

# The centimetre

The short way to write centimetres is cm.  
There are 100 cm in 1 metre.

- 1 Make a metre strip using 1 cm dot paper.  
Use a coloured pencil to mark each 10 cm.
- 2 Using your metre strip find four objects in your classroom between 10 cm and 20 cm.  
Draw and name them.



*Students' answers will vary.*

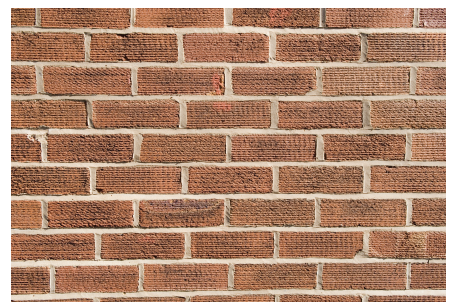
When you measure  
you need to start  
at 'zero'.

- 3 Estimate objects in your classroom that you think have the following lengths. Use your metre strip to find the actual length.

Length	Object	Actual
10 cm		
30 cm		
60 cm		
85 cm		
100 cm		

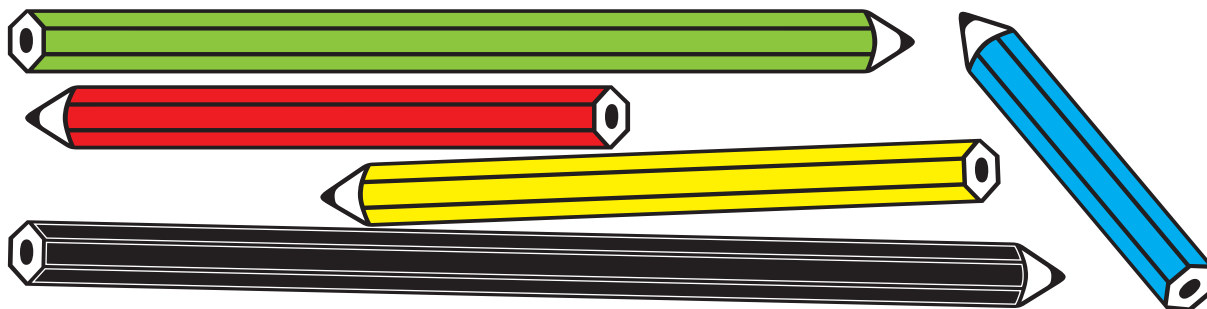
Look at the picture of the brick wall.  
If each brick is 20 cm wide and the gap between  
each brick is 5 cm, how wide is the wall?  
Hint: Choose a row with whole bricks.  
Show your working.

An Olympic swimming pool is 50 m long. How long  
is this in centimetres?



# Measure in centimetres

1 a Measure the length of each pencil in centimetres (cm).



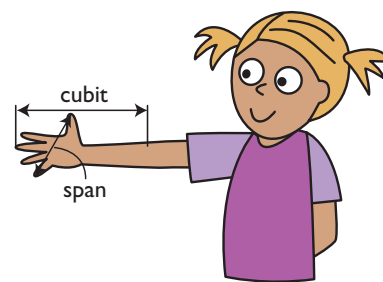
b What colour is the shortest pencil? blue  
 What length is the longest pencil? black

2 Measure the following body parts using your metre strip.

length of foot		distance around neck	
length of thumb		distance around wrist	
length of ear		distance around face	
length from knee to ankle		distance around ankle	

3 A cubit is the length from the elbow to the tip of your middle finger. A span is the length from the tip of your thumb to the tip of your little finger when your hand is outstretched. Measure the length of your cubit and span in centimetres. Repeat those measurements for 4 of your friends. *Students' answers will vary.*

Name	Cubit length (cm)	Span length (cm)



Who has the longest cubit? \_\_\_\_\_  
 Who has the shortest cubit? \_\_\_\_\_  
 Who has the longest span? \_\_\_\_\_  
 Who has the shortest span? \_\_\_\_\_

Did you know that your span is the same length as the distance from your elbow to your wrist?



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# Metres and centimetres

1 Would you use metres (m) or centimetres (cm) to measure each of the following lengths?



m



cm



cm



m



m



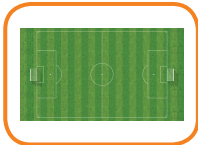
cm



m



cm



m



cm



cm



m

2 Find a partner. Using both your metre strips, find objects in your classroom between 1 and 2 metres in length. Record lengths in the table. *Students' answers will vary.*

Object	Measurement
length of teacher's desk	1 m 20 cm

3 Convert the following from centimetres to metre and centimetres.

130 cm = 1 m 30 cm    186 cm = 1 m 86 cm    215 cm = 2 m 15 cm

240 cm = 2 m 40 cm    362 cm = 3 m 62 cm    405 cm = 4 m 5 cm

4 Look at the picture of the giraffe at the zoo. Choose answers from the boxes to represent the possible lengths of different things in the picture.

	90 cm	200 cm	4 m 30 cm	20 cm	2 m 50 cm
height of girl				90cm	
height of giraffe			4m 30cm		
height of fence			2m 50cm		
length of giraffe's leg		200cm			
length of girl's hair		20cm			

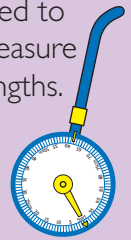


# Measure in metres and centimetres

- 1 Estimate, then measure the following lengths or distances in metres and centimetres using a tape measure or trundle wheel. Make up three more of your own. *Students' answers will vary.*

	Estimate	Measurement
height of teacher	1 m 70 cm	1 m 68 cm
length of chalkboard		
height of door		
distance across classroom		
your height		

A trundle wheel is an instrument used to measure lengths.



