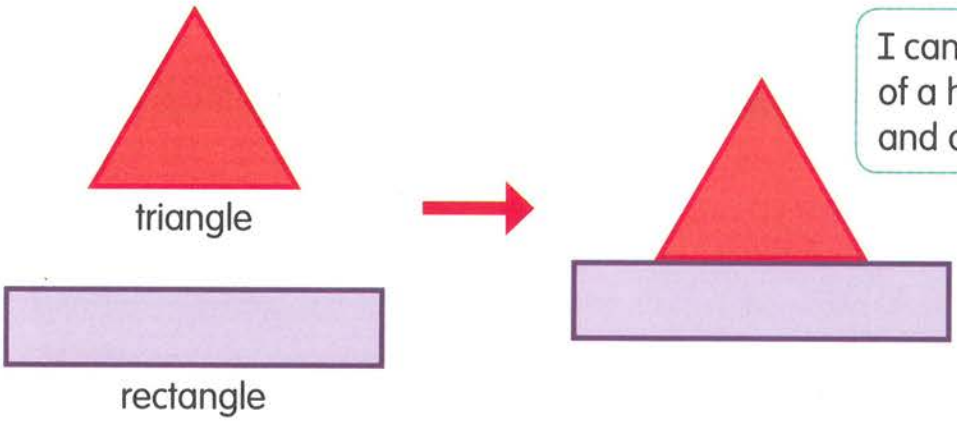
Take pieces of paper of different shapes.
Combine them together to form a figure.
Share your figure with the class.

Combine smaller shapes to make larger shapes.



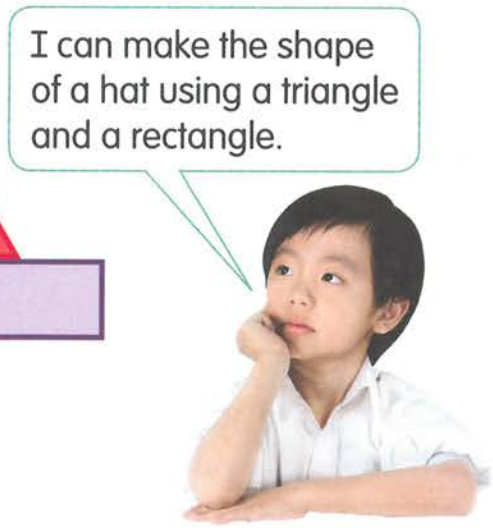
square

Combine different shapes to make a figure.



triangle

rectangle



1 What shapes make up these figures?

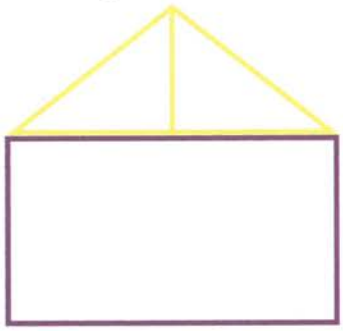
a

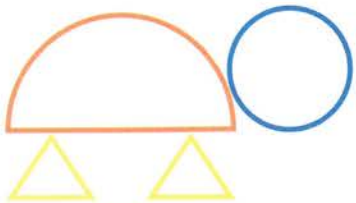
b

Hands-on Activity

Station 1

1. Work in groups of four.
   Use  to make these figures.

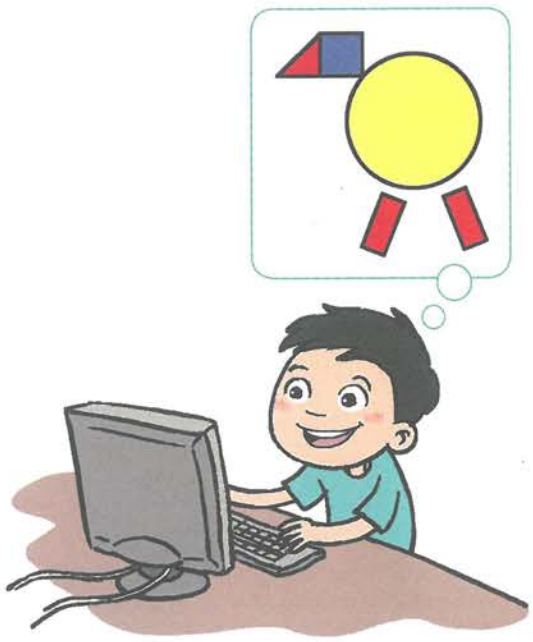




2. Use  to make other figures.
3. Get other groups to identify the shapes used for each figure.

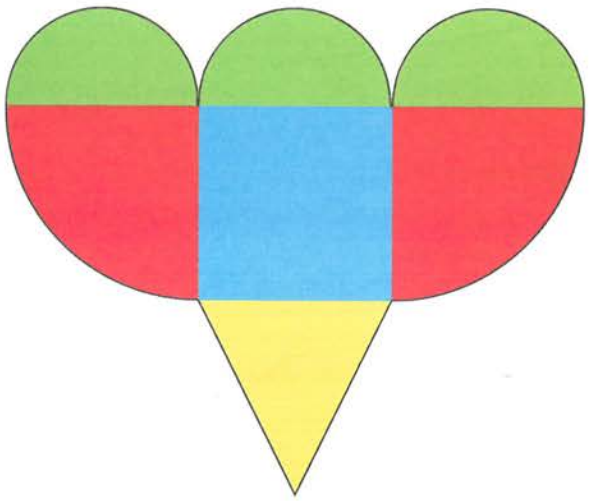
Station 2

1. Use the shape tools on your computer to draw a figure.
   Use at least four shapes.
2. Colour the shapes in your figure.
3. Print and share your figure with your classmates.
4. Get other groups to identify the shapes that make up your figure.



2 Look at the pictures.
What shapes can you see?

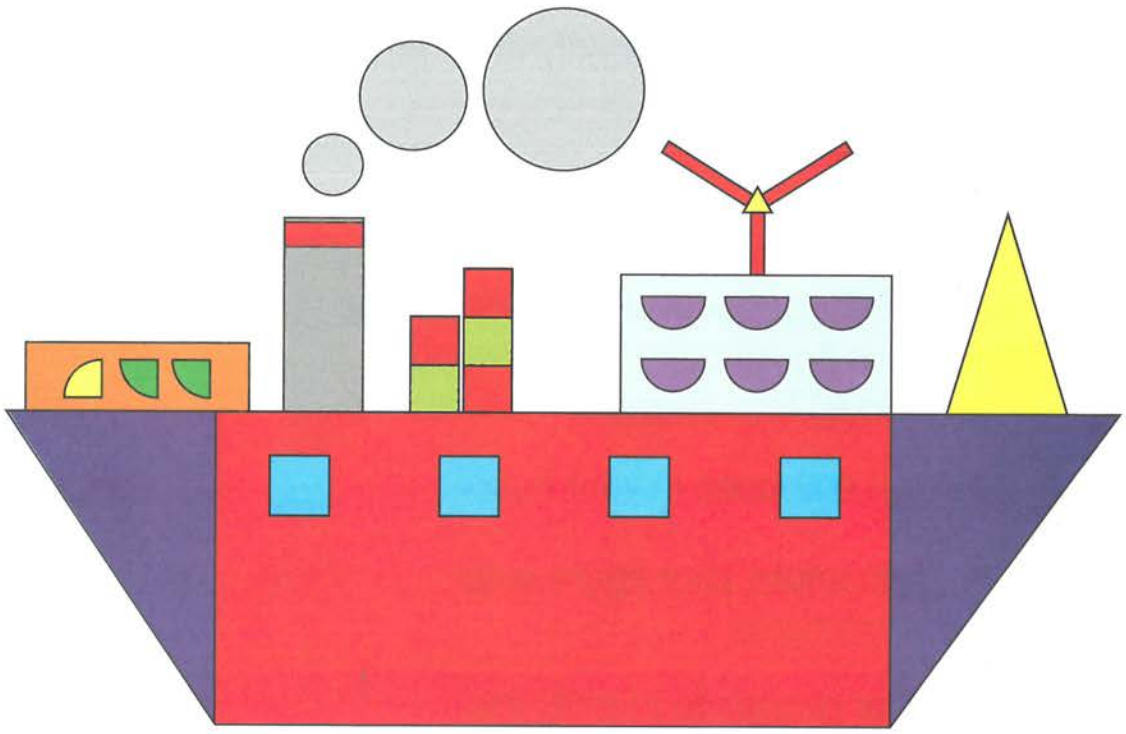
a



3 semi-circles
2 quaters-circles
1 squdre
1 triangle

7

b



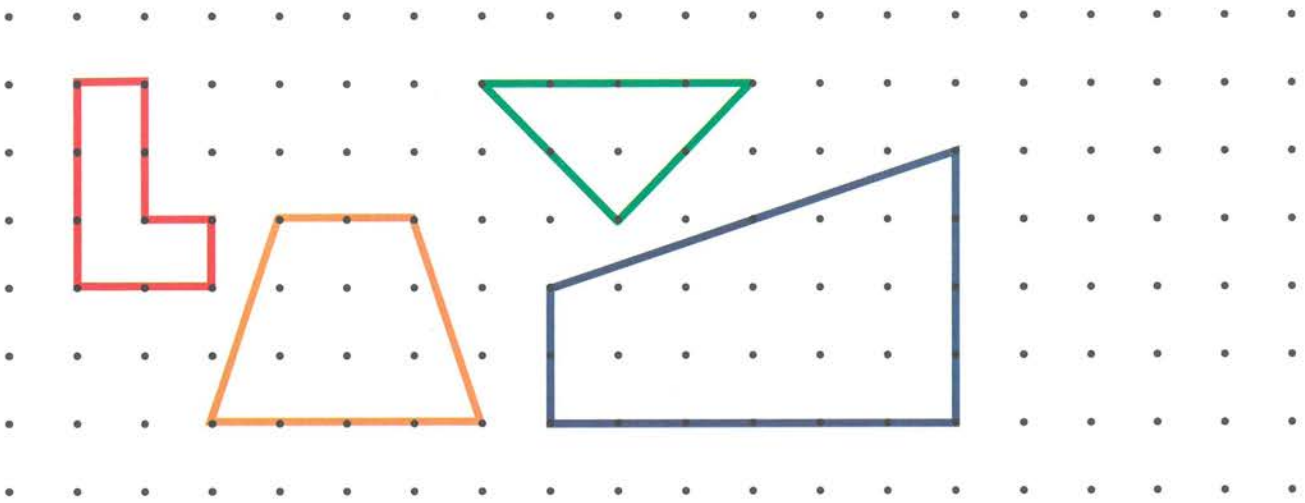
27

8 rectangles
4 triangles
3 quarter-circles
1 squares
3 circles
1 semi-circles

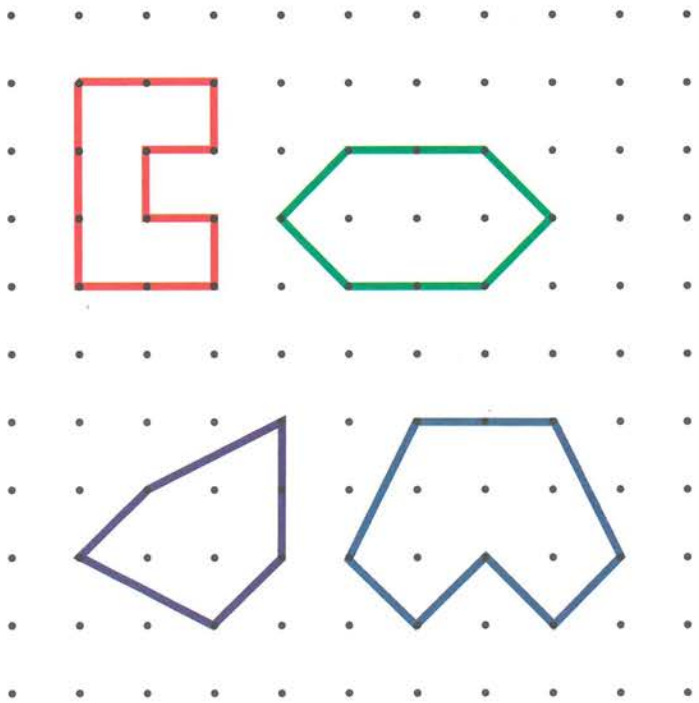
Learn Using dot grid paper to draw figures

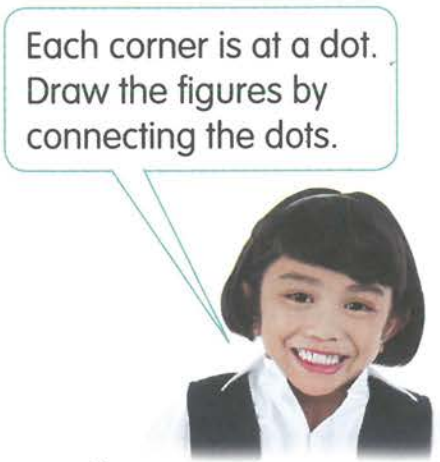
Take a piece of dot grid paper.
Draw a figure on the paper.
How did you do it?

Regina draws these four figures on dot grid paper.



3 Draw these figures on dot grid paper.

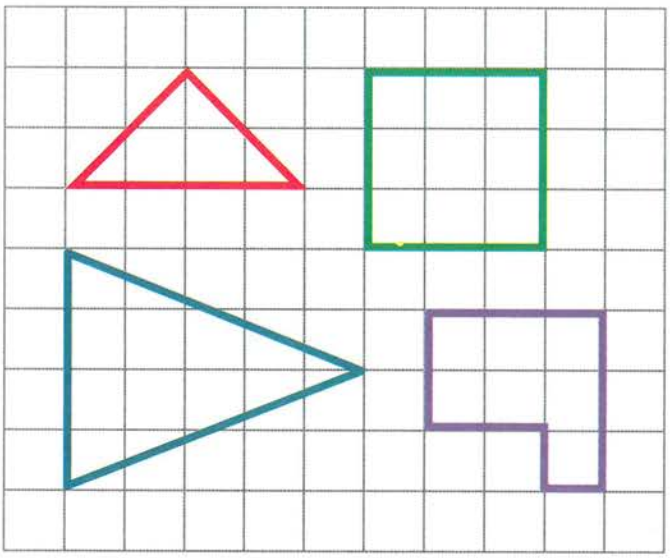




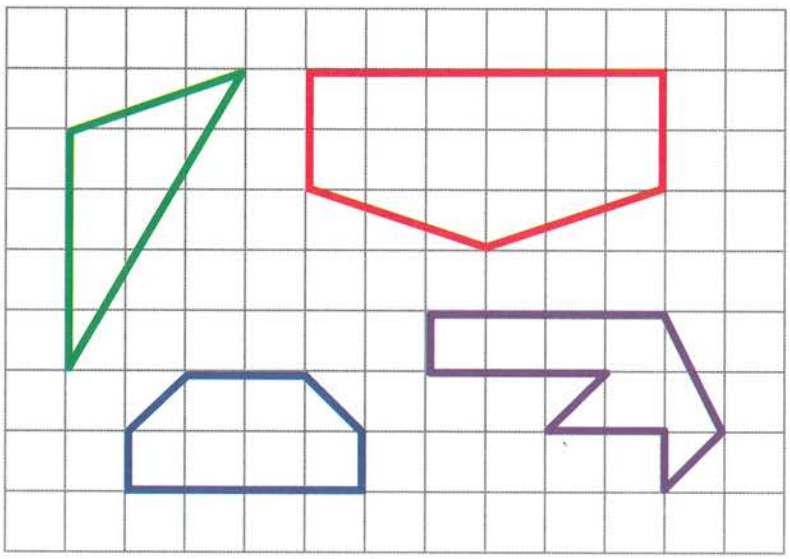
Learn Using square grid paper to draw figures

Take a piece of square grid paper.
Draw a figure on the paper.
Share your figure with your partner.
Can you draw your partner's figure on your paper?

Eugene draws these four shapes on square grid paper.



4 Draw these figures on square grid paper.



Workbook B: Practice 1, pages 73–86

Lesson 2

Solids and Three-Dimensional Figures

Learn Getting to know solids

Take a football.
What solid is this?

Look at these solids and objects.

Solids	Examples of Objects
cube flat surface corner edge	**flat surface** **edge** corner
cuboid edge flat surface corner	flat surface edge corner

Continued on next page

Solids	Examples of Objects
cone corner flat surface	corner flat surface
cylinder flat surface	flat surface
sphere	

Does a sphere have any flat surfaces, edges or corners?

1 Which of these objects are cubes?

2 Which of these objects have only flat surfaces?

crayon

straw

paper

tissue box

marble

ruler

Hands-on Activity

Station 1

Work in pairs.

A bag contains five solids — a cube, a cuboid, a cone, a cylinder and a sphere.

1. Take turns to feel one of the solids without looking into the bag.
2. Describe the solid to your partner.
3. Your partner will guess what the solid is.

4. Show the solid to your partner to check the answer.

Station 2

Work in pairs.

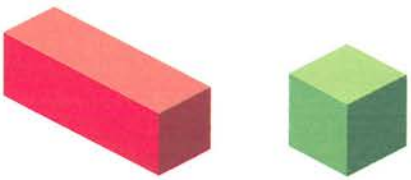
Use  .

