1 What is the length of each line?

a)

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |

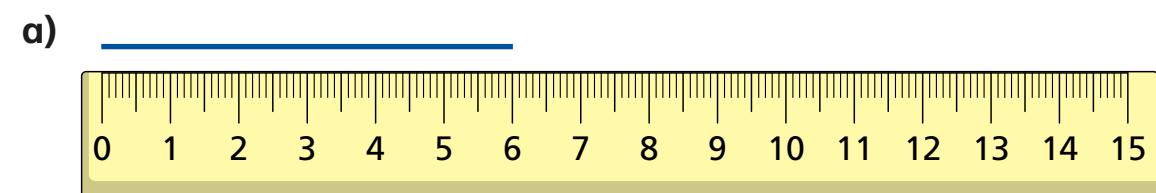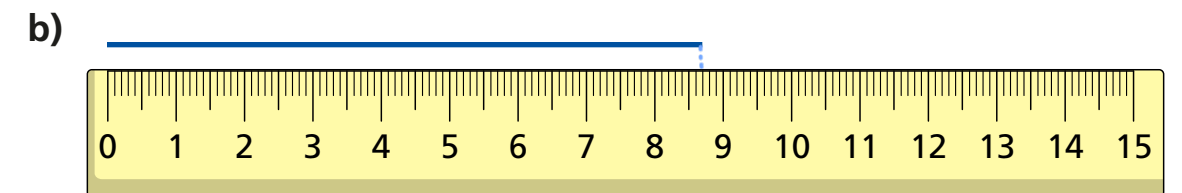4 cm

b)

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |

7 cm

c)
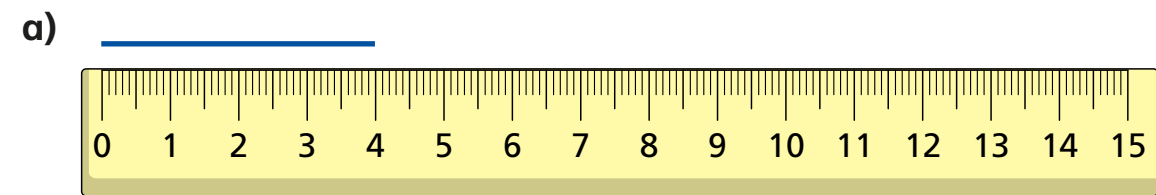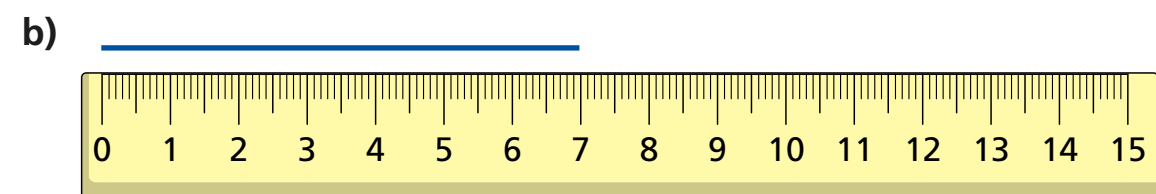
2 cm

2 Write the length of each line to the nearest millimetre.

a)

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |

60 mm

b)