What are the advantages and disadvantages of using a trundle wheel instead of a tape measure?

How could you measure the distance around a bicycle wheel?

- 2 The following lengths were recorded in the long jump competition.

- a Complete the table.  
b List the athletes in order from their longest jumps to shortest jumps.

Athlete	cm	m and cm
Mike	895 cm	8m 95cm
Victor	834cm	8 m 34 cm
Andrew	847 cm	8m 47cm
Jai	849 cm	8m 49cm
Gregor	840cm	8 m 40 cm
Robert	886cm	8 m 86 cm



Mike, Robert, Jai, Andrew, Gregor, Victor

- 3 This boy is 1 m tall. Estimate approximately how tall each of the objects around him are.



boy = 1 m



bike = 50cm



tree = 2m



man = 1 m 70cm

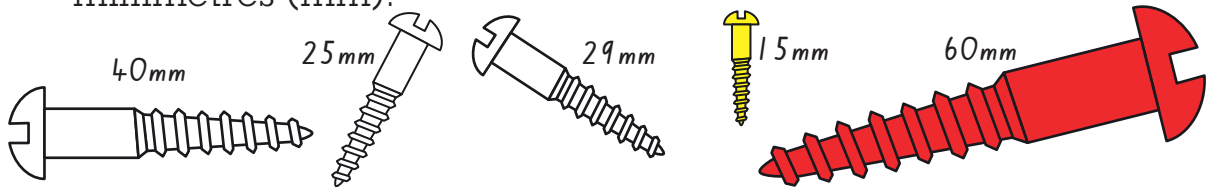
# The millimetre

- 1** Find 4 objects in your classroom of length between 50 mm and 100 mm. Draw and name them.

The short way to write millimetres is mm. There are 10 mm in 1 centimetre.

*Students' answers will vary.*

- 2** **a** Using a ruler measure the length of each screw in millimetres (mm).



- b** Colour the longest screw red and the shortest screw yellow. What is the difference in their lengths? 45 mm

- 3** **a** Janis collected stamps from around the world. Estimate the length of each stamp in millimetres and then use your ruler to measure them.



Estimate \_\_\_\_\_

Estimate \_\_\_\_\_

Estimate \_\_\_\_\_

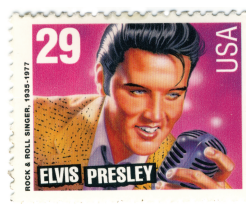
Length 35 mm

Length 20 mm

Length 52 mm



Estimate \_\_\_\_\_



Estimate \_\_\_\_\_

Length 31 mm

Length 32 mm

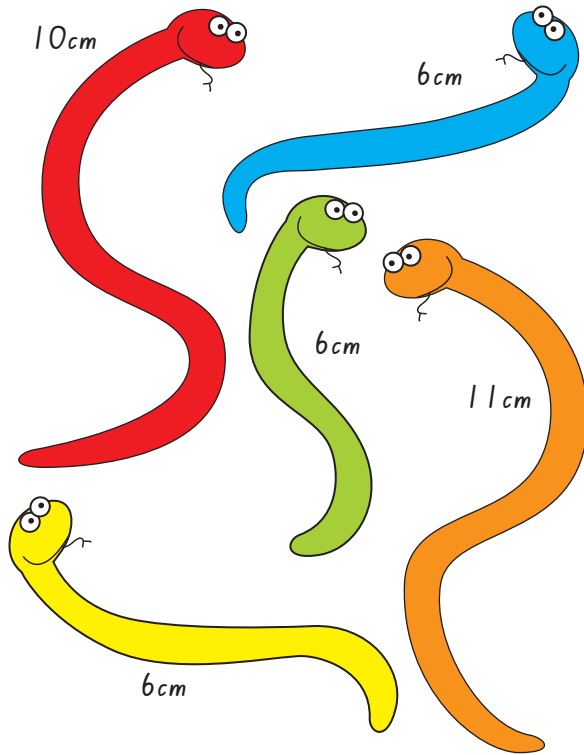
- b** Order them from shortest to longest (using the country name).

Greece, India, USA, Australia, China

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# Measure in millimetres

1 Last week in the Tanami Desert, Claire came across these five snakes. Estimate the length of each snake in millimetres and then use a piece of string to help you measure each of their lengths.



	Estimate	Measure
snake A <i>Blue</i>		60mm
snake B <i>Red</i>		100mm
snake C <i>Green</i>		60mm
snake D <i>Orange</i>		110mm
snake E <i>Yellow</i>		60mm

2 Would you use centimetres (cm) or millimetres (mm) to measure each of the following lengths? The first one has been done for you.



Width of match	Width of diamond	Length of popstick	Thickness of glasses	Length of tooth	Length of finger
mm	mm	cm	mm	mm	cm

Since 1 cm = 10 mm and 100 cm = 1 m, how many mm are there in 1 m?

$$1000\text{mm} = 1\text{m}$$

MiB 2  
Card  
101

# Centimetres and millimetres

Length can be measured in centimetres and millimetres, e.g. 4 cm and 2 mm = 42 mm.

1 Fill in the missing information.

- a 1 cm and 5 mm = 15 mm      b 3 cm and 6 mm = 36 mm  
 c 2 cm and 5 mm = 25 mm      d 4 cm and 9 mm = 49 mm  
 e 12 cm and 8 mm = 128 mm      f 11 cm and 3 mm = 133 mm

2

- a Collect a range of Australian notes.  
 b Measure the length of each note using cm and mm and convert your measurement into mm.