1. Look at each solid.
   Which solids can roll?

2. Pick two solids.
   Describe the two solids to your partner.

Example

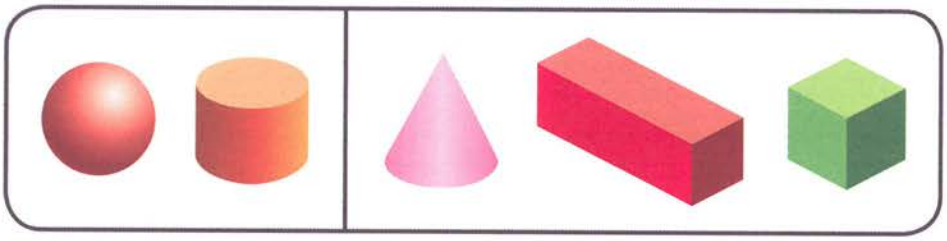
Difference: A sphere has no corners. A cone has one corner.



Similarity: A cuboid and a cube have flat surfaces.

3. Sort the solids in different ways.
   Tell the rest of the class how the solids are sorted.

Example



Both a sphere and a cylinder have no corners.

A cone, a cuboid and a cube have corners.

Let's Explore!

Work in pairs.
Look around your school.
Find two objects that have these solids.

a cube ____ b cuboid ____ c cone ____

d cylinder ____ e sphere ____

Share your findings with your class.

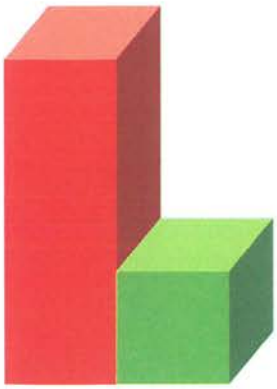
Example

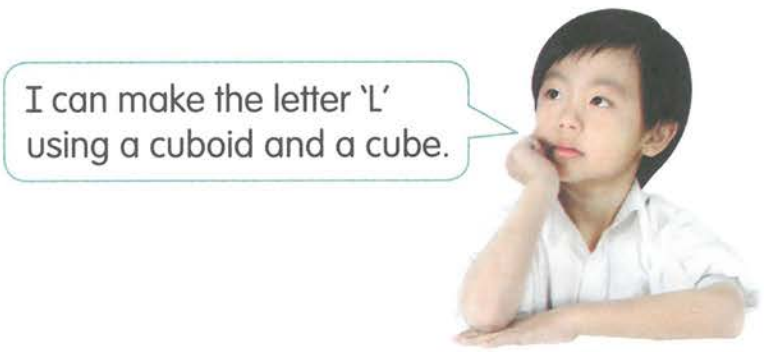
tissue box

The tissue box is a cuboid.

Learn Building figures with solids

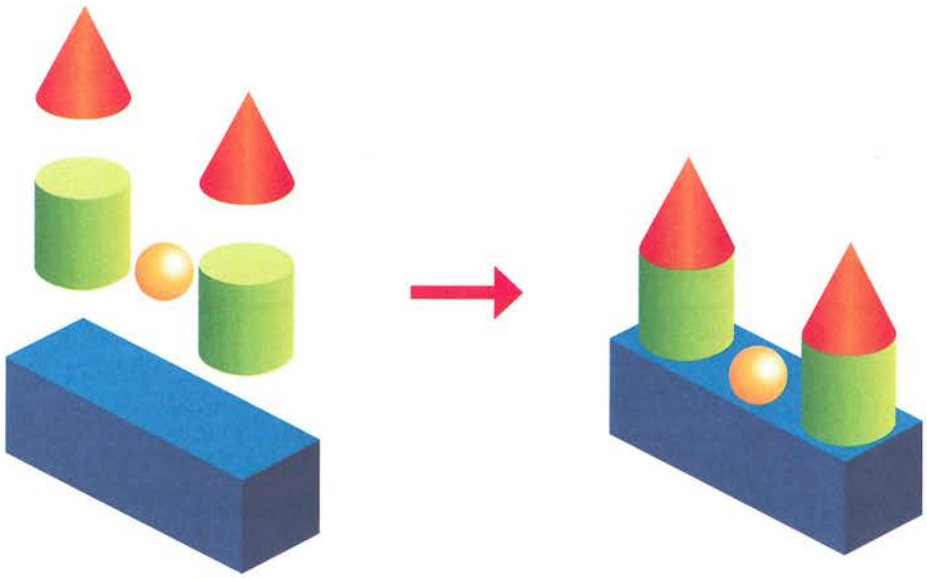
Take a cuboid and a cube.
Form a figure using these two solids.





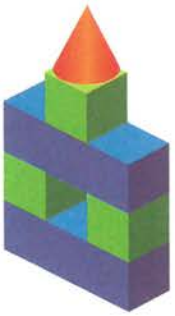
I can also make a rocket using a cone and a cylinder.

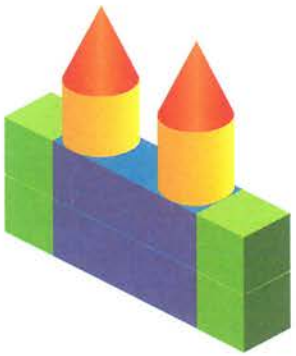
I can make a tower using a cone and a cuboid.



I can also make a castle using 2 cylinders, 2 cones, a sphere and a cuboid.

3 Name the solids that make up the figures.

a 

b 

Hands-on Activity

Work in pairs.

1 Take turns to build a figure using  .

Example

2 Name the solids in the figure.

Workbook B: Practice 2, pages 87–90

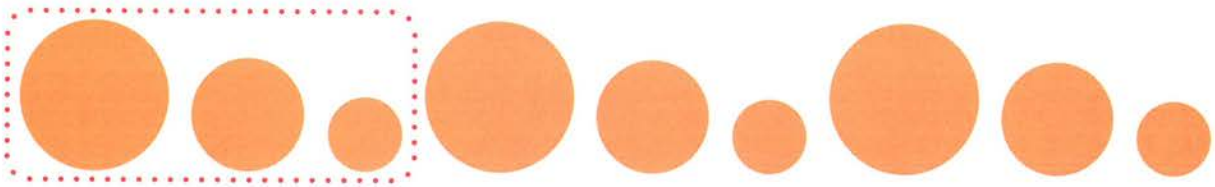
Lesson 3

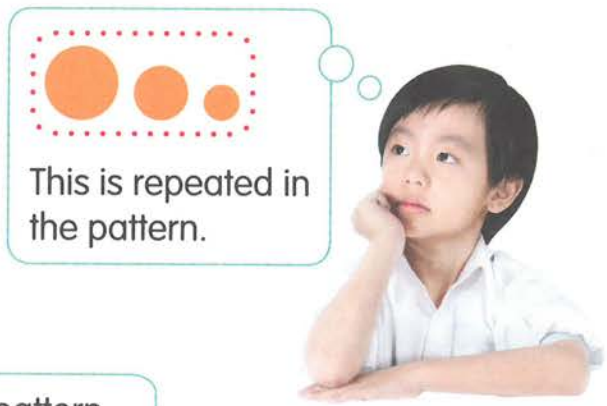
Making Patterns

Learn Making patterns with shapes

Make a pattern using squares of different colours.
Can you explain what the pattern is?

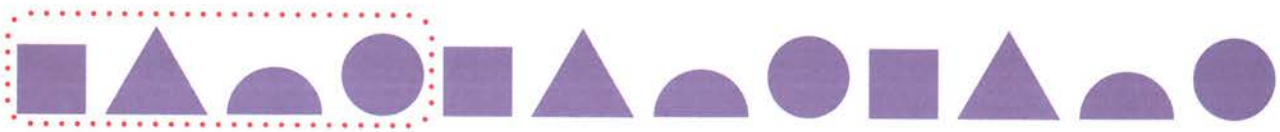
I can make a **pattern** using circles of different **sizes**.





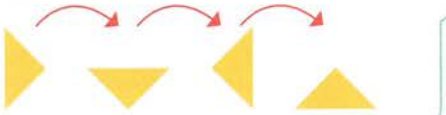
This is repeated in the pattern.

I can make a pattern using different **shapes**.



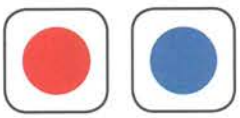
I can make a pattern using triangles of different **colours**.

I can make a pattern by **turning** the shape like this.



1 Study each pattern. What comes next?

a  ?



There is a change in ____ in this pattern.

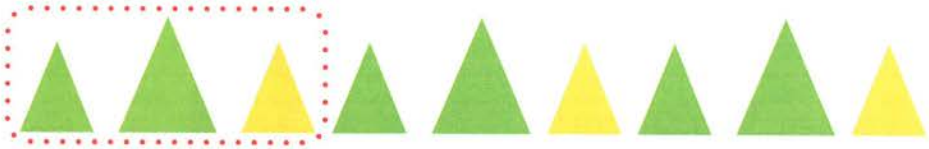
b  ?

There is a change in ____ in this pattern.

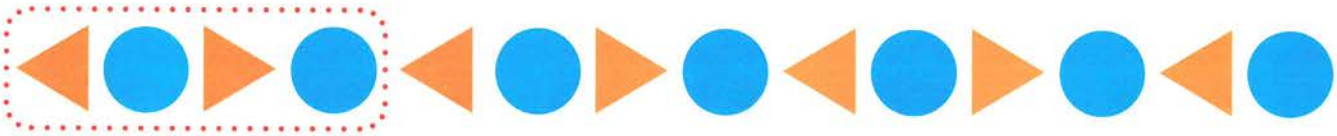
Learn Making patterns with shapes that change in more than one way

Make a pattern using shapes of different sizes and colours.
Can you explain the pattern?

Look at these patterns.



There is a change in size and colour.



This pattern is made with two shapes!

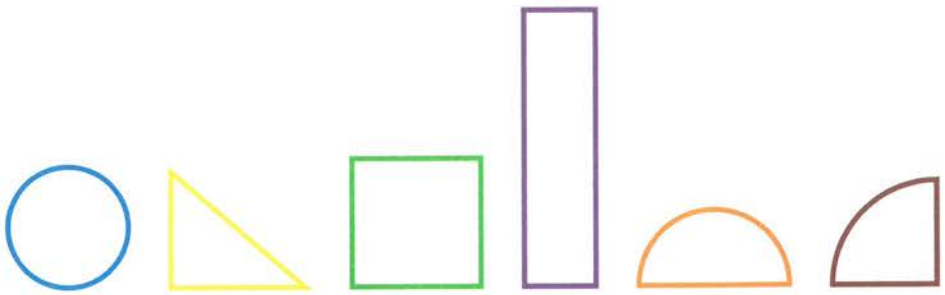
It is also made by turning the triangles.

2 Study the pattern. What comes next?

Hands-on Activity

Work in pairs.
Use scissors, crayons, glue, string, three strips of paper, a clothes hanger and shape cut-outs.

1. Trace these cut-outs onto a piece of paper.



2. Colour and cut out the shapes.

3. Arrange the cut-outs to make three different patterns.

4. Glue the patterns onto the strips of paper.

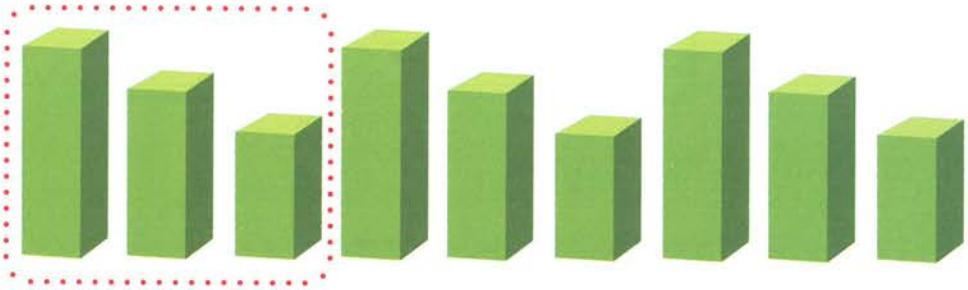
5. Tie the three strips of paper to the clothes hanger. Now, you have your own pattern mobile!

Share and explain your patterns to the class.

Learn Making patterns with solids

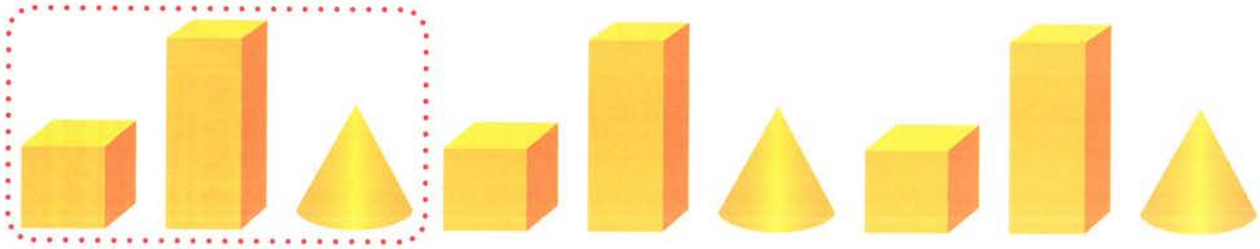
Make a pattern using cones with different colours.
Can you explain what the pattern is?

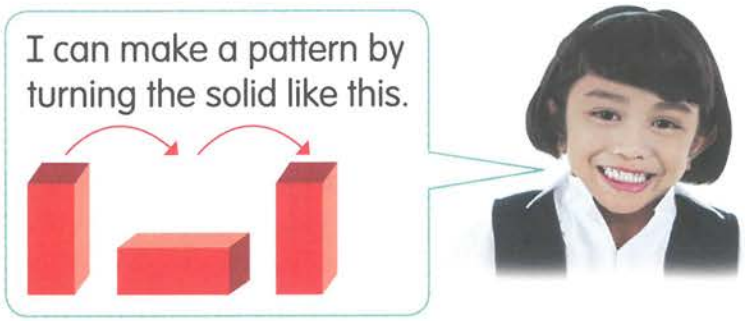
I can make a pattern using cuboids of different sizes.

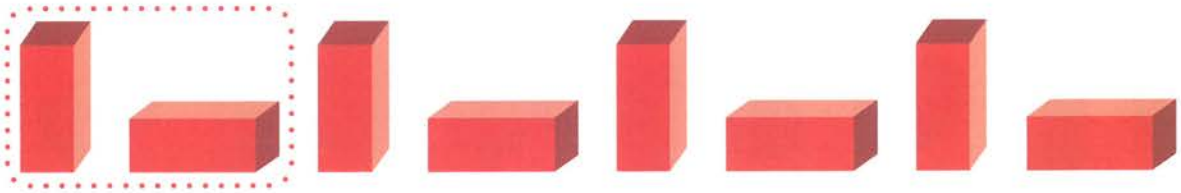


This is repeated in the pattern.

I can make a pattern using different solids.







3 Study each pattern. What comes next?

a

?

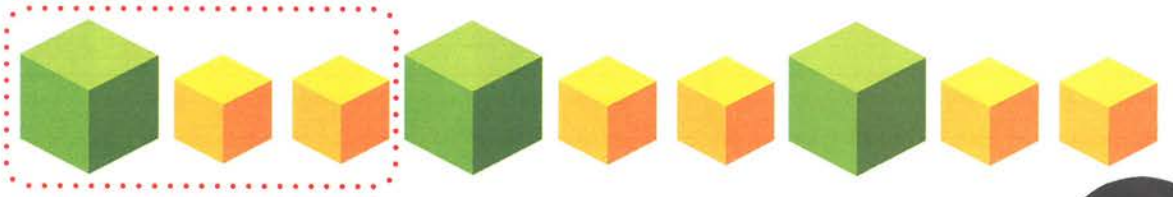
b

?

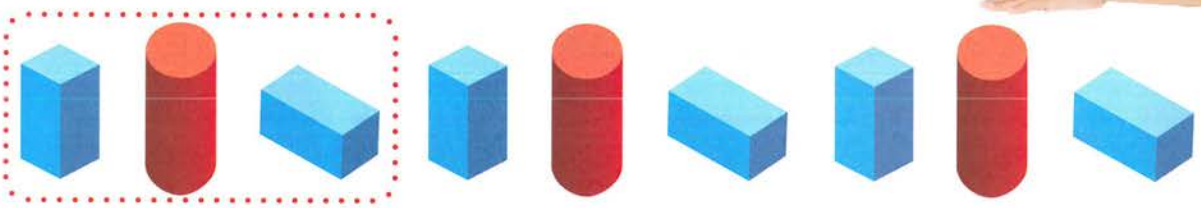
Learn Making patterns with solids that change in more than one way

Make a pattern using solids of different sizes and colours.
What is the pattern?

Look at these patterns.



There is a change in the size and colour of the cubes.



This pattern is made with two different solids.

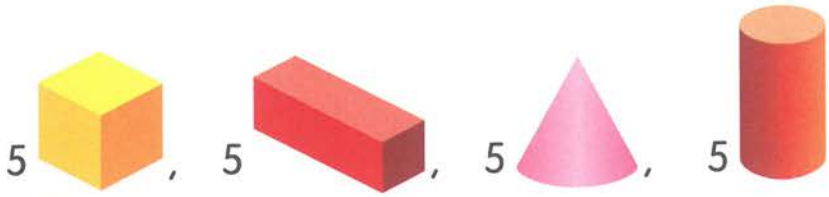
It is also made by turning the cuboids.