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |

87 mm

c)
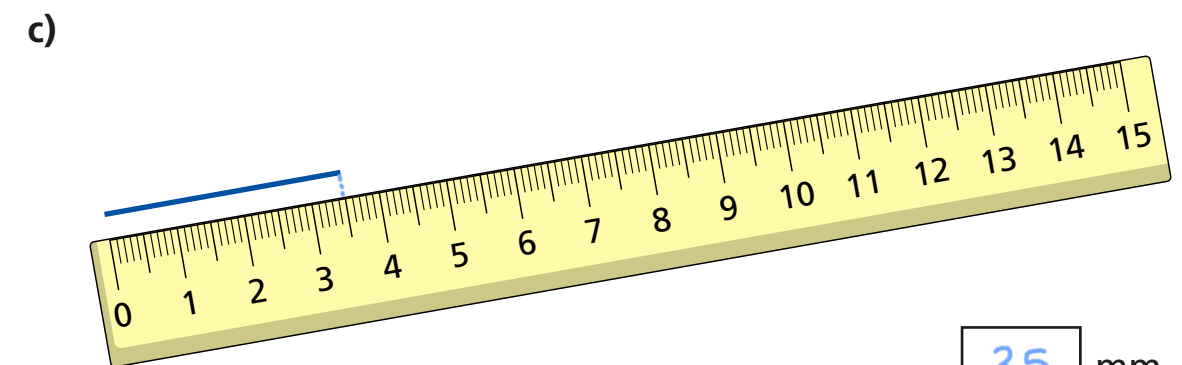
35 mm

3 Use a ruler to draw lines of these lengths.

a) 5 cm

b) 75 mm

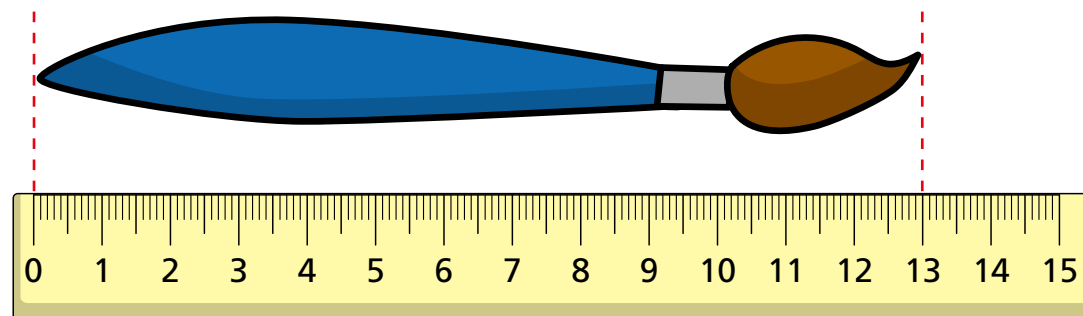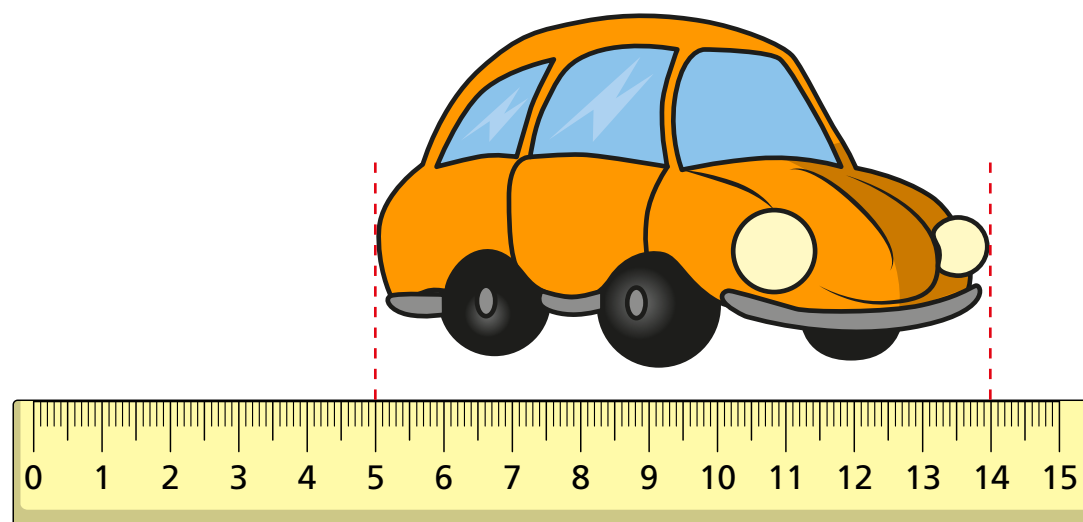**c)** 42 mm
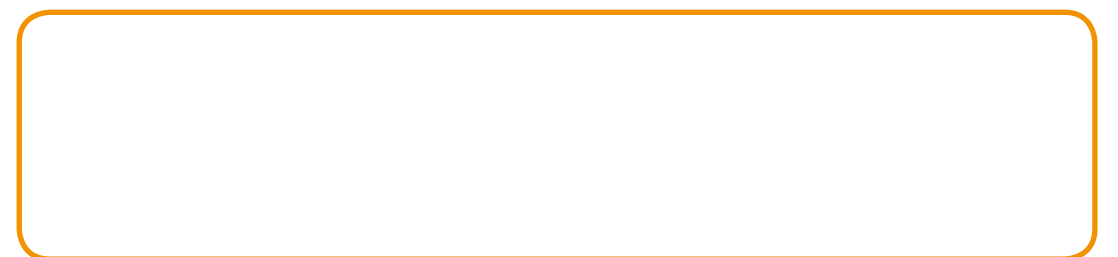
4 How long is the paintbrush?