Note	cm and mm	mm
\$5	13 cm 0 mm	130 mm
\$10	13 cm 7 mm	137 mm
\$20	14 cm 4 mm	144 mm
\$50	15 cm 1 mm	151 mm
\$100	15 cm 8 mm	158 mm



- c What can you say about the value of a note compared to its length? The greater the value of a note, the longer  
its length.

3

Use a ruler to draw lines of these lengths.

a 70 mm

b 4 cm and 5 mm

c 8 cm and 2 mm

MIB 2  
Card  
100

# Convert units

Remember that there are 10 mm in 1 cm.

1 Convert from centimetres (cm) to millimetres (mm).

a  $2 \text{ cm} = \underline{20} \text{ mm}$

b  $5 \text{ cm} = \underline{50} \text{ mm}$

c  $8 \text{ cm} = \underline{80} \text{ mm}$

d  $12 \text{ cm} = \underline{120} \text{ mm}$

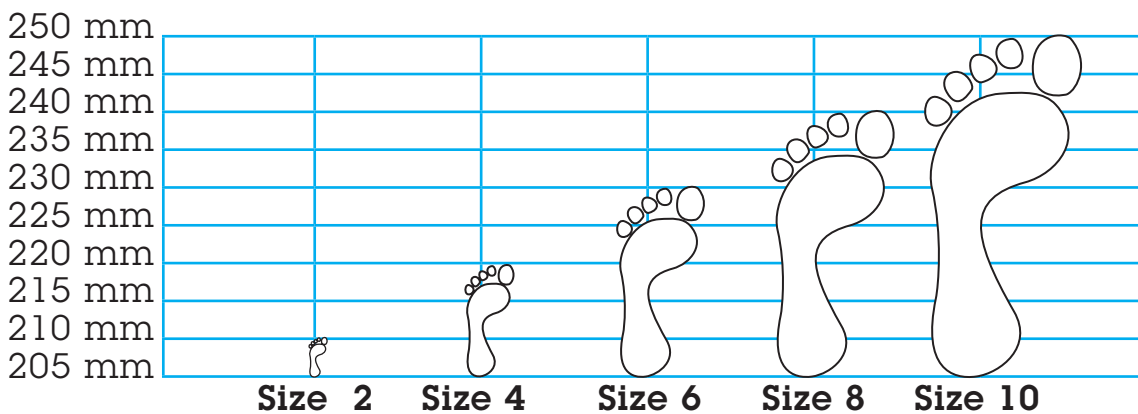
e  $23 \text{ cm} = \underline{230} \text{ mm}$

f  $40 \text{ cm} = \underline{400} \text{ mm}$

g Car tyres are about 18 cm wide, but tyres on Formula One racing cars are about 35 cm wide. How many millimetres wide are Formula One tyres?

350mm

2 Use the graph and clues to work out what size shoe fits each child.



### Clues

a Karen's foot is 220 mm long.

b David's foot is 23 cm long.

c Julie's foot is 1 cm longer than 200 mm.

d Penny's foot is the longest.

e Mike's foot is 10 mm shorter than Penny's.

Karen = size 4

David = size 6

Julie = size 10

Penny = size 10

Mike = size 8

3 Sue, Jeff and Chris measured the width of their classroom using their shoes. They constructed the table shown.

a Who has the longest foot? Chris

Sue	Jeff	Chris
27 shoes	25 shoes	23 shoes

b Who has the shortest foot? Sue

c Explain the reason for your answer. bigger foot, fewer shoes

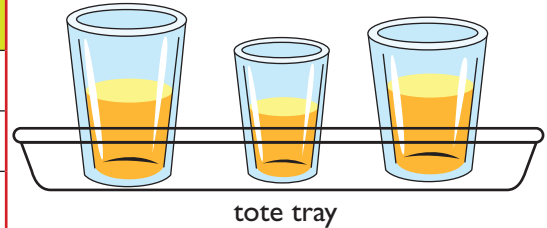


# Informal units of capacity

- 1 Estimate and then measure the capacity of a tote tray using different-sized cups. How many cups of water does it take to fill the tote tray? *Students' answers will vary.*

Capacity means how much something holds.

	Estimate	Measure
cup 1		
cup 2		
cup 3		



- a Why is the total number of cups different for each container?  
\_\_\_\_\_
- b What is the disadvantage of measuring with different units?  
\_\_\_\_\_
- c How could you get results that were all the same?  
\_\_\_\_\_

What can make measuring capacity difficult?

- 2 Find everyday containers that have labels on them. Draw containers that use litres and write down the number of litres they hold.

Capacity can be measured in litres. The short way to write litres is L.

When you have a glass of water and drink half of it, is your glass half-empty or half-full?

# The litre

- 1 Use a 1 litre (1 L) container to estimate and measure the capacity of each container.



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Container	Estimate	Measure
Ice-cream container		
Bucket		
Sink		
Bowl		

Order the containers from smallest to largest in terms of their capacity.

*Ice-cream container, bowl, bucket, sink*

- 2 The capacity of this large red container is 50 litres (50 L). How many of each smaller container is needed to fill the red container?



<b>Capacity</b>	1 L	5 L	10 L	$\frac{1}{2}$ L
<b>Number needed</b>	50	10	5	100

- 3 Solve these problems.

- a Mum's car holds 45 L of petrol and Dad's holds 60 L. How many litres of petrol are needed to fill both cars?

105L

- b I filled my bath with 55 L of water. I let out 28 L. How much water is left in the bath?

27L

What costs more: a litre of milk, a litre of petrol or a litre of orange juice?  
(You may need to do some investigating first.)