4 Study the pattern. What comes next?

?

Hands-on Activity

Work in groups of four.
Your teacher will give each group these solids.

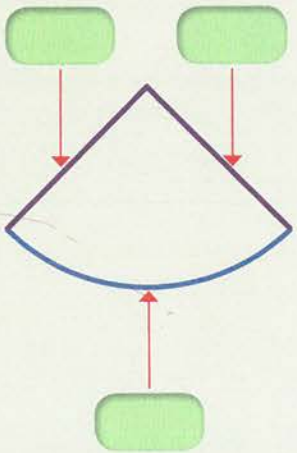


1. Use the above solids to make a pattern.
2. Invite other groups to guess the next solid.

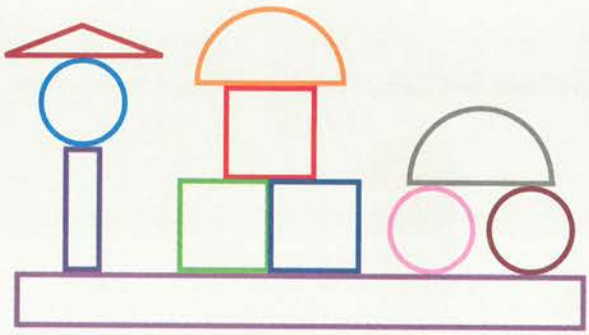
Workbook B: Practice 3, pages 91–94

Chapter 13 Review

1. This is a quarter circle.
   Which is a straight line?
   Which is a curve?

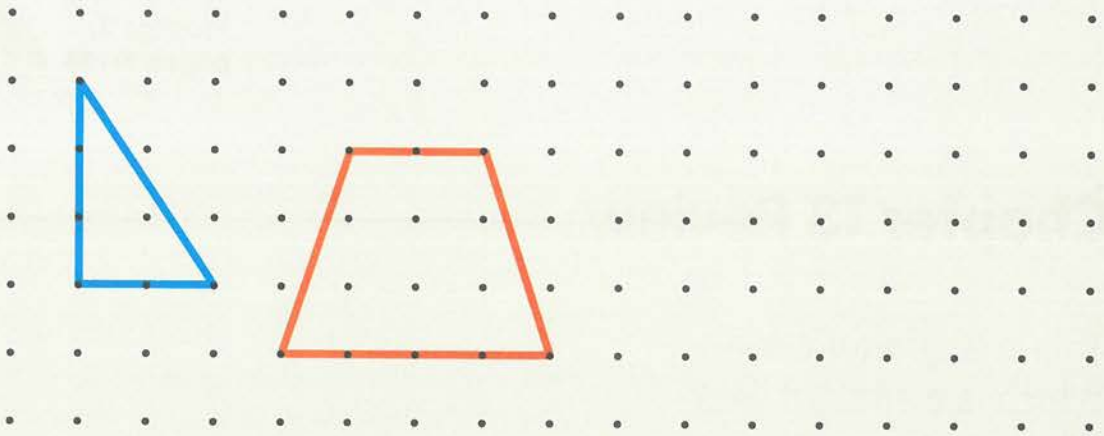


2 Look at the figure.
It is made up of different shapes.

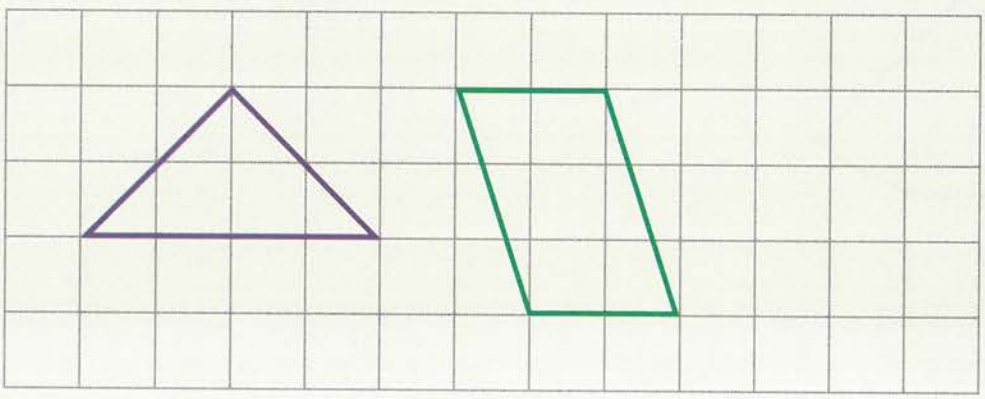


How many different shapes can you find? ____

3 Draw these figures on dot grid paper.

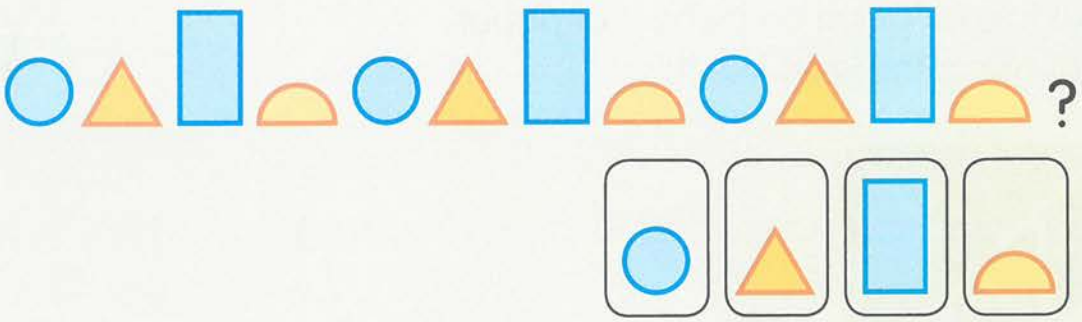


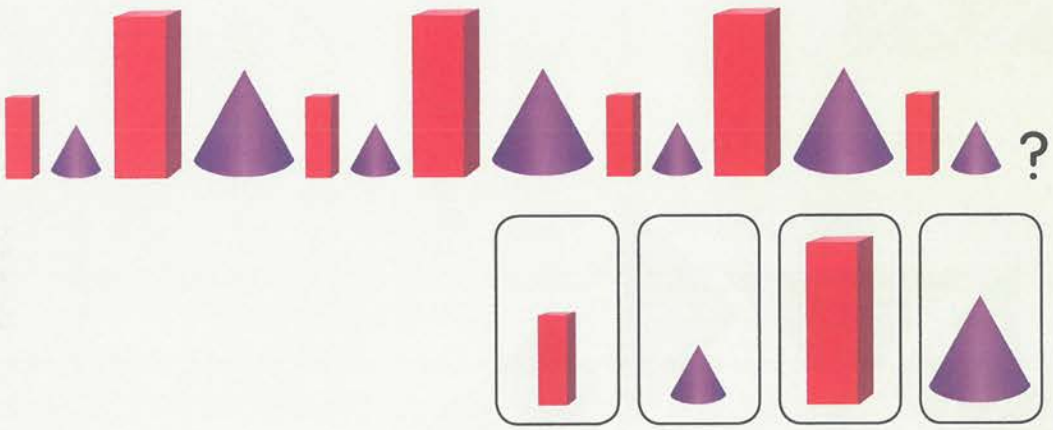
4 Draw these figures on square grid paper.



5 Name the solids that make up this figure.

6 Study each pattern. What comes next?

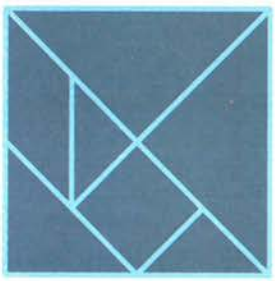
a 

b 

Workbook B:
Maths Journal, page 95 and
Performance Task, page 96

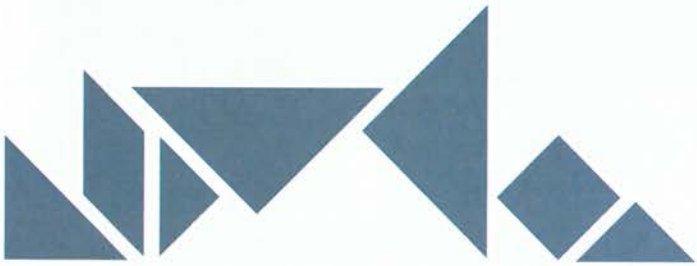
Put on Your Thinking Cap!

This is a tangram.
It is a square made up of seven pieces.



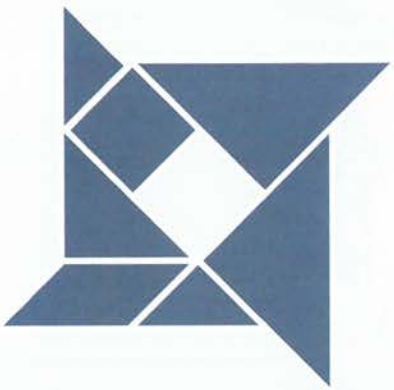
Put this tangram on a sheet of paper.
Cut along the lines like this:

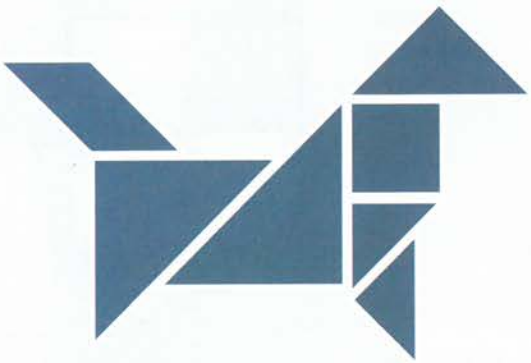
Now, mix up the pieces.



Put them back into the original shape of a square.

Now, use the tangram to form these figures.





Workbook A: Put on Your Thinking Cap!
pages 97–98

CHAPTER 14

Fractions

Lessons

1. Understanding Fractions
2. More Fractions
3. Comparing and Ordering Fractions
4. Addition and Subtraction of Like Fractions

Big Idea

Fractions can be used to describe how equal parts are related to a whole.

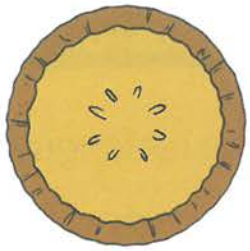
Lesson 1

Understanding Fractions

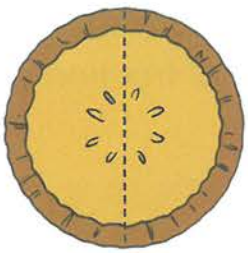
Learn Using fractions to describe equal parts of a whole

Take a square piece of coloured paper.
How can you divide it so that the 2 parts have the same size?
Can you divide the square into 2 equal parts in another way?

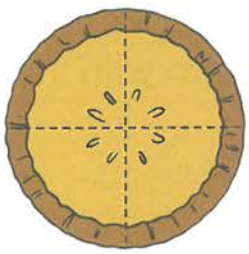
This is a pie.
It is **one whole**.



Jake cuts the pie into 2 **equal** parts.
Each part is a half circle.
We write it as $\frac{1}{2}$.
$\frac{1}{2}$ is 1 out of 2 equal parts.



Jake cuts the pie further into 4 equal parts.
Each part is a quarter circle.
We write it as $\frac{1}{4}$.
$\frac{1}{4}$ is 1 out of 4 equal parts.



$\frac{1}{2}$ and $\frac{1}{4}$ are examples of **fractions**.
A whole describes an entire figure.
It is equal to 1.

$\frac{1}{2}$ → **numerator**

$\frac{1}{2}$ → **denominator**

The numerator shows the number of equal parts of the whole that are shaded.
The denominator shows the number of equal parts the whole is divided into.

Hands-on Activity

Use three rectangular pieces of paper that have the same size.

1. Fold each rectangle into
   - (a) 2 equal parts.
   - (b) 3 equal parts.
   - (c) 4 equal parts.
2. For each rectangle, shade 1 of the equal parts.
   What fraction of the whole is each equal part?

Maths Sharing

Work in groups.
Think of examples of fractions used in real life.
Share them with the class.

Example

I ate 2 parts out of 8 equal parts of a chocolate bar.

I ate $\frac{2}{8}$ of the chocolate bar.

Learn Naming the parts of a whole

Take a circular piece of coloured paper.
Fold it in half.
Then, fold it in half again.
What fraction is 1 part of the circle?

The pizza shows one whole.

Ben cuts the pizza into 2 equal parts.
2 halves make 1 whole.

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

Ben cuts the pizza into 4 equal parts.

4 quarter circles make 1 whole.

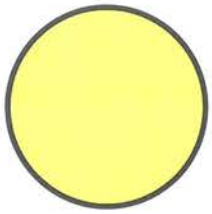
1 whole = $\frac{4}{4}$

He eats 3 parts out of 4 equal parts.

He eats $\frac{3}{4}$ of the whole pizza.

He has $\frac{1}{4}$ of the pizza left.

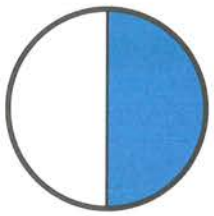
The circle shows one whole.



a The circle can be divided into 2 equal parts.
1 part out of the 2 equal parts is shaded.

$\frac{1}{2}$ of the circle is shaded.

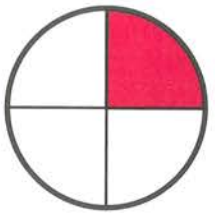
$\frac{1}{2}$ of the circle is **not** shaded.



b The circle can be divided into 4 equal parts.
1 part out of the 4 equal parts is shaded.

$\frac{1}{4}$ of the circle is shaded.

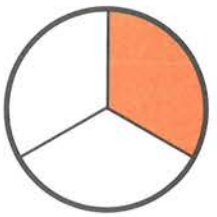
$\frac{3}{4}$ of the circle is **not** shaded.



c The circle can be divided into 3 equal parts.
1 part out of the 3 equal parts is shaded.

$\frac{1}{3}$ of the circle is shaded.

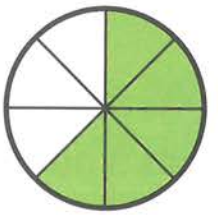
$\frac{2}{3}$ of the circle is **not** shaded.



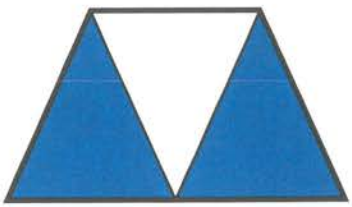
d The circle can be divided into 8 equal parts.
5 parts out of the 8 equal parts are shaded.

$\frac{5}{8}$ of the circle is shaded.

$\frac{3}{8}$ of the circle is **not** shaded.

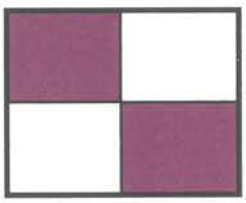


1 What fraction of each figure is shaded?

a 

_____ parts out of the _____ equal parts are shaded.

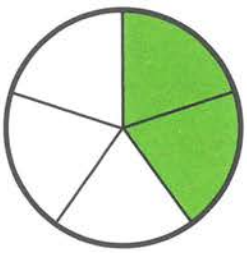
_____ of the figure is shaded.

b 

_____ parts out of the _____ equal parts are shaded.

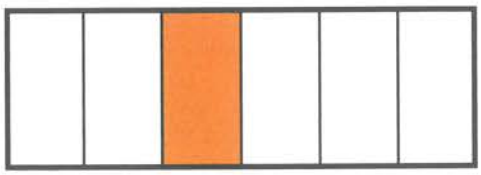
_____ of the figure is shaded.

2 What fraction of each figure is **not** shaded?

a 

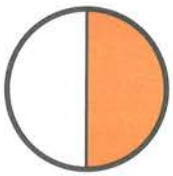
_____ parts out of the _____ equal parts are not shaded.

_____ of the figure is not shaded.

b 

_____ parts out of the _____ equal parts are not shaded.

_____ of the figure is not shaded.

Fraction	Read As
 1	one whole
 $\frac{1}{2}$	one-half
 $\frac{1}{3}$	one-third
 $\frac{1}{4}$	one-quarter
 $\frac{1}{5}$	one-fifth
 $\frac{1}{6}$	one-sixth

Fraction	Read As
 $\frac{1}{7}$	one-seventh
 $\frac{1}{8}$	one-eighth
 $\frac{1}{9}$	one-ninth
 $\frac{1}{10}$	one-tenth
 $\frac{1}{11}$	one-eleventh
 $\frac{1}{12}$	one-twelfth

Workbook B: Practice 1, pages 99–106

Encourage your child to write the fractional parts, based on the table above.

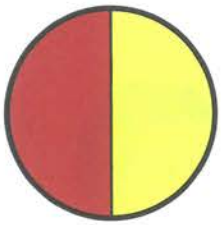
Lesson 2

More Fractions

Learn Making a whole

How can you show $\frac{3}{3}$ using  ?

This circle shows a whole with 2 equal parts.



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

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

1 part is red and 1 part is yellow.

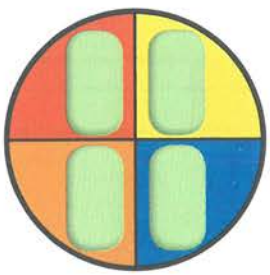
$\frac{1}{2}$ of the circle is red. $\frac{1}{2}$ of the circle is yellow.