The paintbrush is [13] cm long.

5 How long is the toy car?

The toy car is [9] cm long.

6 How tall is the baby giraffe?
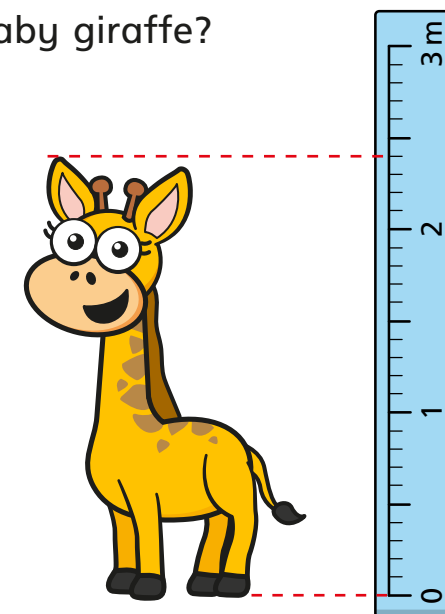
The baby giraffe is [2] m and [40] cm tall.

7 Tick the most sensible estimate for the height of a classroom door.

20 cm	2 m	20 m
☐	✔	☐

8 Find items in the classroom that are the following lengths.

Write your answers in the table.

Less than 10 cm long	Between 10 cm and 1 m long	More than 1 m tall

Compare with a partner.

4m 1cm

4m = 400 cm

1 cm

4m 1cm = 401 cm
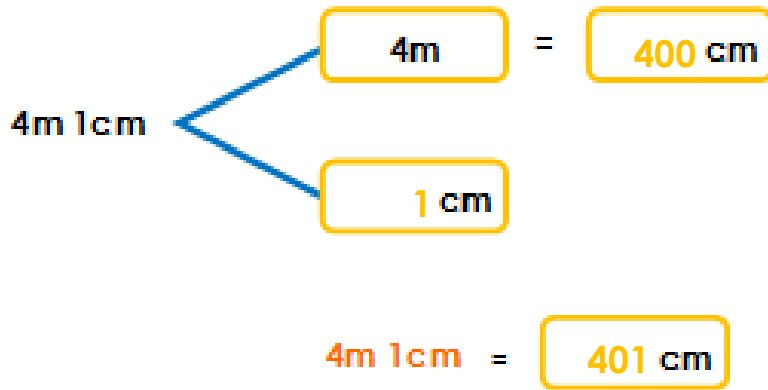
Reasoning 1

Modelled DAB Reasoning Responses

D – One sentence is missing 'metres' and the other is missing 'centimetres'.

A – A tree is about 4 **metres** tall.

A pencil is about 15 **centimetres** long.

B – A tree is much bigger than a pencil so it should be measured in metres using a metre stick. A pencil only needs to be measured in centimetres using a ruler.

Reasoning 2

Modelled DAB Reasoning Response

D – Ranjit has made a mistake.

A – His fingernail cannot be 7m long.

B – He must have used the wrong unit of measurement. Fingernails are small so should be measured using millimetres not metres. Ranjit's fingernail must be 7mm long.

Reasoning 3

Modelled DAB Reasoning Response

D – Both Jane and Marlon are correct.

A – The route is 2m 75 cm or 275cm.

B – They have both calculated the length of the track and got the same answer but have written it using different units of measurement. 2m 75cm is the same as 275cm.

Problem Solving 1

Children should work out that Stick A is 30cm.

There could be:

20cm, 19cm, 18cm, 17cm, 16cm showing above the ground.

Problem Solving 2

There are multiple possibilities:

Piece A:	Piece B:
4m	1m 50cm
3m 90cm	1m 60cm
3m 80cm	1m 70cm
3m 70cm	1m 80cm
3m 60cm	1m 90cm
3m 50cm	2m
3m 40cm	2m 10cm
3m 30cm	2m 20cm
3m 20cm	2m 30cm
3m 10cm	2m 40cm
3m	2m 50cm
2m 90cm	2m 60cm
2m 80cm	2m 70cm

Problem Solving 3

Stick A = 66cm

Stick B = 54cm

Stick C = 33cm

Equivalent lengths – m and cm

1 There are 100 centimetres (cm) in 1 metre (m).

Use the bar models to complete the sentences.