*Students' answers will vary.*

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# Using litres

- 1 Find and list containers that are less than 1 L, about 1 L or more than 1 L in capacity. *Students' answers will vary.*

Less than 1 L	About 1 L	More than 1 L

- 2 a What is a water meter used for?

*Water usage*

Most water used by people in cities is used in and around the home.

- b At your home, where is the water meter? \_\_\_\_\_

- 3 Order these activities from 1 to 4, using least water to using most water.

\_\_\_\_\_ 2 \_\_\_\_\_ Cleaning your teeth      \_\_\_\_\_ 3 \_\_\_\_\_ Washing the dishes  
 \_\_\_\_\_ 4 \_\_\_\_\_ Having a bath                      \_\_\_\_\_ 1 \_\_\_\_\_ Drinking a glass of water

- 4 When a toilet is flushed, about 8 litres (8 L) of water is used. A typical shower uses 160 litres (160 L) of water.

a How much water is used in 2 flushes? \_\_\_\_\_ *16L*

b How much water is used in 10 flushes? \_\_\_\_\_ *80L*

c How much water is used in 2 showers? \_\_\_\_\_ *320L*

d Do you use more water having 3 showers or flushing the toilet 60 times? Show all your working.

*Shower = 160 × 3 = 480L*

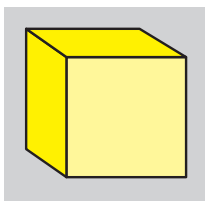
*Toilet = 60 × 8 = 480L They are the same*



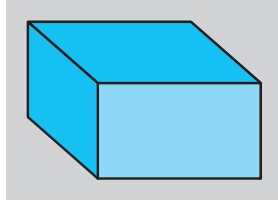
Discuss ways you can help save water in your home and around the school.

# Measure volume in informal units

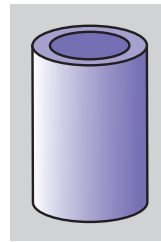
1 a Name the 3D objects.



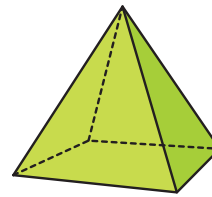
cube



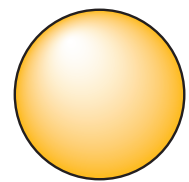
rectangular prism



cylinder



pyramid



sphere

b Colour the 3D objects which stack well on top of each other.

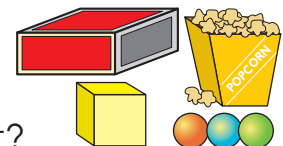
c Which of these 3D objects placed side by side would completely cover the base of a large empty box without leaving spaces?

Cube, rectangular prism, pyramid

2 Estimate and then measure the volume of a matchbox using popcorn, Centicubes and marbles.

	Estimate	Measure
popcorn		
centicubes		
marbles		

Volume means the amount of space an object takes up.



a Why is the total number different for each unit?

The units have different volumes

b What is the disadvantage of measuring with different units?

You may get different results

c Which unit was best for measuring the volume of the matchbox? Centicubes Explain your answer. \_\_\_\_\_

The cubes fit into the matchbox without leaving any space

When companies package their products, which 3D objects are generally used? Why do they use these kinds of packaging?

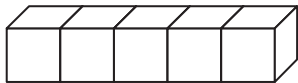
Take 2 sheets of A4 paper: Roll one into a short cylinder and one into a tall cylinder. Does one hold more popcorn than the other?

# The cubic centimetre

Volume can be measured in cubic centimetres. The short way to write cubic centimetres is  $\text{cm}^3$ .  $5 \text{ cm}^3$  is read as 'five cubic centimetres'.

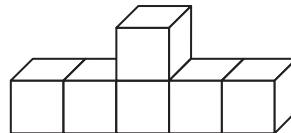
- 1** Make these models and record their volume. Each cube is 1 cubic centimetre ( $\text{cm}^3$ ).

**a**



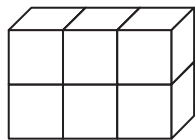
Volume = 5  $\text{cm}^3$

**b**



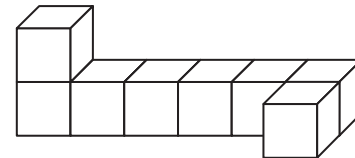
Volume = 6  $\text{cm}^3$

**c**



Volume = 6  $\text{cm}^3$

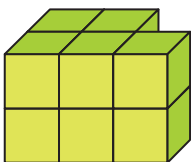
**d**



Volume = 8  $\text{cm}^3$

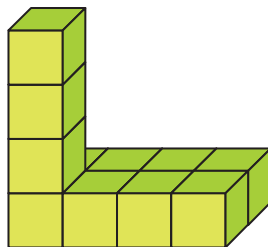
- 2** Make these models and record their volumes. Make sure you count the cubes you cannot see.