$\frac{1}{2}$ and $\frac{1}{2}$ make 1 whole.

1 whole is the same as $\frac{2}{2}$.

1 The circle shows one whole divided into equal parts.

a Name each part.



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

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

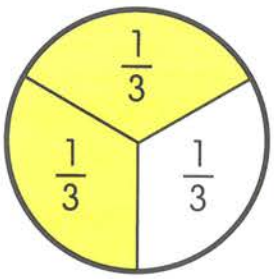
b Now, complete the sentence.

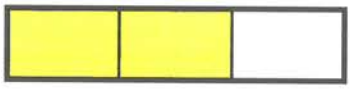
[ ], [ ], [ ] and [ ] make 1 whole.

Learn Expressing fractions in terms of unit fractions

Take a rectangular piece of coloured paper.
Fold it in half.
How many halves are there in the whole?

The circle shows a whole with 3 equal parts.





Each part is 1 out of 3 equal parts or $\frac{1}{3}$.

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

$\frac{2}{3}$ of the circle is yellow.

$\frac{2}{3}$ is read as two-thirds.

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

$\frac{1}{3}$ of the circle is white.

$\frac{2}{3}$ and $\frac{1}{3}$ make 1 whole.

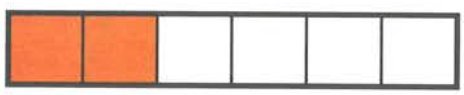
2 Express the shaded parts of each figure in terms of unit fractions.

a

$\frac{4}{5} = \square + \square + \square + \square$

$\frac{4}{5}$ and $\square$ make 1 whole.

b



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

$\frac{2}{6}$ and $\square$ make 1 whole.

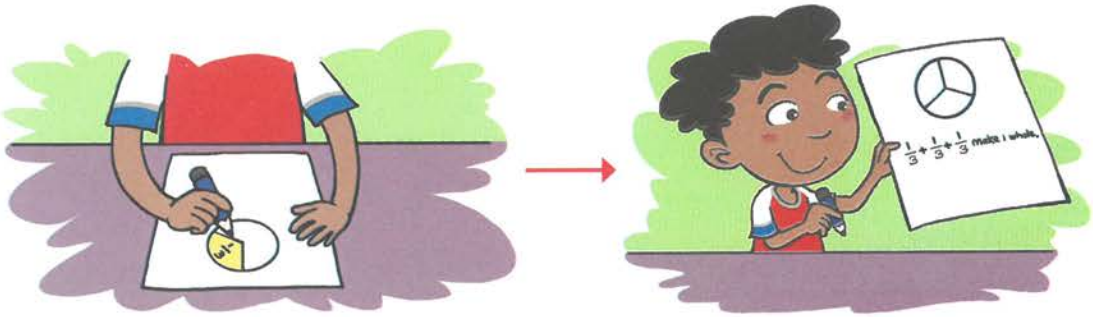
Hands-on Activity

Use  .

1. You will be given a part of a  .

2. Find friends to make a whole with your  .

3. Use  to divide the circle into equal parts.
Write a sentence for the number of parts that equal 1 whole.



4. Colour a few parts.
Write two sentences to describe the coloured parts in fractions.

Workbook B:
Practice 2,
pages 107–108

Lesson 3

Comparing and Ordering Fractions

Learn Comparing fractions

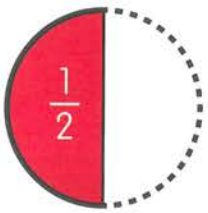
Take  for $\frac{1}{2}$ and $\frac{1}{3}$.

Compare the fractions. Which fraction is greater?

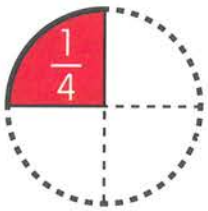
David eats $\frac{1}{2}$ of a sandwich.

Sam eats $\frac{1}{4}$ of a similar sandwich.

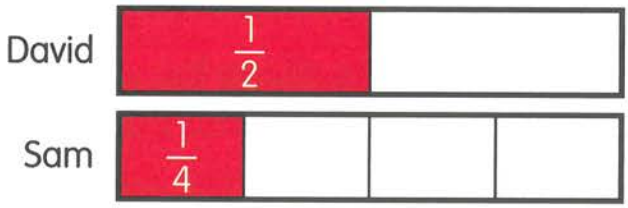
Who eats more?



David



Sam



$\frac{1}{2}$ is greater than $\frac{1}{4}$.

David eats more.

1 John eats $\frac{1}{4}$ of a fruit bar.

Liza eats $\frac{1}{3}$ of a similar fruit bar.

Who eats less?

$\frac{1}{4}$ is _____ than $\frac{1}{3}$.

_____ eats less.

Learn Comparing and ordering fractions

Take  for $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{5}$.

Compare the fractions. Which fraction is the smallest?
Arrange the fractions from smallest to greatest.

There are three paper strips of the **same** size.

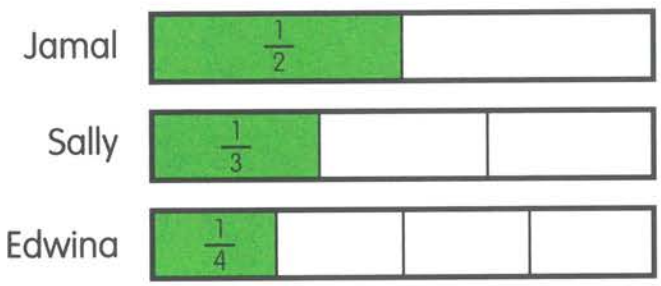
Jamal colours $\frac{1}{2}$ of the first paper strip.

Sally colours $\frac{1}{3}$ of the second paper strip.

Edwina colours $\frac{1}{4}$ of the third paper strip.

Who colours the most?

Who colours the least?



$\frac{1}{2}$ is greater than $\frac{1}{3}$.
Jamal colours more than Sally.

$\frac{1}{3}$ is greater than $\frac{1}{4}$.
Sally colours more than Edwina.

$\frac{1}{4}$ is smaller than $\frac{1}{3}$ and $\frac{1}{2}$.
So, Edwina colours less than Sally and Jamal.

Jamal colours the most.

Edwina colours the least.

Claire, Peiling and Rani each have a piece of paper of the same size.
Each girl divides her paper into eight equal parts.

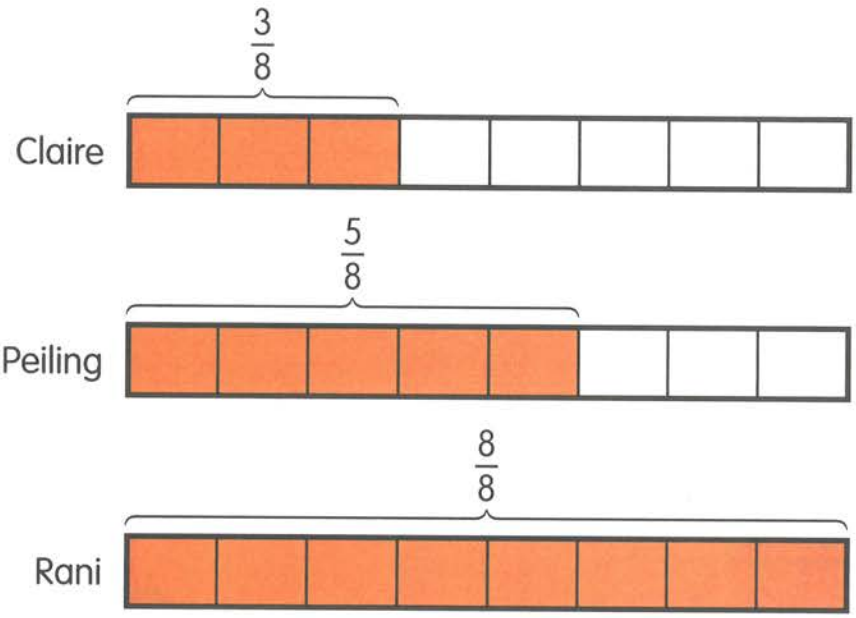
Claire colours $\frac{3}{8}$ of her paper.

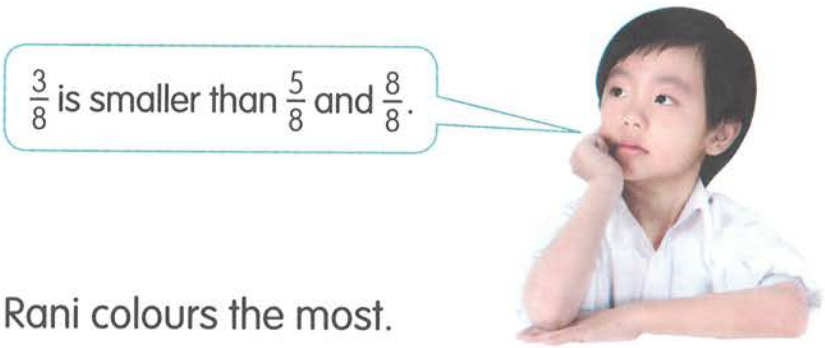
Peiling colours $\frac{5}{8}$ of her paper.

Rani colours $\frac{8}{8}$ of her paper.

Who colours the most?

Who colours the least?



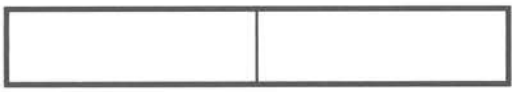


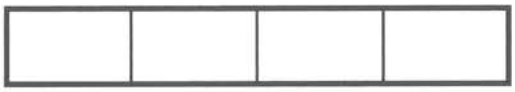
Rani colours the most.

Claire colours the least.

2 **a** Shade the parts to show the fractions.

$\frac{1}{3}$ 

$\frac{1}{2}$ 

$\frac{1}{4}$ 

b Arrange the fractions from smallest to greatest.

____, ____, ____

smallest

3 **a** Shade the parts to show the fractions.

$\frac{2}{5}$ 

$\frac{4}{5}$ 

$\frac{3}{5}$ 

b Arrange the fractions from greatest to smallest.

____, ____, ____

greatest

Hands-on Activity

Station 1

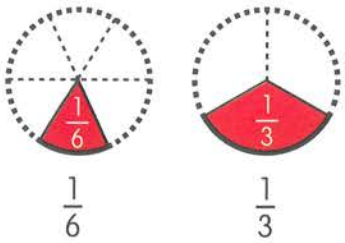
Which fraction is smaller?

Use  to find out. Circle your answer.

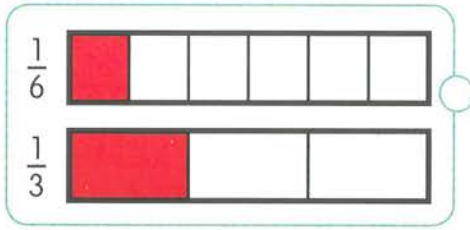
(a) $\frac{1}{4}$ or $\frac{1}{8}$ (b) $\frac{1}{7}$ or $\frac{1}{3}$ (c) $\frac{1}{12}$ or $\frac{1}{5}$ (d) $\frac{1}{11}$ or $\frac{1}{9}$

Example

$\frac{1}{6}$ or $\frac{1}{3}$



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



From your answers, what do you notice?

Station 2

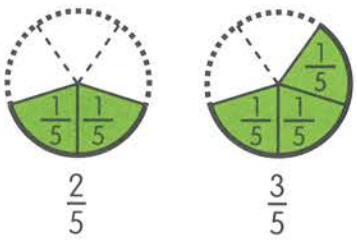
Which fraction is greater?

Use  to find out. Circle your answer.

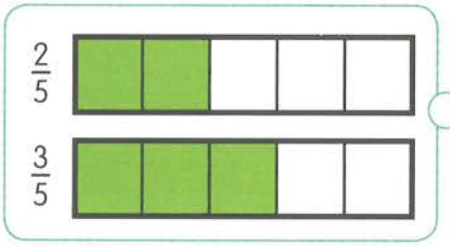
(a) $\frac{6}{7}$ or $\frac{5}{7}$ (b) $\frac{4}{9}$ or $\frac{7}{9}$ (c) $\frac{9}{10}$ or $\frac{8}{10}$ (d) $\frac{5}{12}$ or $\frac{10}{12}$

Example

$\frac{2}{5}$ or $\frac{3}{5}$



$\frac{2}{5}$ $\frac{3}{5}$



From your answers, what do you notice?

Game

Players: 2
You need:
- $\frac{1}{2}$ and (unit fractions only)

1. Hold $\frac{1}{2}$ facing down.
   Your partner holds facing down.
2. Take turns to flip over one card and compare the fractions on the cards.
   The player who gives the correct answer first keeps the cards on the table.

3. Repeat 2 until one of you have no more cards left.

The player with more cards wins.

Workbook B: Practice 3, pages 109–116

Lesson 4

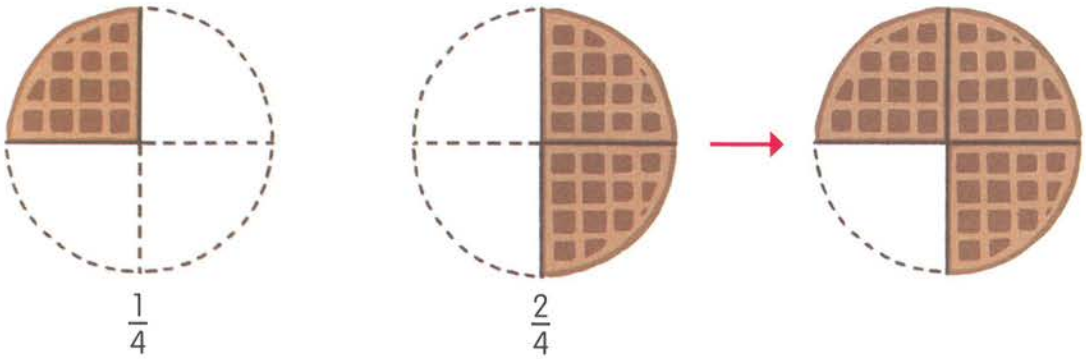
Addition and Subtraction of Like Fractions

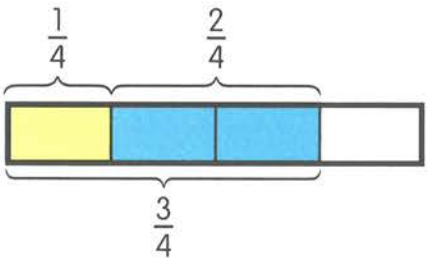
Learn Adding fractions

Take  for $\frac{1}{5}$ and $\frac{2}{5}$.
How do you add the fractions together?

Dylan ate $\frac{1}{4}$ of a waffle.

Olivia ate $\frac{2}{4}$ of it.





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

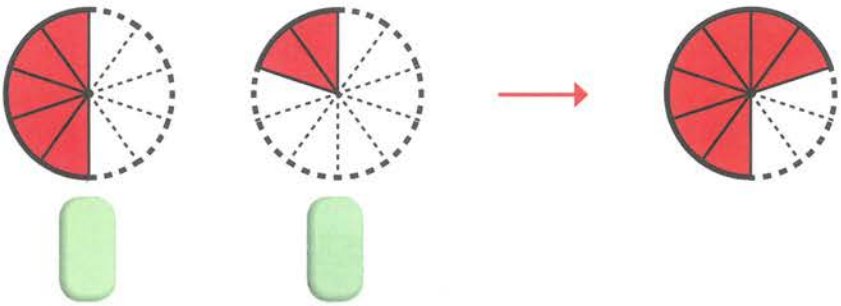
$\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$

They ate $\frac{3}{4}$ of the waffle altogether.

1 Eileen and Huifen bought a pizza.

Eileen ate $\frac{5}{10}$ of the pizza.

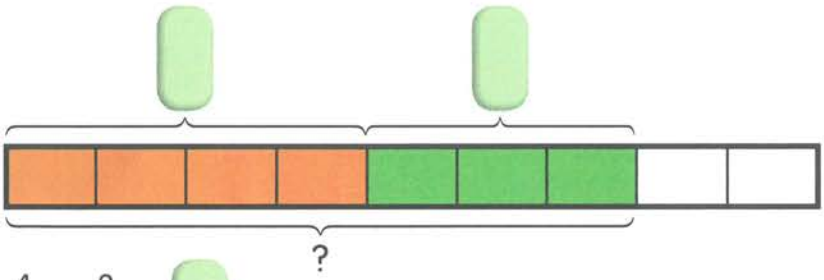
Huifen ate $\frac{2}{10}$ of the pizza.



$\frac{5}{10} + \frac{2}{10} =$ ☐

They ate ☐ of the pizza altogether.