1 m
100 cm

a)

1 m	1 m	1 m
100 cm	100 cm	100 cm

There are [300] cm in 3 m.

b)

1 m	1 m	1 m	1 m	1 m	1 m
100 cm	100 cm	100 cm	100 cm	100 cm	100 cm

There are [600] cm in 6 m.

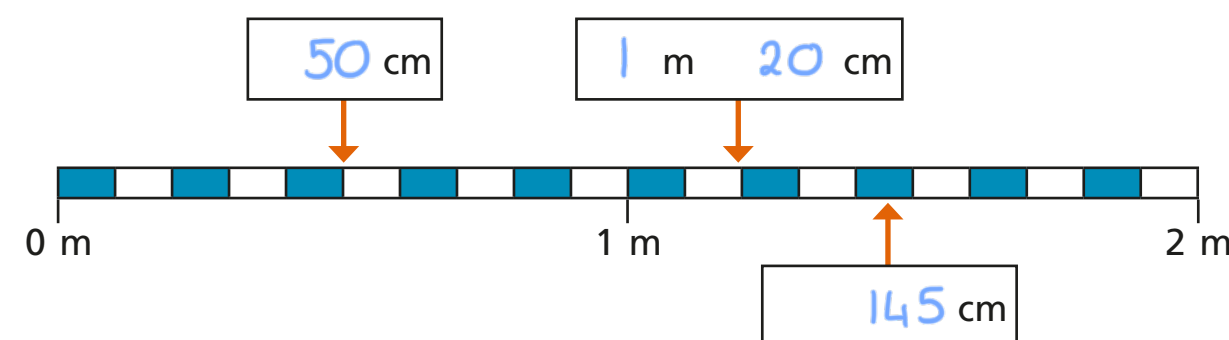**c)**

1m	1m	1m	1m	1m
100 cm	100 cm	100 cm	100 cm	100 cm

There are 500 cm in [5] m.

2 Complete the table to show equivalent lengths and continue the pattern.

cm	m and cm
310 cm	3 m and 10 cm
320 cm	3 m and 20 cm
330 cm	3 m and 30 cm
340 cm	3 m and 40 cm
350 cm	3 m and 50 cm
360 cm	3 m and 60 cm
370 cm	3 m and 70 cm

3 Write the missing measurements.

50 cm   1 m   20 cm

0 m   1 m   2 m
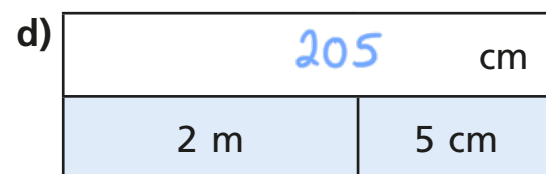
145 cm

4 Draw an arrow to show the position of each measurement.

A   B   C   D

0 m   1 m   2 m
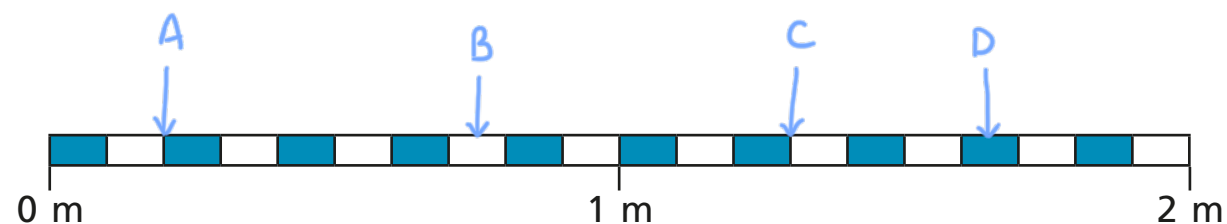
A	B	C	D
20 cm	0 m 75 cm	130 cm	1 m 65 cm

5 Complete the bar models.

a)

160 cm

1 m	60 cm

c)

410 cm

4 m	10 cm

b)

268 cm

2 m	68 cm

d)