**a**



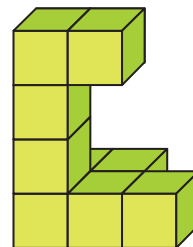
Volume = 10  $\text{cm}^3$

**b**



Volume = 11  $\text{cm}^3$

**c**



Volume = 9  $\text{cm}^3$

**d** Which model has the smallest volume? a

**e** Which model has the largest volume? b

# Volume of prisms

- 1 Collect the following packets. Estimate, and then measure their volume. Estimate and measure two more of your own. Don't forget to include the units. How many Centicubes or Base 10 shorts will fit into each one? *Students' answers will vary.*

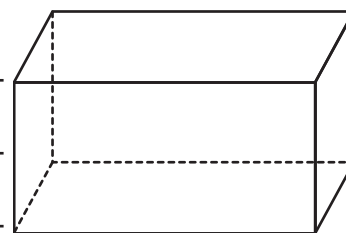
Object	Estimate	Measurement
matchbox		
chalk box		
lunch container		

- 2 This box fits 8 Centicubes on the bottom layer.

a How many would it fit on 2 layers? 16

b How did you work out your answer? \_\_\_\_\_

$$8 \times 2 = 16$$



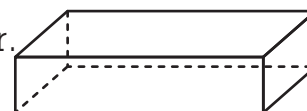
c If this box is 3 layers high what is its volume?

$$24 \text{ cm}^3$$

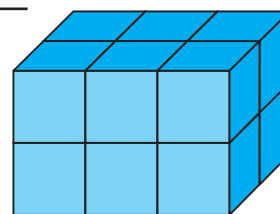
- 3 This box can fit 15 Centicubes on the bottom layer.

If it is 2 layers high, what is the volume?

$$V = 30 \text{ cm}^3$$



- 4 This object has a volume of  $12 \text{ cm}^3$ . Make another object with a volume of  $12 \text{ cm}^3$  also in the shape of a prism. How does it look? Draw or describe it.

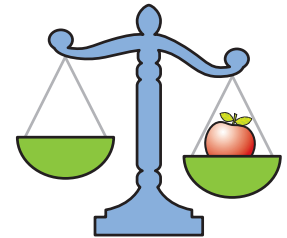


*Students' answers will vary.*

# Informal units of mass

- 1 Estimate the mass of an apple using stones, marbles and Base 10 shorts as your unit. Use an equal arm balance to measure the mass of the apple using the same materials. *Students' answers will vary.*

Unit	Estimate	Measure
stones		
marbles		
Base 10		



- a Was the total number different for each unit of measurement? \_\_\_\_
- b What is the disadvantage of measuring with different units?  
 \_\_\_\_\_  
 \_\_\_\_\_
- c How could you get results that were all the same?  
 \_\_\_\_\_

- 2 Andrew measured the mass of a bag of rice on an equal-arm balance using marbles. He recorded the measurements in this table.

Fill in the missing words to make these sentences correct.

- a The green marbles are heavier than the red marbles.
- b The green marbles are lighter than the blue marbles.

Unit	Measure
red marbles	24
blue marbles	12
green marbles	18

Did you notice that the heavier the measuring unit, the less you need to use to balance the object?

- 3 Zachary measured the mass of his two kittens. The ginger one had a mass of 40 tennis balls and the grey one had a mass of 25 golf balls.

Do you know which kitten was heavier? Grey  
 Explain your answer. The golf balls are heavier than tennis balls even though there are fewer of them.



# The kilogram

- 1 Using a 1 kg mass, find objects that are 'less than', 'about the same as' or 'more than one kilogram' by hefting.

The mass of an object can be measured in kilograms. The short way to write kilogram is kg.

Less than 1 kg	About the same as 1 kg	More than 1 kg
<i>Students' answers will vary.</i>		

**Hefting** is a useful method to compare the mass of two objects.

Place a 1 kg mass in one of your hands and an object in the other hand.

Lift both masses at the same time to estimate which one is heavier.

When travelling on a plane, there are weight restrictions on your luggage. Why? What is the baggage limit on domestic and international flights?

- 2
- a Estimate and then measure the mass of each of the following objects in kilograms using an equal-arm balance.
- b Choose two more of your own.
- c Calculate the difference between your estimate and the actual mass.

What are some of the advantages and disadvantages of hefting?

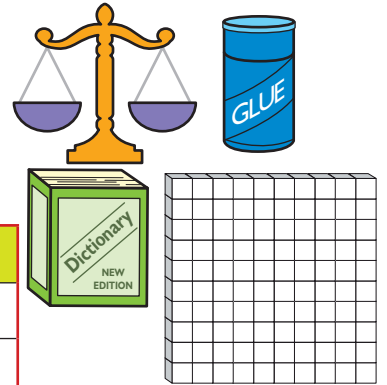
Object	Estimate	Measure	Difference
school bag			
tape dispenser			
computer keyboard			

Research the masses of different Australian animals. Create a table and order them according to their full-grown weight.



# Compare mass

- 1 How many of each classroom object does it take to make 1 kilogram? Estimate, measure and then calculate the difference between your estimate and the actual number to make 1 kg.



Object	Estimate	Measure	Difference
glue stick			
dictionary			
Base 10 flat			

- 2 Compare the mass of the above objects by completing these sentences.

Remember that the greater number of objects you need to make 1 kg, the lighter the object is.

- a The Base 10 flat is lighter than the glue stick.
- b The dictionary is heavier than the Base 10 flat.

- 3 Anita wants to pack her supermarket bag carefully and make sure the heavier things are at the bottom so that they don't squash the lighter objects. Look at the table of measurements and draw how Anita should pack the items into the bag.

Item	How many do I need to make 1 kg?
packet of teabags	4
bag of flour	1
tin of fruit	2
packet of biscuits	5



- 4 Which is the cheapest piece of fruit to buy: one banana, one apple or one orange? Use a calculator to help you.



Item	How many do I need to make 1 kg?	Cost for 1 kg	Cost for 1 item
banana	6	\$3.60	\$0.60
apple	5	\$2.25	<u>\$0.45</u>
orange	3	\$1.50	\$0.50

What would take up more space: 1 kg of rice or 1 kg of popcorn? Explain your answer.