2 Add $\frac{4}{9}$ and $\frac{3}{9}$.



$\frac{4}{9} + \frac{3}{9} =$ ☐

3 Add.

a $\frac{3}{7} + \frac{2}{7} =$ ☐ **b** $\frac{6}{11} + \frac{5}{11} =$ ☐ **c** $\frac{1}{12} + \frac{3}{12} =$ ☐

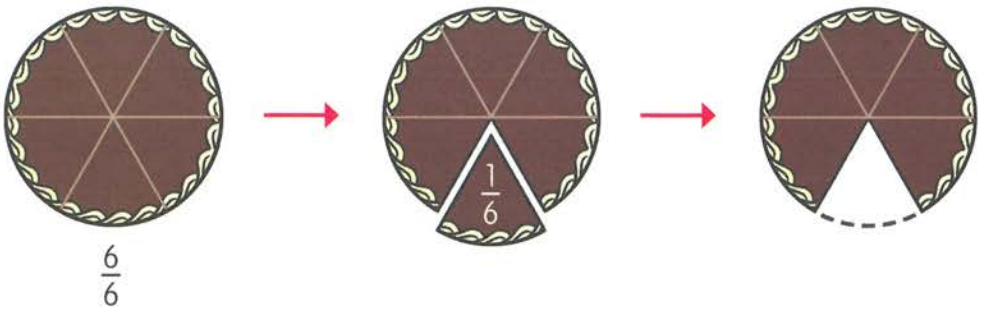
Learn Subtracting fractions

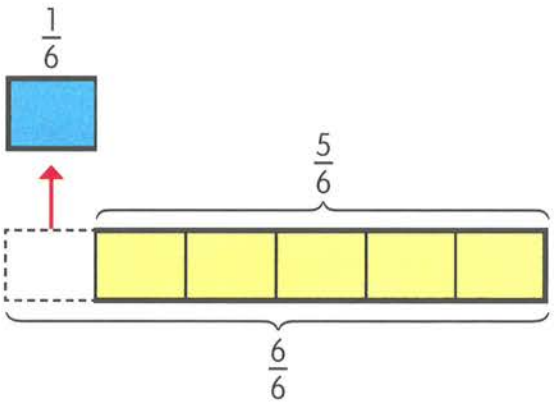
Take  for $\frac{1}{5}$ and $\frac{2}{5}$.

How do you subtract $\frac{1}{5}$ from $\frac{2}{5}$?

Salim bought a cake.

He gave $\frac{1}{6}$ of the cake to his mother.





6 sixths – 1 sixth = 5 sixths

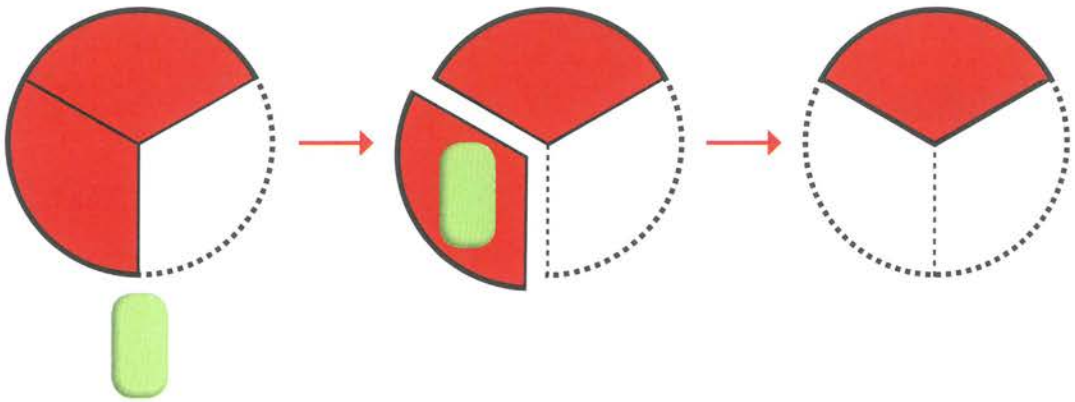
$\frac{6}{6} - \frac{1}{6} = \frac{5}{6}$

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

He had $\frac{5}{6}$ of the cake left.

4 Erin had $\frac{2}{3}$ of a pancake.

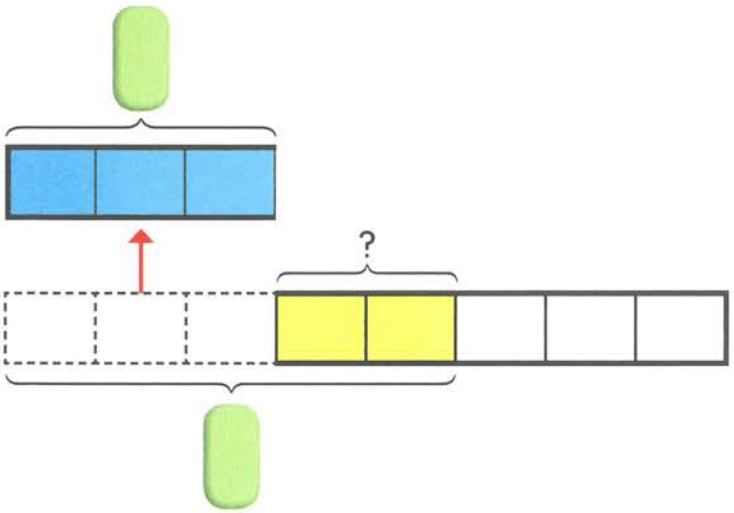
She ate $\frac{1}{3}$ of the pancake.



$\frac{2}{3} - \frac{1}{3} =$ ☐

Erin had ☐ of the pancake left.

5 Subtract $\frac{3}{8}$ from $\frac{5}{8}$.



$\frac{5}{8} - \frac{3}{8} =$ ☐

6 Subtract.

a $\frac{9}{10} - \frac{3}{10} =$ ☐

b $\frac{7}{11} - \frac{4}{11} =$ ☐

c $1 - \frac{7}{12} =$ ☐

Maths Sharing

1 Look at the picture.

Use fractions to tell a story to your friend.

2 Make an addition story and a subtraction story using fractions.

Use  to show the addition and subtraction of fractions.

Example

Bingxiang had $\frac{5}{8}$ of a cake.

He gave $\frac{2}{8}$ of the cake to Julie.

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

He had $\frac{3}{8}$ of the cake left.

Workbook B: Practice 4, pages 117–124

Chapter 14 Review

1 Which shape is divided into equal parts? ____

2 What fraction of each shape is **not** shaded?

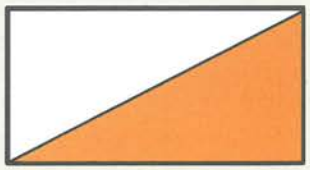
a

____

b

____

c



____

3 What fraction of each shape is shaded?

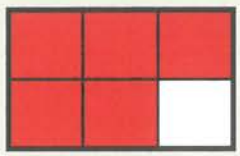
a

____

b

____

c



____

4 Arrange the fractions from smallest to greatest.

a $\frac{1}{8}, \frac{1}{10}, \frac{1}{5}$ ____, ____, ____ smallest

b $\frac{1}{12}, \frac{1}{3}, \frac{1}{9}$ ____, ____, ____ smallest

c $\frac{1}{2}, \frac{1}{4}, \frac{1}{7}$ ____, ____, ____ smallest

d $\frac{1}{6}, \frac{1}{12}, \frac{1}{11}$ ____, ____, ____ smallest

5 Add or subtract.

a $\frac{1}{6} + \frac{3}{6} =$ ☐

b $\frac{5}{8} + \frac{2}{8} =$ ☐

c $\frac{4}{9} + \frac{3}{9} =$ ☐

d $\frac{4}{5} - \frac{2}{5} =$ ☐

e $\frac{10}{11} - \frac{7}{11} =$ ☐

f $\frac{8}{12} - \frac{5}{12} =$ ☐

App-tivity
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Workbook B:
Maths Journal, page 125 and
Performance Task, page 126

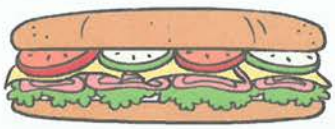
Put on Your Thinking Cap!

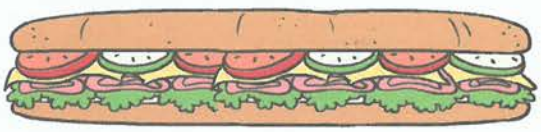
Mandy eats $\frac{1}{2}$ of Sandwich A.

Keisha eats $\frac{1}{2}$ of Sandwich B.

Who eats more?

Why?

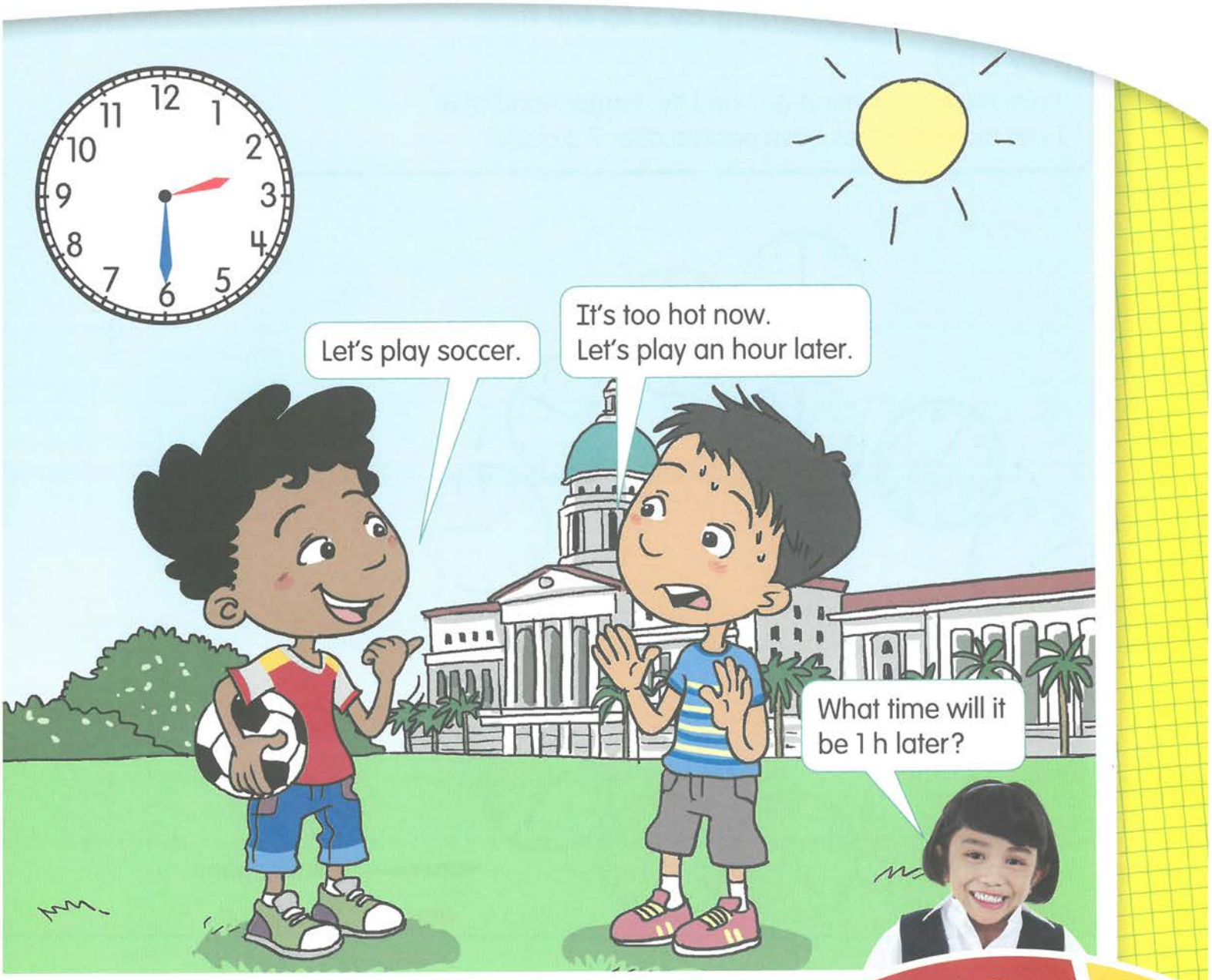
Sandwich A 

Sandwich B 

Workbook B: Put on Your
Thinking Cap!, pages 127–128
and Review 5, pages 129–136

CHAPTER 15

Time



Big Idea

The time of day can be shown in different ways.

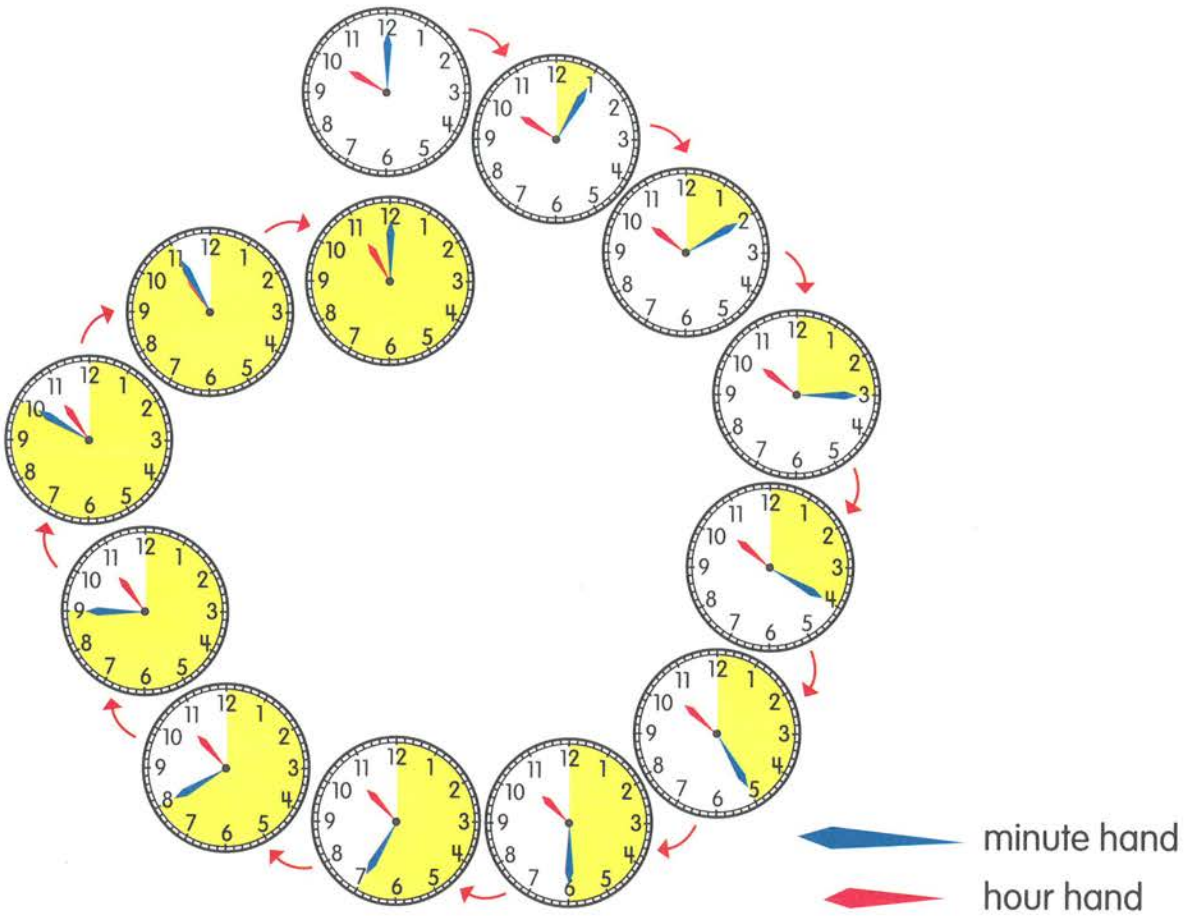
Lessons

Lesson 1

Reading and Writing Time

Learn Skip-counting by 5 to tell time

Take a  .
Point the shorter hand at 7 and the longer hand at 3.
How many minutes have passed after 7 o'clock?



There are 60 **minutes** in 1 **hour**.

The minute hand takes 60 minutes to move around the clock once.

The hour hand takes 1 hour to move from 10 to 11.

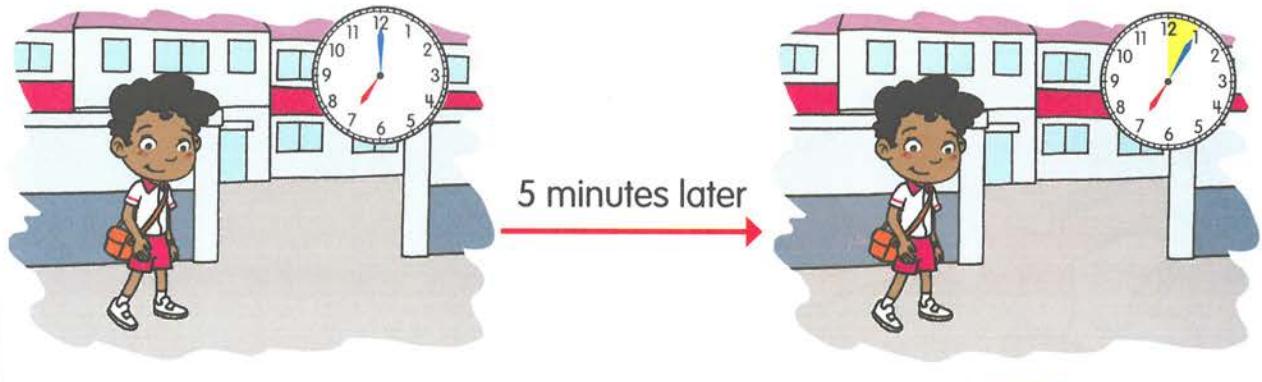
Jiaqi wakes up at six o'clock.
We write it as 6.00.