205 cm

2 m	5 cm
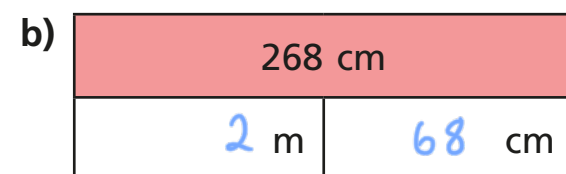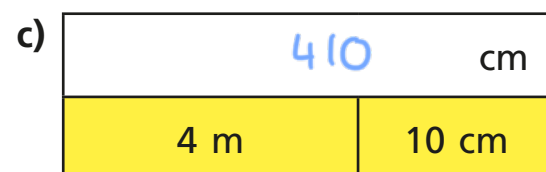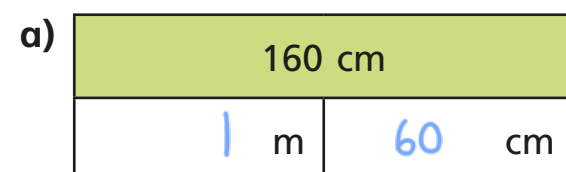
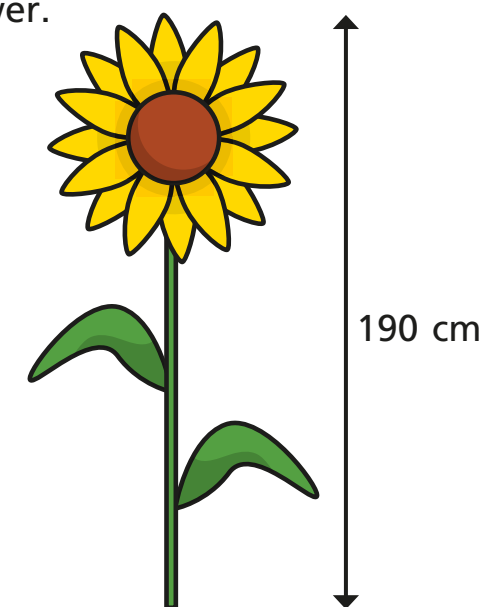**6** Complete the sentences.

a) 240 cm = [2] m and [40] cm

b) 319 cm = [3] m and [19] cm

c) 508 cm = [5] m and [8] cm

d) 2 m and 15 cm = [215] cm

e) 8 m and 3 cm = [803] cm

7 Here is Huan's sunflower.

190 cm

Dani's sunflower is 2 m and 30 cm.

Tom's sunflower is exactly halfway between Huan's and Dani's.

How tall is Tom's sunflower?

Write your answer in metres and centimetres.

[2] m and [10] cm

Reasoning 1

Modelled DAB Reasoning Responses

D – Jerry has made a mistake.

A – 62mm is not 60cm and 2mm

B – 62mm is 6cm and 2mm not 60cm and 2mm. There are 10mm in 1 cm so 60 ÷ 10 = 6cm not 60cm.

Reasoning 2

Modelled DAB Reasoning Response

D – I can order the measurements from largest to smallest.

A – I need to convert all the lengths to the same unit of measure.

B – 2cm = 20mm

3cm and 4mm = 34mm

9cm = 90mm

5cm and 2mm = 52mm

10mm
2cm
3cm and 4mm
5cm and 2mm
65mm
9cm

Problem Solving 1

Possible answers include:

Piece A	Piece B
2mm	12cm and 2mm
4mm	12cm
1 cm and 6mm	10cm and 8mm
1 cm and 8mm	10cm and 6mm
2cm	10cm and 4mm
2cm and 2mm	10cm and 2mm
2cm and 4mm	10cm
3 cm and 6mm	8 cm and 8mm
3 cm and 8mm	8cm and 6mm
4cm	8cm and 4mm
4cm and 2mm	8cm and 2mm
4cm and 4mm	8cm
5 cm and 6mm	6 cm and 8mm
5 cm and 8mm	6cm and 6mm

Problem Solving 2

Alfie's shoes could be any measurement between 160mm and 175mm written in mm and cm.

1 There are 10 millimetres (mm) in 1 centimetre (cm).

Use the bar models to complete the sentences.

1 cm
10 mm

a)

1 cm	1 cm	1 cm
10mm	10mm	10mm

There are | 30 | mm in 3 cm.

b)

1 cm	1 cm	1 cm	1 cm	1 cm	1 cm	1 cm
10mm	10mm	10mm	10mm	10mm	10mm	10mm

There are | 70 | mm in 7 cm.

c)

1 cm	1 cm	1 cm	1 cm
10 mm	10 mm	10 mm	10 mm

There are 40 mm in | 4 | cm.