1 Would you use kilograms (kg) or grams (g) to measure the mass of each of these items?



laptop

a           kg          



go-kart

b           kg          



mobile phone

c           g          



egg

d           g          



ice-cream

e           g          



hen

f           kg          



bike

g           kg          



mouse

h           g          

2 Amber collects souvenirs when she goes on holidays.



<b>souvenir</b>	boomerang	key ring	magnet	cat	spoon
<b>mass</b>	725 g	170 g	230 g	350 g	205 g

a Which souvenir is the heaviest?           boomerang          

b Which souvenir is the lightest?           key ring          

c Order the souvenirs from heaviest to lightest (use the name of the souvenir).

          boomerang, cat, magnet, spoon, key ring          

d How much would two identical magnets weigh?

          460 g          

e Which two souvenirs have a total mass of 520 g?

          key ring and cat          

f Use a calculator to find the total mass of all of the souvenirs.

          1680 g          



# Minutes in analog time

- 1 The numbers and hands have fallen off this analog clock. Put the numbers back onto the clock in their correct order and the hands to show 9 o'clock.



An analog clock has a minute hand and an hour hand.

The minute hand (the long hand) shows minutes past or to the hour.

The hour hand (the short hand) shows hours.

Why is counting by 5s important when reading the clockface?

- 2 How many minutes does it take the minute hand to move from one number to the next? 5 mins How did you work this out?

*By counting the spaces between one number and the next.*

- 3 How many minutes does it take the minute hand to move from:

**a** 12 to 1? 5      **b** 12 to 2? 10      **c** 12 to 3? 15

**d** 12 to 6? 30      **e** 12 to 9? 45      **f** 12 to 12? 60

- 4 How many minutes does it take the minute hand to move from:

**a** 1 to 2? 5      **b** 3 to 5? 10      **c** 7 to 10? 15

**d** 2 to 7? 25      **e** 4 to 6? 10      **f** 5 to 11? 30

- 5 How many minutes does it take the hour hand to move from one number to the next? 60 How did you work this out?

*There are 60 minutes in an hour.*

# Quarter-past, quarter-to and half-past

**1** Write the minutes (every 5 minutes) in the boxes around the analog clockface.

**2** Divide the clockface into quarters.



**20**

**a** What numbers relate to 'quarter-past'?

3  
15

**b** What numbers relate to 'quarter-to'?

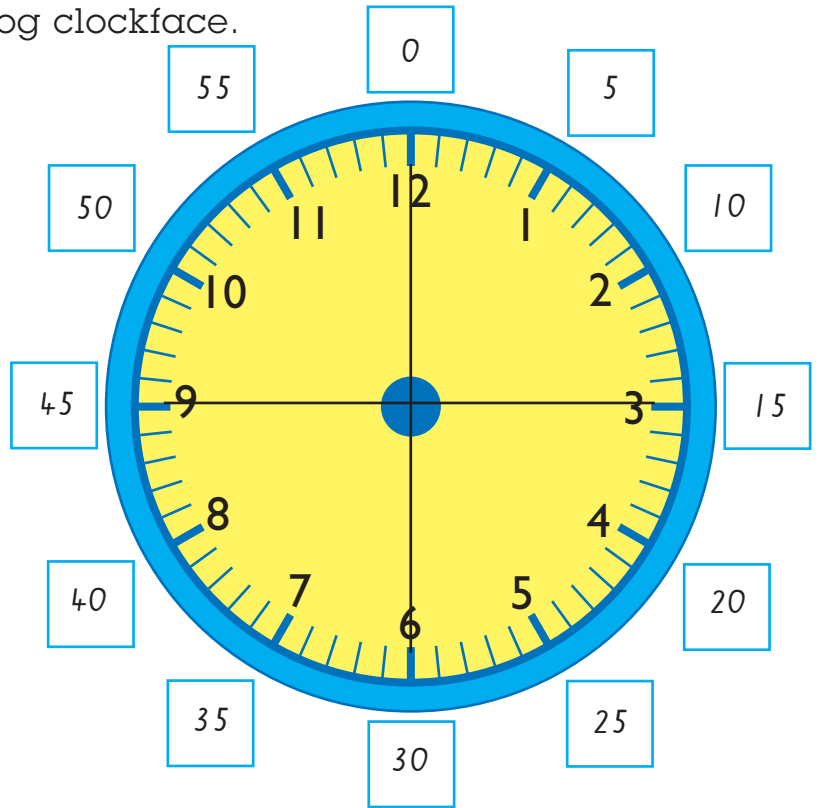
9  
45

**c** What numbers relate to 'half-past'?

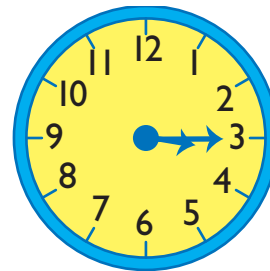
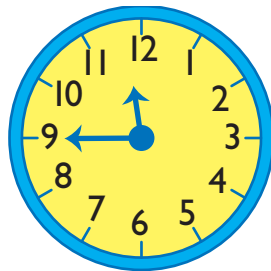
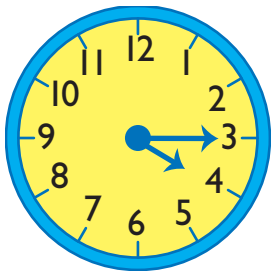
6  
30

**d** In the term 'half-past' what does 'half' refer to?

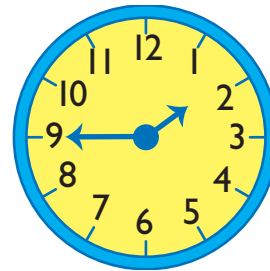
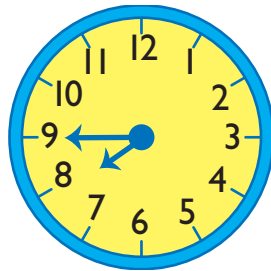
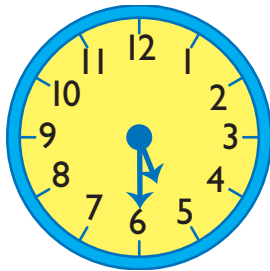
*Half of the hour.*