She brushes her teeth at
five minutes after six.
We write it as 6.05.

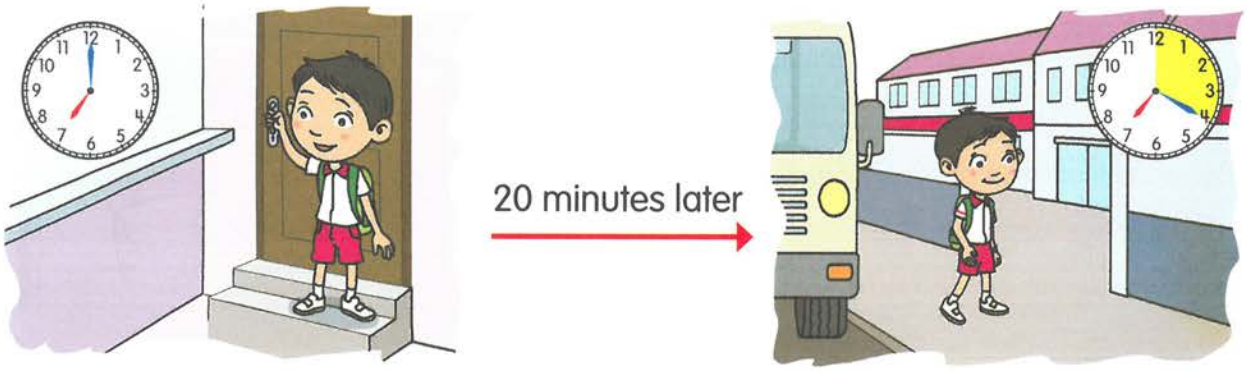
She gets dressed and has her
breakfast at fifteen minutes after six.
We write it as 6.15.

Her school bus comes at
thirty minutes after six.
We write it as 6.30.

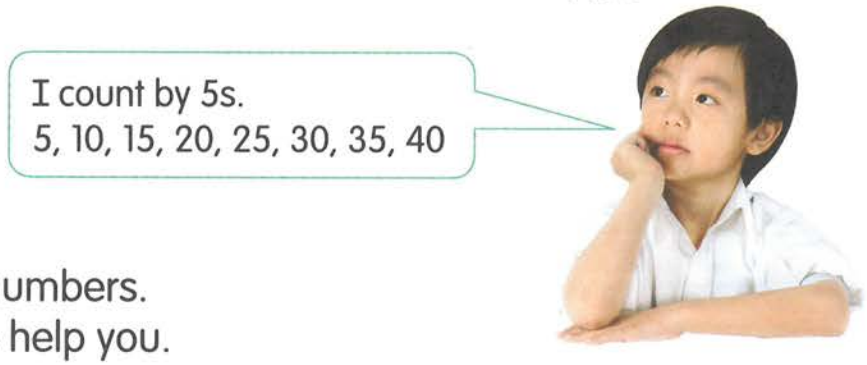
Krishnan and Alvin leave their house at 7 o'clock to go to school.



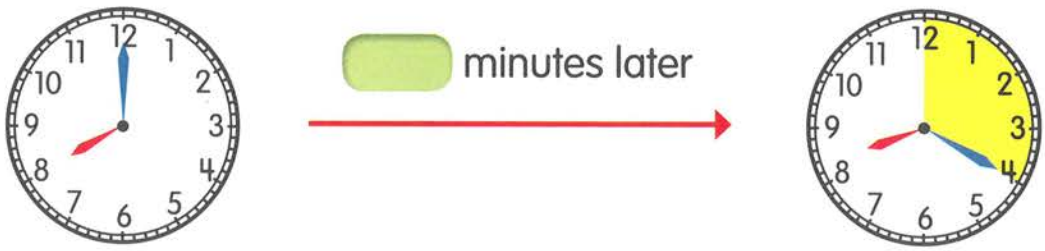
5 minutes **after** 7 o'clock
7.05



20 minutes after 7 o'clock
7.20



1 Find the missing numbers.
Skip-count by 5 to help you.



8 o'clock

minutes after 8 o'clock

2 Tell the time.

a 

b 

c 

d 

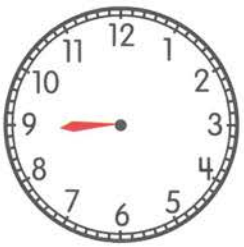
e 

f 

3 Draw the minute hand to show the time.

a 4.20

b 8.55



c 5.35

Hands-on Activity

Work in pairs.

1. Use  to show 3 o'clock to your partner.
2. Skip-count by 5 while the minute hand moves from one number to the next.
3. Get your partner to read the time.

   a 3.20 b 3.30 c 3.45 d 4.00

Example

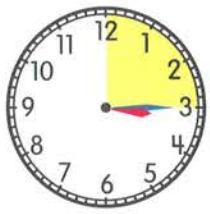
3.00

It is 3 o'clock.

3.05

5 minutes after 3 o'clock is 3.05.

3.15



15 minutes after 3 o'clock is 3.15.

What do you notice about skip-counting?

4. Tell your partner what you do at that time of the day in 3.

Workbook B: Practice 1, pages 137–140

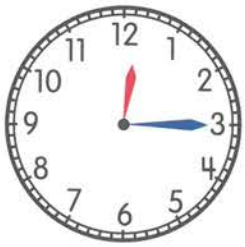
Lesson 2

Learning a.m. and p.m.

Learn Using the clock and events to tell if it is a.m. or p.m.

We have a Mathematics lesson at 8 o'clock in the morning.
Do we use a.m. or p.m. to show the time?

Krishnan is going for his piano lesson. The lesson starts at twelve fifteen in the afternoon or 12.15 **p.m.**



We use p.m. to talk about time just after noon to just before midnight.

He leaves the house for his lesson at eleven forty in the morning or 11.40 **a.m.**

We use a.m. to talk about time just after midnight to just before noon.

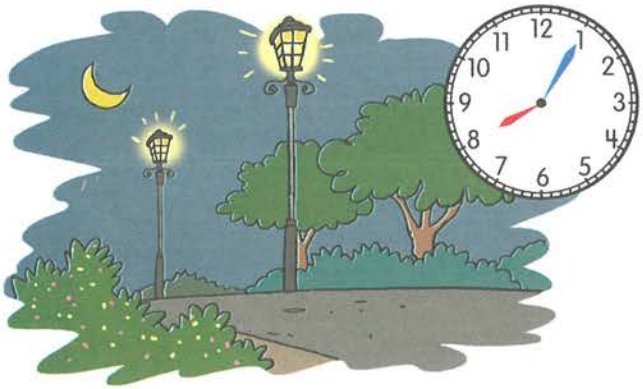
Why must he leave earlier than the time his piano lesson starts?

1 Use **a.m.** or **p.m.** to tell the time.

a It is 4 hours after midnight.
The time is 4.00 ____.

b It is 2 hours after noon.
The time is 2.00 ____.

2 Read the time shown on the clock. Use **a.m.** or **p.m.** to show the time of the day. Explain your answer.



The lights in the park come on at ____.

Maths Sharing

Choose a day of the week.
Using  , describe what you did at these times.

1 7.00 a.m. **2** 10.15 a.m. **3** 12.30 p.m. **4** 6.40 p.m.

Example
I watched a movie with my father at 7.30 p.m. yesterday.

Workbook B: Practice 2, pages 141–144

Lesson 3

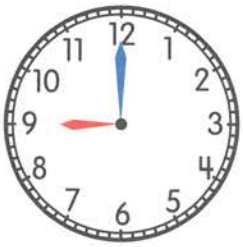
Time Taken in Hours and Minutes

Learn Using a clock to find how much time has passed

Use a  .
Show 4 o'clock.
What is the time 30 minutes after 4 o'clock?

The Mathematics lesson starts at 9.00 a.m. and ends at 10.00 a.m.

Start
9.00 a.m.



End
10.00 a.m.

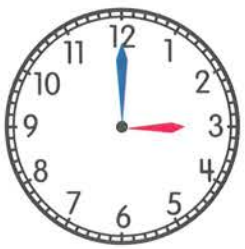
Lesson Time
1 h

10.00 a.m. is 1 h after 9.00 a.m.

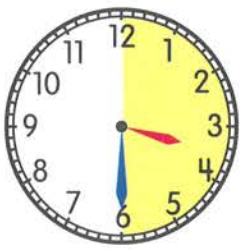
The hour is a unit of time.
We write **h** for **hour**.
We read 1 h as one hour.

Jan got on the school bus at 3.00 p.m. and reached home at 3.30 p.m.

Start
3.00 p.m.



End
3.30 p.m.



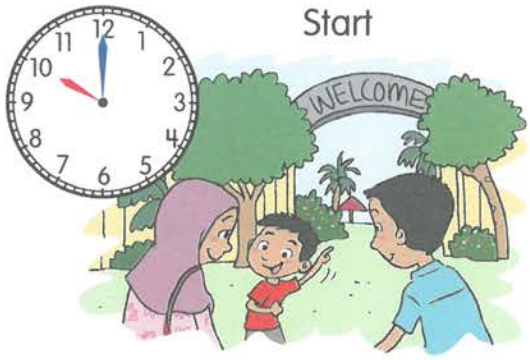
Travelling time
30 min

3.30 p.m. is 30 min after 3.00 p.m.

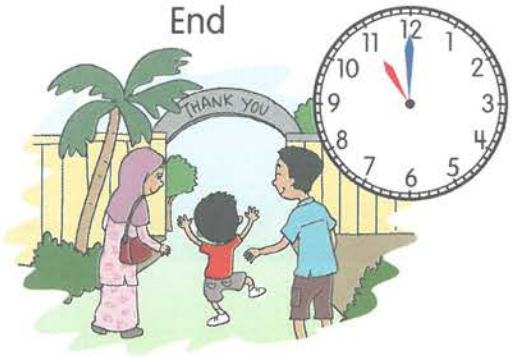
The minute is a unit of time.
We write **min** for **minutes**.
We read 30 min as thirty minutes.
30 min is the same as **half an hour**.

1 Faizal and his family arrived at the park at 10.00 a.m.

Start



End



They left the park at _____.

They spent _____ at the park.

_____ is 1 h after 10.00 a.m.

2 Sam took a nap at 5.00 p.m.
He woke up 30 minutes or half an hour later.

He woke up at _____.

_____ is 30 min or half an hour after 5.00 p.m.

3 Tell the time.

a 1 h after 8.00 p.m.
The time is _____.

b 30 min after 2.00 a.m.
The time is _____.

Hands-on Activity

Look at the programmes shown from 4.00 p.m. to 10.00 p.m.

Programme Schedule

WOOO Channel

4 October, Saturday

4.00 p.m.	Planet Z
4.30 p.m.	Road to Victory
5.30 p.m.	Kids Just Want to Have Fun
6.30 p.m.	Playhouse Wooo
7.00 p.m.	The Reporter
8.00 p.m.	Amazing Places
8.30 p.m.	Wooo Movies

1 Choose two programmes that are each half an hour long.

2 Choose two programmes that are each 1 hour long.

3 Show the programmes you have chosen.

Programme	Start	End

Maths Sharing

Work in pairs.
Share with your partner two events that last about 1 hour each and two events that last about half an hour each.

Example
The Mathematics lesson lasted half an hour.

Workbook B: Practice 3, pages 145–149

Chapter 15 Review

1 Tell the time.

a

b

c

d

2 Draw the minute hand to show the time.

a 9.45

b 3.20

c

It is  . 30 minutes after is  .

3 Use **a.m.** or **p.m.** to tell the time.

a

Mr and Mrs Smith went for a late-night movie at 11.50 ____.
They returned home at 1.30 ____.

b

Taufik went to the library 1 h after 12.00 noon.
The time was 1.00 ____.

Workbook B:
Maths Journal, page 150 and
Performance Task, pages 151–152

Put on Your Thinking Cap!

The clock shows half an hour after recess.
Recess ends at 10.00.
What is the time shown on the clock?
Use  to show the answer.

Workbook B: Put on Your Thinking Cap!
pages 153–154

CHAPTER 16

Picture Graphs

How many people are at each booth?

Besides using a picture, how can we show the data more easily?

Big Idea

Picture graphs use pictures to show data about things you can count.

Lesson

1 Reading Picture Graphs with Scales

Lesson 1

Reading Picture Graphs with Scales

Learn Using the key on a picture graph

How many of your classmates like English?
How many like Mother Tongue? How many like Mathematics?
How can you show this data using a picture graph?

Mrs Lim buys four types of fruits. She uses a picture graph to show the number of each type of fruit she has bought.

Types of Fruits

Strawberry	Pear	Apple	Banana
6	8	4	2

Each ● stands for 1 fruit.

1 ● stands for 1 fruit. So, we can read this picture graph by counting the ●.

Mrs Lim redraws the picture graph. Now, she uses 1 ● for 2 fruits.

Types of Fruits

Strawberry	Pear	Apple	Banana
3	4	2	1

Each ● stands for 2 fruits.

1 ● stands for 2 fruits.
So, we multiply the number of ● by 2 to get the number of fruits.

(a) There are 3 ● for strawberries.

$3 \times 2 = 6$

There are 6 strawberries.

(b) There is 1 more ● for pears than strawberries.

$1 \times 2 = 2$

There are 2 more pears than strawberries.

(c) There are 7 ● for strawberries and pears.

$7 \times 2 = 14$

There are 14 strawberries and pears altogether.

(d) Mrs Lim buys 4 pieces of this fruit.

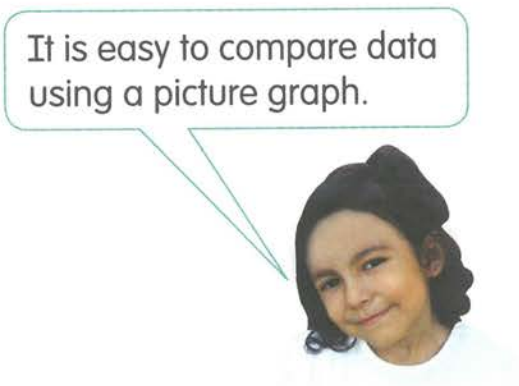
$4 \div 2 = 2$

There are 2 ● for this fruit.
She buys 4 apples.

(e) There are 2 fewer ● for apples than pears.

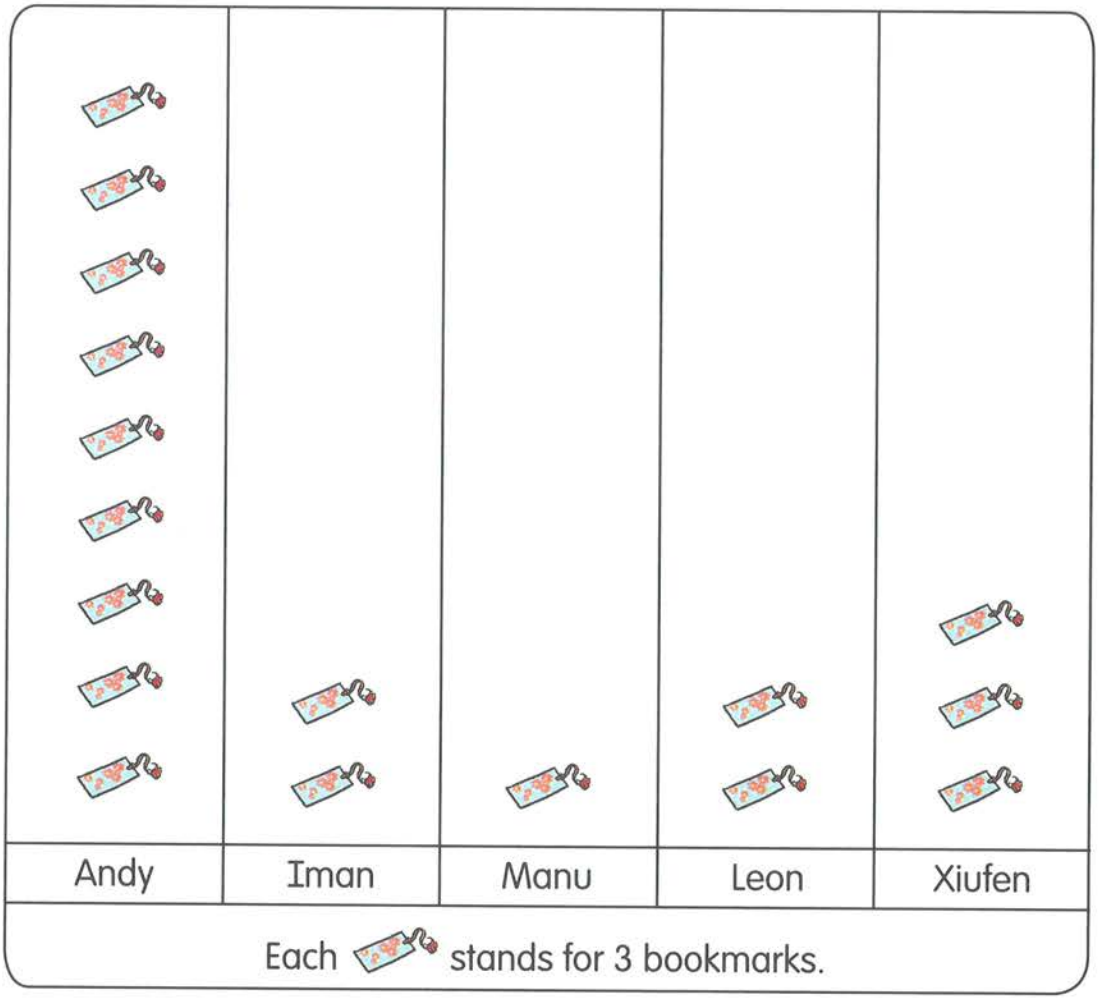
$2 \times 2 = 4$

Mrs Lim buys 4 fewer apples than pears.