**3** Write the times shown on the clockface.



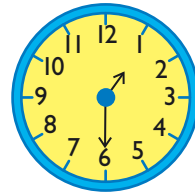
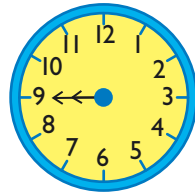
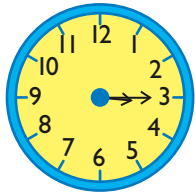
**a** Quarter-past 4   **b** Half-past 8   **c** Quarter-to 12   **d** *Quarter-past* 3



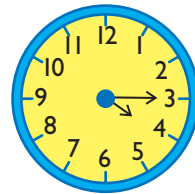
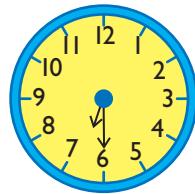
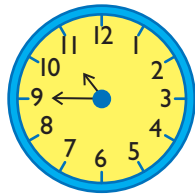
**e** *Quarter past* 1   **f** *Half past* 5   **g** *Quarter-to* 8   **h** *Quarter-to* 2

# What is the time?

1 Draw the times on the clockface.

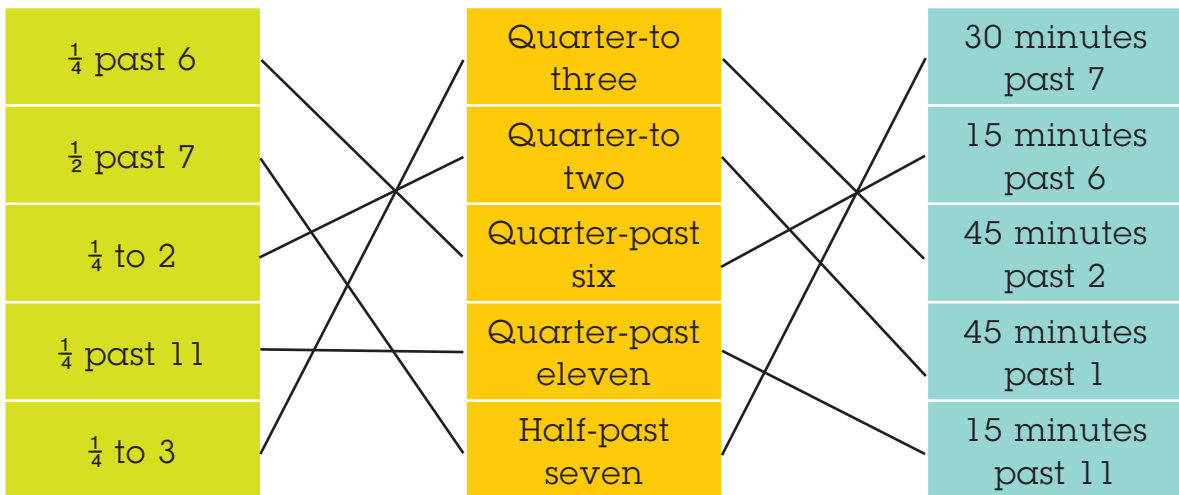


**a** Quarter-past 3   **b** Half-past 7   **c** Quarter-to 9   **d** 30 minutes past 1

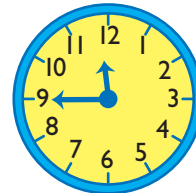
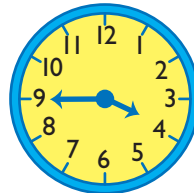


**e**  $\frac{1}{4}$  past 2   **f**  $\frac{1}{4}$  to 11   **g**  $\frac{1}{2}$  past 6   **h** 15 minutes past 4

2 Match the times.



3 Which hour has just passed on these clocks? The first one has been done for you.



**a** 5 o'clock   **b** 9 o'clock   **c** 3 o'clock   **d** 11 o'clock



Which sport's scoring system originated by using the clockface?

# Time problems

- 1 List some activities that take the following amounts of time.

15 minutes (one-quarter of an hour)	30 minutes (half an hour)	45 minutes (three-quarters of an hour)
<i>Walking the dog around the block</i>	<i>Baking a cake</i>	<i>Doing a 100-piece puzzle</i>

- 2 Solve these time problems.

- a Paddy went swimming at 4 o'clock and got out of the pool at half-past four. For how long did he swim? 30mins
- b If it takes half an hour to walk to school from home, how long will it take to walk to school and back home again? 1hr
- c Kate had an appointment at the dentist at half-past three. She didn't arrive until 4 o'clock. How late was she? 30mins
- d The movie started at 2 o'clock and finished at half-past three. What was the running time of the movie? 1hr 30mins
- e Nicole went to bed at 10 o'clock and woke up 9 hours later. What time did she wake up? 7 o'clock
- f Rock cakes take 15 minutes to cook. If a batch of cakes goes into the oven at half-past one what time will they be ready?  
Quarter to 2

- 3 Look at this clock. Roman numerals have been used to represent the numbers 1 to 12. Fill in the table showing how our numerals (Hindu-Arabic numerals) match the Roman numerals.