The picture graph shows the number of bookmarks five children have.

Number of Bookmarks



a How many bookmarks does Andy have?

There are 9 for Andy.

$9 \times 3 = 27$

Andy has 27 bookmarks.

(b) How many bookmarks does Iman have?

There are 2  for Iman.

$2 \times 3 = 6$

Iman has 6 bookmarks.

(c) How many bookmarks does Xiufen have?

There are 3  for Xiufen.

$3 \times 3 = 9$

Xiufen has 9 bookmarks.

(d) How many more bookmarks does Leon have than Manu?

Leon has 1 more  than Manu.

$1 \times 3 = 3$

Leon has 3 more bookmarks than Manu.

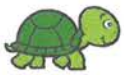
(e) Xiufen has 6 bookmarks from Mrs Tan.
The rest are from Mr Liu.
How many of Xiufen's bookmarks are from Mr Liu?

$9 - 6 = 3$

3 of Xiufen's bookmarks are from Mr Liu.

1 This picture graph shows the types of animals a pet shop has.

Types of Pets

Bird 	▲ ▲ ▲ ▲ ▲ ▲
Cat 	▲ ▲ ▲
Fish 	▲ ▲ ▲ ▲ ▲
Hamster 	▲
Rabbit 	▲ ▲ ▲ ▲
Turtle 	▲ ▲ ▲

Each ▲ stands for 4 animals.

a) The pet shop has _____ birds.

b) The pet shop has _____ cats.

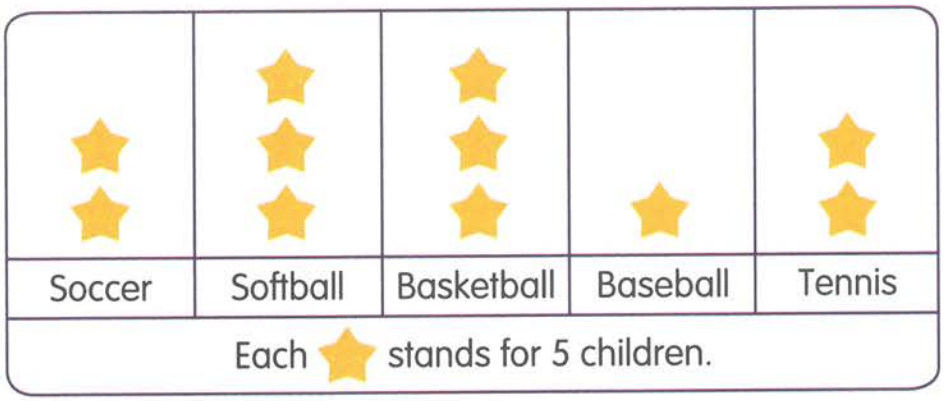
c) The pet shop has 20 _____.

d) There are _____ rabbits and turtles altogether.

e) The pet shop has _____ more birds than hamsters.

2 The picture graph shows the favourite sports of a group of children.

Types of Sports



a How many children like basketball?

There are ____ ★ for basketball.

____ × ____ = ____

____ children like basketball.

b How many children like softball and soccer altogether?

There are ____ ★ for softball and soccer altogether.

____ × ____ = ____

____ children like softball and soccer altogether.

c How many more children like tennis than baseball?

There is ____ more ★ for tennis than baseball.

____ × ____ = ____

____ more children like tennis than baseball.

Learn Making picture graphs to show the number of different items

Take a handful of , , and .
How can you make a picture graph to show the number of different items?

Mr Wee has a farm.
He counts each kind of animal on his farm.

He **records** the number of each kind of animals he has.

 Chicken	 Cow	 Duck	 Sheep	 Horse
10	2	12	6	4

Mr Wee draws a picture graph of his data.
He gives his graph a title.
He uses a ♥ to stand for 2 animals.

He has 5 types of animals.

He has 10 chickens.

$10 \div 2 = 5$

He draws 5 ♥ for chicken.

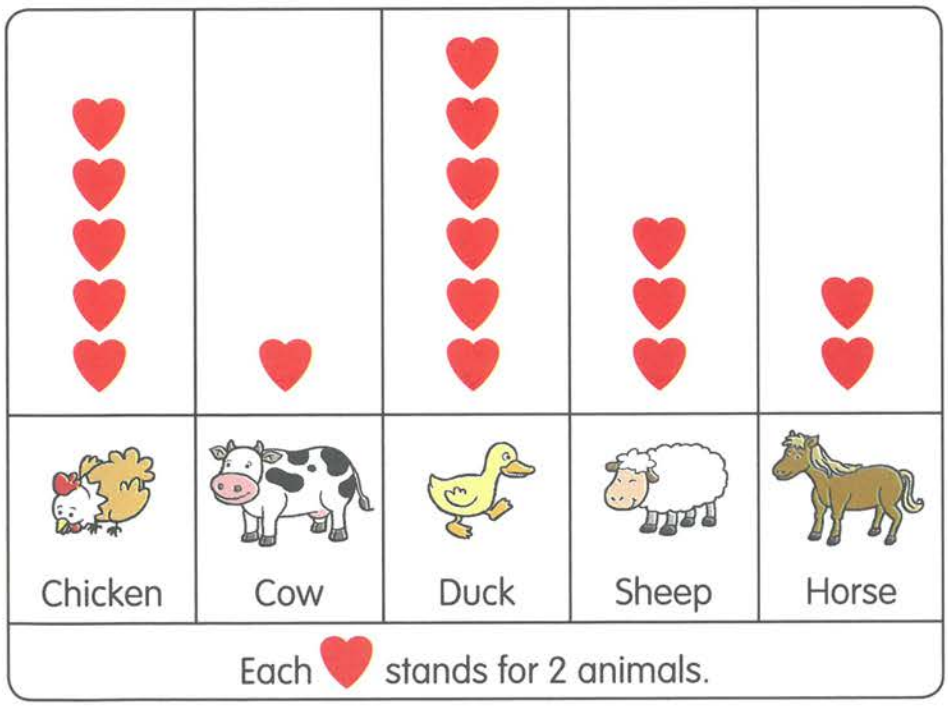
He has 2 cows.

$2 \div 2 = 1$

He draws 1 ♥ for cow.

He continues to find the number of ♥ for duck, sheep and horse.

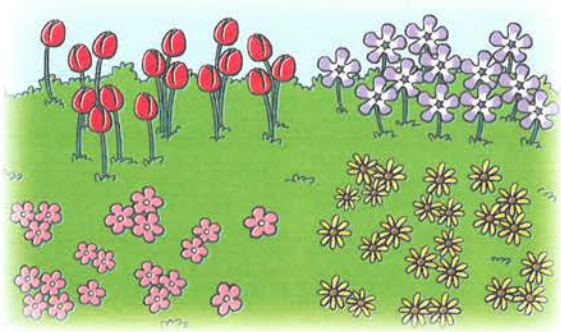
Types of Animals on Mr Wee's Farm



Hands-on Activity

Work in groups.

1. Find a picture from the Internet.
Example of a picture



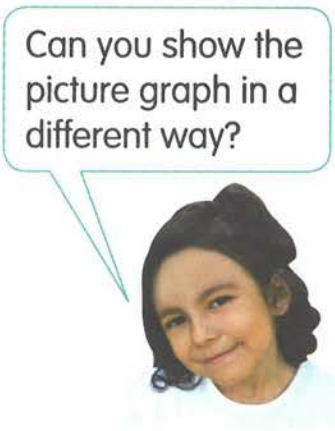
Count the flowers of each colour in the picture obtained from the Internet. Record your data.

Red	Yellow	Purple	Pink
16			

2. Use ▭ to make the picture graph.

Types of Flowers

Red	▭ ▭ ▭ ▭
Yellow	
Purple	
Pink	
Each ▭ stands for ▭ flowers.	



3. Make a story about the flowers using the information from the graph.

Maths Sharing

1 This picture graph shows the weather in April.

Weather in April

Rainy 	● ● ● ●
Sunny 	● ● ●
Cloudy 	● ● ●
Each ● stands for 3 days.	

Make a story about the picture graph.
You may use the following words:

as many ... as **more** **fewer**

2 Work in groups.
Collect data from your class to make a picture graph.

Example of data
Number of pupils who take the different types of transport to school

Workbook B: Practice 1, pages 155–161

Chapter 16 Review

1 The picture graph shows the farm animals that 24 children like.

Types of Farm Animals

Chicken 	☺
Cow 	☺
Duck 	☺ ☺ ☺
Horse 	☺
Sheep 	☺ ☺
Each ☺ stands for 3 children.	

a How many types of animals are there? _____

b How many children like cows? _____

c How many children like ducks? _____

d How many children like sheep? _____

e How many more children like chickens than horses? _____

2 The picture graph shows the number of bottles of drinks sold on Monday.
Every child bought 1 bottle of drink.

Bottles of Drinks Sold

Apple juice	
Grape juice	
Milk	
Orange juice	
Mineral water	
Each  stands for 4 bottles.	

(a) Which was the most popular drink? _____

(b) How many children bought apple juice? _____

(c) How many bottles of grape juice were sold? _____

(d) 16 girls bought grape juice.
How many boys bought grape juice? _____

(e) How many fewer bottles of mineral water than orange juice were sold? _____

(f) How many more bottles of orange juice than milk were sold? _____

Workbook B:
Maths Journal, page 162 and
Performance Task, page 163

Put on Your Thinking Cap!

The picture graph shows the fruits Uncle Tan had in his stall at the beginning of the day.

Solve. Use  to help you.

Types of Fruits

Apple	♦ ♦ ♦ ♦
Banana	♦ ♦
Pear	♦
Peach	♦ ♦ ♦ ♦ ♦ ♦
Orange	♦ ♦ ♦ ♦ ♦

Each ♦ stands for 10 fruits.

a 10 of the apples were sold in the afternoon.
How many apples did Uncle Tan have left?

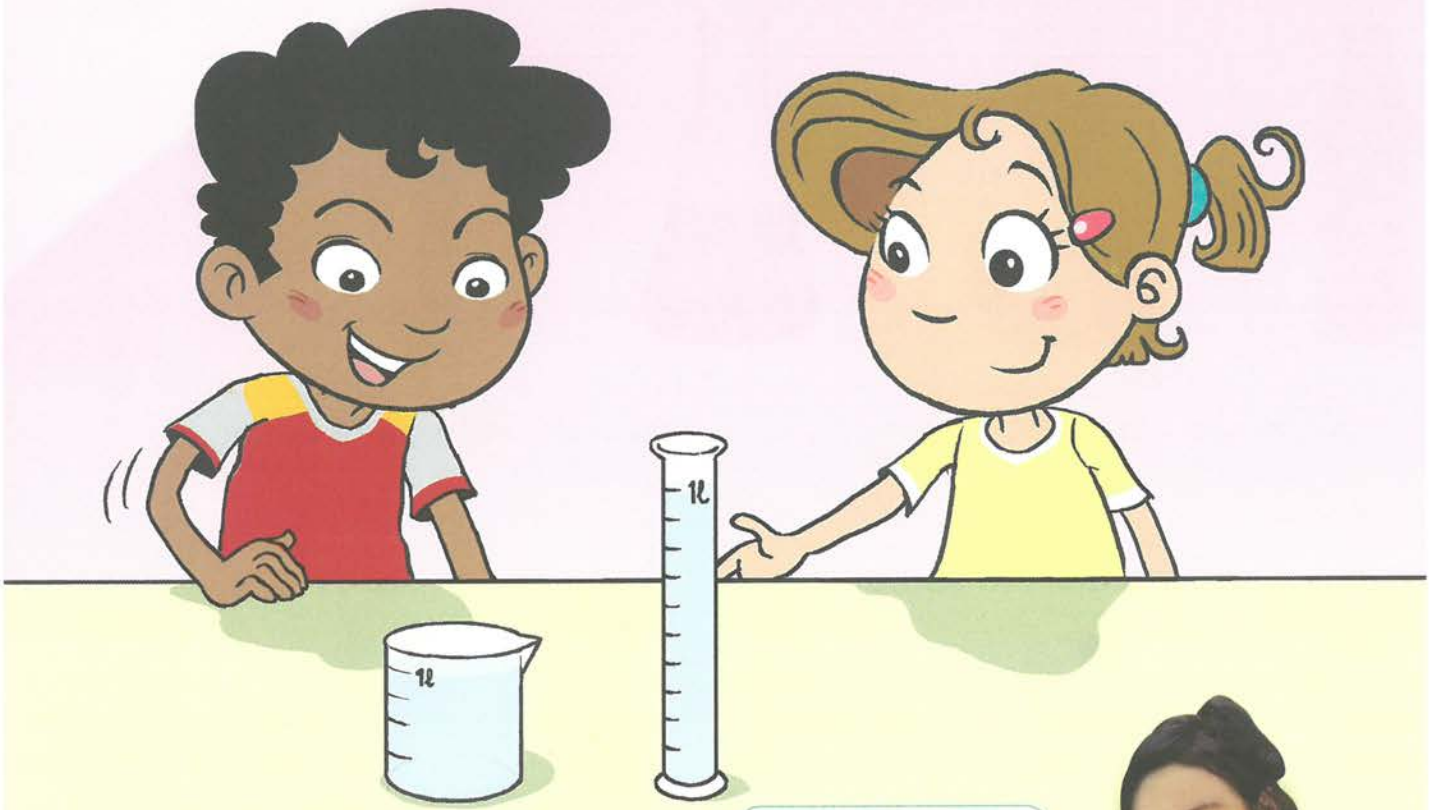
b How many peaches did Uncle Tan have to sell so that he had the same number of pears and peaches?

c How many oranges did he have to sell so that he had 10 more oranges than bananas?

Workbook B: Put on Your Thinking Cap! pages 164–166

CHAPTER 17

Volume



Which container has more water?

Lessons

1. Getting to Know Volume
2. Measuring in Litres
3. Addition and Subtraction of Volumes
4. Multiplication and Division of Volumes

Big Idea

Volume is the amount of liquid in a container. Litres can be used to measure volume.

Lesson 1

Getting to Know Volume

Learn Comparing volumes

Fill three different glass containers with water.
Which container has the greatest volume of water?

Each container has an amount of coloured water in it.




The amount of water in the container is called the **volume** of water.

Bottles A and B are of the same size.


Bottle A


Bottle B

Bottle A contains **as much** coloured water **as** Bottle B.

Bottles A and B contain the same amount of coloured water.

Bowls C, D and E are of the same size.

Bowl C

Bowl D

Bowl E

The amount of coloured water in Bowl C is **more than** the amount of coloured water in Bowl D.

The amount of coloured water in Bowl E is **less than** the amount of coloured water in Bowl D.

Bowl C has the **most** amount of coloured water. Bowl E has the **least** amount of coloured water.

1 Janet pours juice into four bottles that are of the same size.

Bottle A

Bottle B

Bottle C

Bottle D

a Did Janet pour the same amount of juice into each bottle? _____

b Which bottle contains the most amount of juice? _____

c Which bottle contains the least amount of juice? _____

d Bottle _____ contains less juice than Bottle D.

e The amount of juice in Bottle A is greater than the amount of juice in Bottles _____ and _____.

Hands-on Activity

Use five glasses that are of the same size.
Pour a different amount of liquid into each glass.

Example

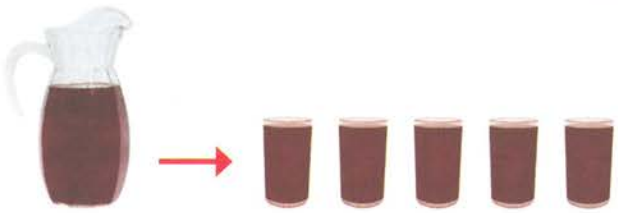
Arrange the glasses in order.
Begin with the glass that contains the least amount of liquid.

Learn Using containers to compare volumes

Take two small pails that have the same size.
Pour different amounts of water into them.
Which pail contains less water?

All the juice from Jugs A and B is poured into glasses of the same size.

Jug A



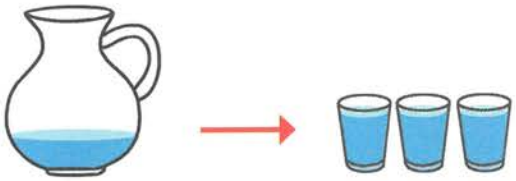
Jug B

Jug A contains less juice than Jug B.
Jug B contains more juice than Jug A.

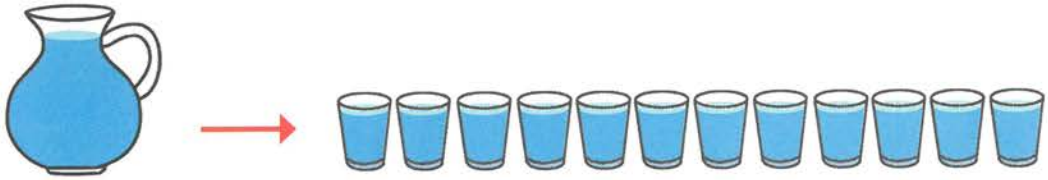
2 Norman fills glasses of the same size with all the water from Jugs A, B and C.

The jugs are of the same size.

Jug A



Jug B



Jug C

a Jug ____ contains the least amount of water.

b Jug ____ contains more water than Jug A.

c Jug ____ contains less water than Jug A.

d Jug ____ contains the most amount of water.

e Arrange the jugs in order.
Begin with the jug that contains the most amount of water.

____, ____, ____

most

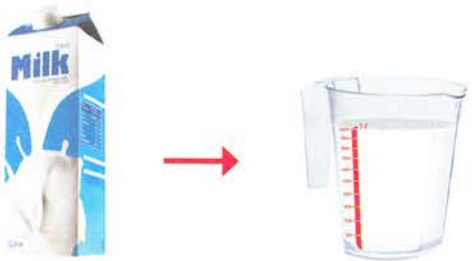
Workbook B: Practice 1, pages 167–170

Lesson 2

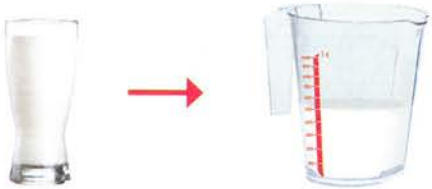
Measuring in Litres

Learn Using a litre of liquid to compare volumes

Take a 1-litre carton of milk.
Compare it with the water in your water bottle.
Does your water bottle contain more or less water than 1 litre of milk?



This measuring cup contains 1 **litre** of milk.



This measuring cup contains less than 1 litre of milk.

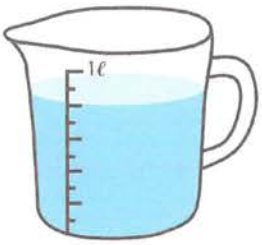
The litre is a unit of volume.
We write ℓ for litre.
We read 1 ℓ as one litre.
We use litres to measure a greater volume.

These are some containers that hold less than 1 ℓ of liquid.

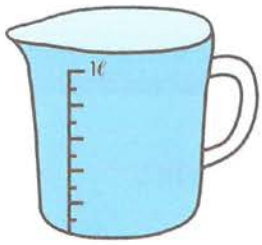
These are some containers that hold 1 ℓ of liquid.

These are some containers that hold more than 1 ℓ of liquid.

This is a 1-litre **measuring cup**. It contains 1 ℓ of water.



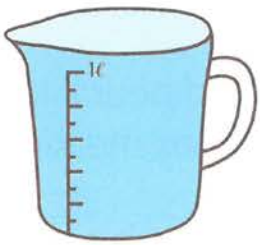
This measuring cup contains less than 1 ℓ of water.



This measuring cup contains more than 1 ℓ of water.

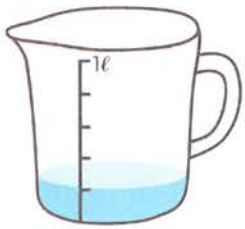
1 Use **more than** or **less than** to complete each sentence.

a



This measuring cup contains _____ 1 ℓ of water.

b



This measuring cup contains _____ 1 ℓ of water.

Maths Sharing

Bring a 1-litre container.

Fill it with 1 ℓ of water.

Form groups of three or four and look at the different 1-litre containers.

Share with your group members what you can say about the volumes and the shapes of the containers.

Hands-on Activity

Work in pairs.

1. Make 3 markings on a transparent pail.
   Fill a 1-litre container with coloured water.
   Pour the coloured water into the pail.

2. Guess how many litres of water are needed to reach marking A on the pail.

	My Guess	The volume is about
Marking A	About ____ ℓ	____ ℓ
Marking B	About ____ ℓ	____ ℓ
Marking C	About ____ ℓ	____ ℓ

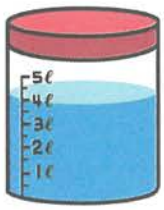
3. Fill the 1-litre container with coloured water and pour it into the pail.
   Repeat this step until the coloured water reaches marking A.
   Count the litres of water as you pour.

4. Record the actual volume.

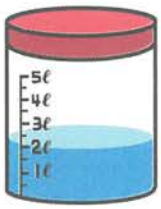
5. Repeat 1 to 4 for markings B and C.

Learn Measuring volumes

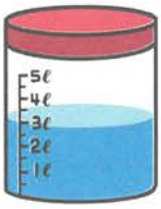
Fill a pot with some water.
How much water is there in the pot?



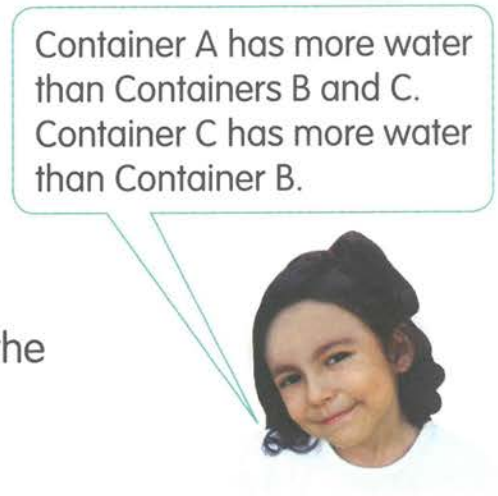
Container A
4 ℓ



Container B
2 ℓ



Container C
3 ℓ

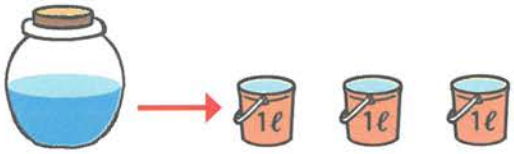


Arrange the containers from the greatest to the smallest volume.

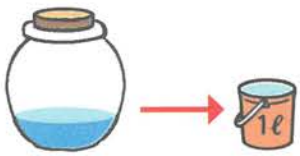
A, C, B

2

Container A



Container B



Container C

(a) Container B has _____ ℓ of water.

(b) Container C has _____ ℓ of water.

(c) Arrange the containers from the greatest to the smallest volume.

_____, _____, _____

greatest

Workbook B: Practice 2, pages 171–174

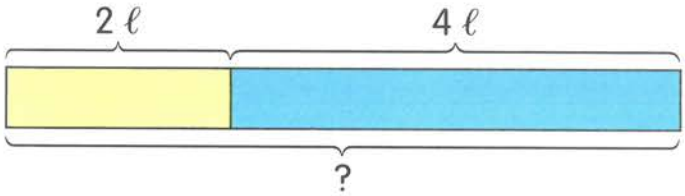
Lesson 3

Addition and Subtraction of Volumes

Learn Solving word problems involving addition and subtraction of volumes

Take a 1-litre carton of apple juice and a 1-litre carton of orange juice.
How much juice is there altogether?

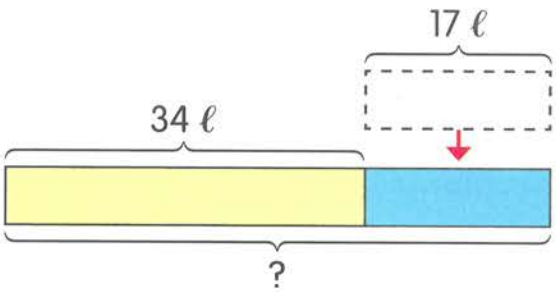
Raju's family drank two bottles of orange juice in a week.
One bottle had 2 ℓ of orange juice.
The other bottle had 4 ℓ of orange juice.
How much orange juice did Raju's family drink altogether?



2 + 4 = 6

Raju's family drank 6 ℓ of orange juice altogether.

1 A tank has 34 ℓ of water.
George pours 17 ℓ of water more into the tank.
How much water does the tank have now?



[ ] [ ] [ ] = [ ]

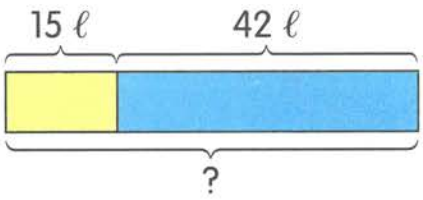
The tank has [ ] ℓ of water now.

2 Mr Gopal had 98 ℓ of milk on Sunday.
He sold 15 ℓ of milk to Mr Lim and 42 ℓ to Mr Lee.

a How many litres of milk did Mr Gopal sell altogether?

b How many litres of milk did Mr Gopal have left?

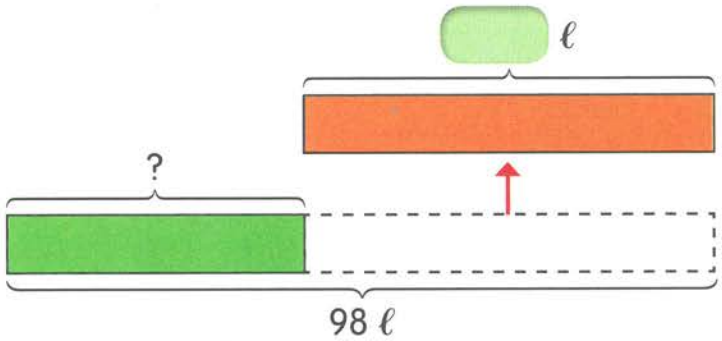
a



[ ] [ ] [ ] = [ ]

Mr Gopal sold [ ] ℓ of milk altogether.

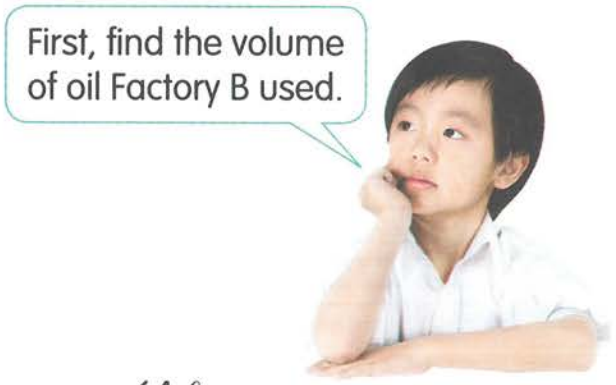
b

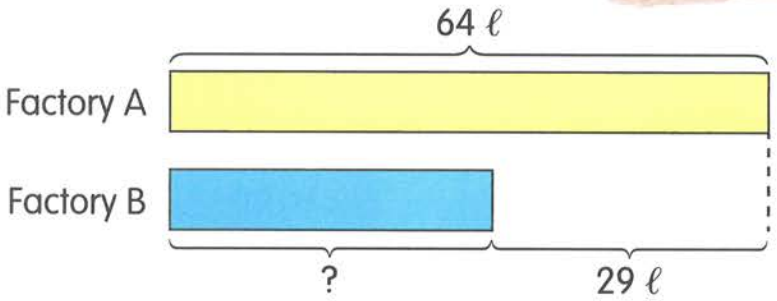


[ ] [ ] [ ] = [ ]

Mr Gopal had [ ] ℓ of milk left.

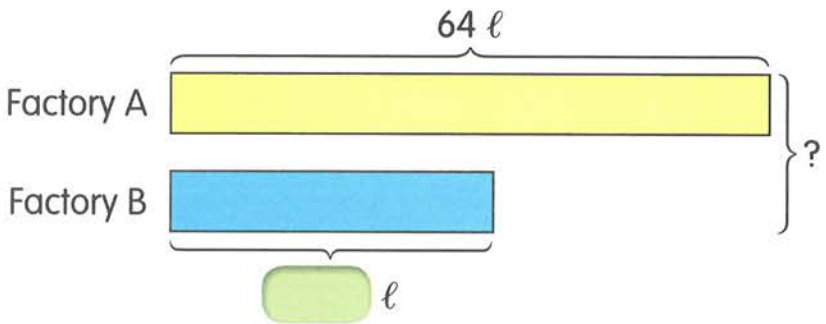
3 Factory A used 64 ℓ of oil in a week.
Factory B used 29 ℓ of oil less than Factory A.
How many litres of oil did they use altogether?





[ ] [ ] [ ] = [ ]

Factory B used [ ] ℓ of oil.



[ ] [ ] [ ] = [ ]

Factories A and B used [ ] ℓ of oil altogether.

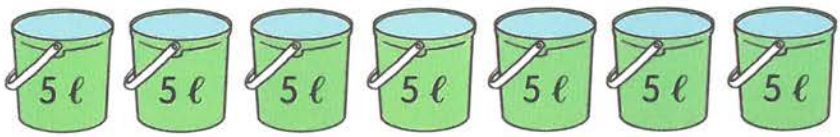
Workbook B: Practice 3, pages 175–178

Lesson 4 Multiplication and Division of Volumes

Learn Solving word problems involving multiplication and division of volumes

Take three 2-litre cartons of mango juice.
How much mango juice is there altogether?

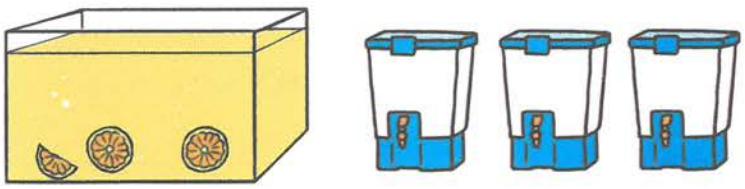
Priya's family uses 5 ℓ of water a day to water the plants.
How many litres of water does her family use in 7 days to water the plants?



$7 \times 5 = 35$

Her family uses 35 ℓ of water in 7 days to water the plants.

At a party, there are 18 ℓ of fruit punch.
Xiaoyan pours all the fruit punch equally into 3 containers.
How many litres of fruit punch are there in each container?



$18 \div 3 = 6$

There are 6 ℓ of fruit punch in each container.

1 Class A collected 9 pails of rainwater.
Each pail contained 3 ℓ of rainwater.
How many litres of rainwater did Class A collect?

Class A collected ____ ℓ of rainwater.

2 A painter bought some tins of paint.
Each tin contained 2 ℓ of paint.
He used 14 ℓ to paint a flat.
How many tins of paint did the painter use?

The painter used ____ tins of paint.

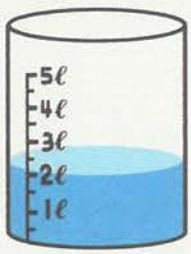
3 Amy drinks 4 ℓ of grape juice each week.
How many weeks does she take to drink 20 ℓ of grape juice?

Amy takes ____ weeks to drink 20 ℓ of grape juice.

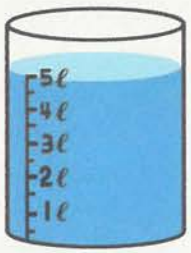
Workbook B:
Practice 4,
pages 179–180

Chapter 17 Review

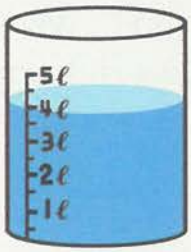
1 Look at the pictures.
Then, complete the sentences.



Container A



Container B



Container C

(a) Container A has ____ ℓ of water.

(b) Container B has ____ ℓ of water.

(c) Container C has ____ ℓ of water.

(d) Container ____ has more water than Container C.

(e) Arrange the containers from the greatest to the smallest volume.

____, ____, ____

greatest

2 On Saturday, the Tan family used 32 ℓ of water.
The Lim family used 28 ℓ of water on the same day.
How much more water did the Tan family use than the Lim family on Saturday? ____ ℓ

3 Peter had 80 ℓ of orange juice.
He sold 32 ℓ on Monday and 17 ℓ on Tuesday.
How much orange juice did Peter have left at the end of Tuesday? ____ ℓ

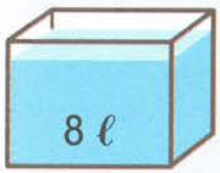
4 Dave has 3 fish tanks of the same size.
He needs to fill each tank with 9 ℓ of water.
How many litres of water does Dave need altogether?

5 Agnes had 16 ℓ of water to fill some vases.
She filled each vase with 4 ℓ of water.
How many vases did Agnes fill?

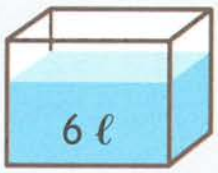
Workbook B:
Maths Journal, page 181 and
Performance Task, page 182

Put on Your Thinking Cap!

Tank X contains 8 ℓ of water.
A similar tank, Tank Y, contains 6 ℓ of water.
Jason pours more water into Tank Y until the volume in Tank Y is 1 ℓ more than the volume in Tank X.
How many litres of water does he pour into Tank Y?



Tank X



Tank Y

Workbook B: Put on Your Thinking Cap!, pages 183–184 and Revision 2, Pages 185–195

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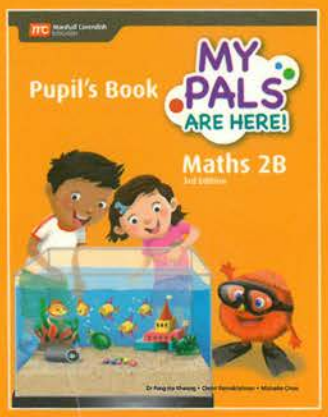

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