Hindu-Arabic	1	2	3	4	5	6	7	8	9	10	11	12
Roman	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII

# Read digital time

1 Match the digital times in numbers and words.

1:35	8 minutes past 4
11:24	one thirty-five
4:08	eleven twenty-four

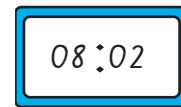
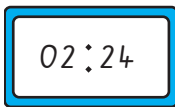
Digital time is read as minutes past the hour. 1:40 is read as 40 minutes past 1, or one-forty.

2 Write digital times for the times shown in words.

a two twenty-four

b ten-thirty

c 2 minutes past 8



3 This watch shows ten-twenty.



This signpost in the National Park shows how long it takes to walk to each place. What time will you arrive at each of the following places if you leave at 10:20?

Draw the time onto the digital clock.

a Lookout



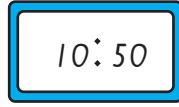
b Rock pool



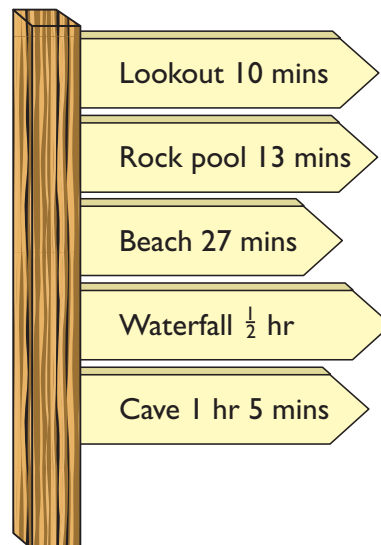
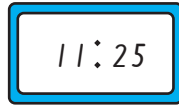
c Beach



d Waterfall

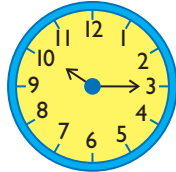




e Cave



# Compare digital and analog time

1 Complete the table.

Time in words	Digital time	Analog time
ten-fifteen	10:15	
five-thirty six	5:36	
eight mins past four	4:08	

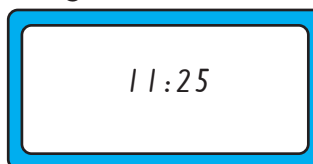
2 What does this sign tell motorists?

*2 hour parking time allowed*

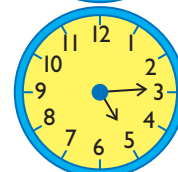
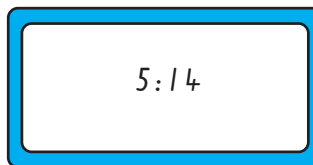


Draw onto the digital and analog clocks the time that the driver must return to their vehicle if they start parking at:

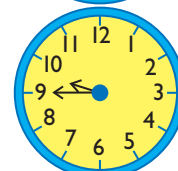
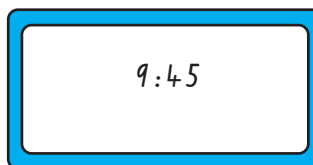
a 9:25



b three-fourteen






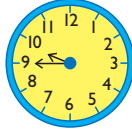
c quarter to 8





# More time problems

- 1 Complete the two activities below. Record the start and end time of the activity on both an analog and digital display. Calculate how many minutes the activity took.

a eating an apple.		b reading a picture book.	
Start time	End time	Start time	End time
Analog 		Analog 	
Digital <input type="text" value="01:10"/>	<input type="text" value="01:15"/>	Digital <input type="text" value="09:30"/>	<input type="text" value="09:45"/>

- 2 Write in digital time:

- a 5 minutes before 3:40 3:35      b 10 minutes after 8:17 8:27  
 c 5 minutes after half past 10 10:35  
 d 10 minutes before 3:05 2:55

- 3 Solve these time problems.

- a Kala went to the gym at 4 o'clock and came home at 5:30.  
 How long was she away? 1 hr 30 mins
- b Aziz had an appointment with the doctor at 2:45. He didn't arrive until 3:05. How late was he? 20 mins
- c Angus's TV program started at 7:30 and finished three-quarters of an hour later. What time did the program finish?  
8:15
- d Calam went to his grandma's at 2:15 and stayed there for 2 and a half hours. What time did he leave? 4:45
- e Potatoes take 30 minutes to boil. If Rob wants the potatoes to be ready by 5.15, when must he put them in the boiling water? 4:45

# Seconds

There are 60 minutes in one hour and 60 seconds in one minute.

- 1 List some activities that take the following amount of time.

About 1 second	About 10 seconds	About 30 seconds
<i>Clicking your fingers</i>	<i>Tying your shoelace</i>	<i>Saying the alphabet</i>

- 2 Knowing your  $6 \times$  number facts is helpful when learning about seconds. Complete the table.

Minutes	1	2	3	4	5	6	7	8	9	10
Number of seconds	60	120	180	240	300	360	420	480	540	600
$6 \times$ number facts	6	12	18	24	30	36	42	48	54	60

How many seconds in

- a 2 minutes? 120                      b 4 minutes? 240
- c 7 minutes? 420                        d 8 minutes? 480
- e 10 minutes? 600                        f  $\frac{1}{2}$  a minute? 30

- 3 Toby, Derek, Brianna and Julia each held their breath under water at the pool. Toby held his breath for 12 seconds, and Derek held his for 8 seconds longer than Toby. Brianna held her breath for  $\frac{1}{2}$  a minute, and Julia held hers for twice as long as Derek. How long did each swimmer hold their breath for?



Toby	Derek	Brianna	Julia
<i>12seconds</i>	<i>20seconds</i>	<i>30seconds</i>	<i>40seconds</i>

How long is 1000 seconds in hours and minutes? Use a calculator to help you.