2 Match the equivalent lengths.

1 cm 3 mm	3 cm 1 mm	30 mm	33 mm	30 cm

300 mm	13 mm	31 mm	3 cm 0 mm	3 cm 3 mm
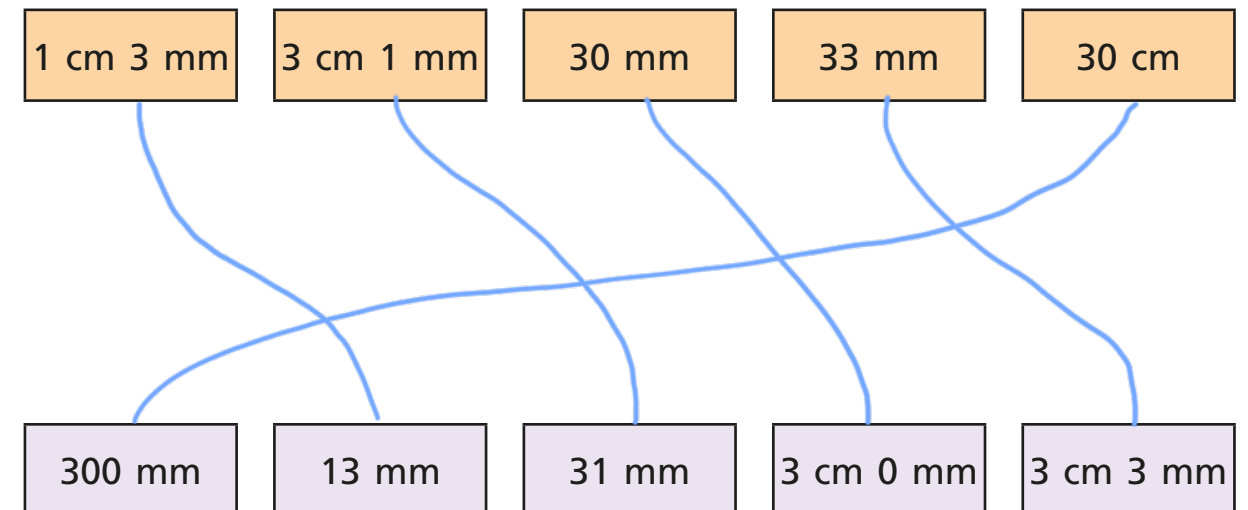
3 How long are the scissors?
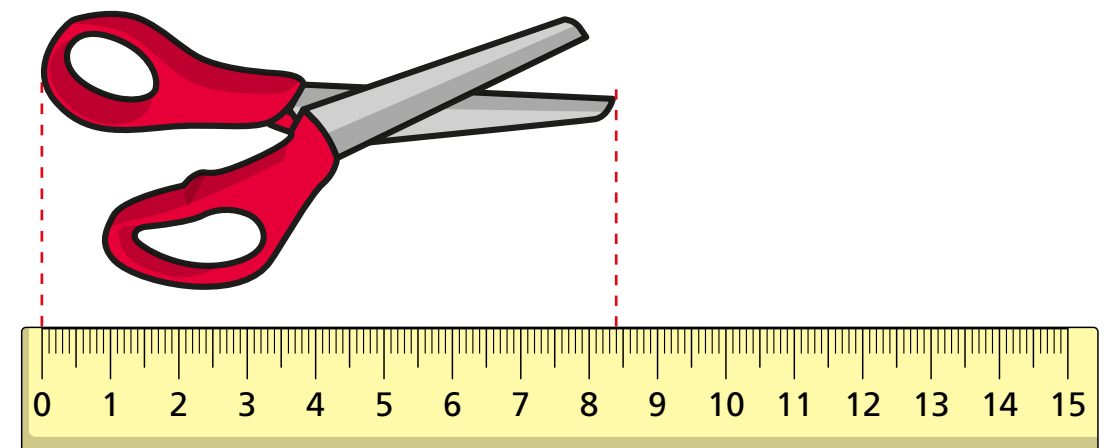
The scissors are | 8 | cm and | 4 | mm long.

The scissors are | 84 | mm long.

4 Find three items in your classroom.

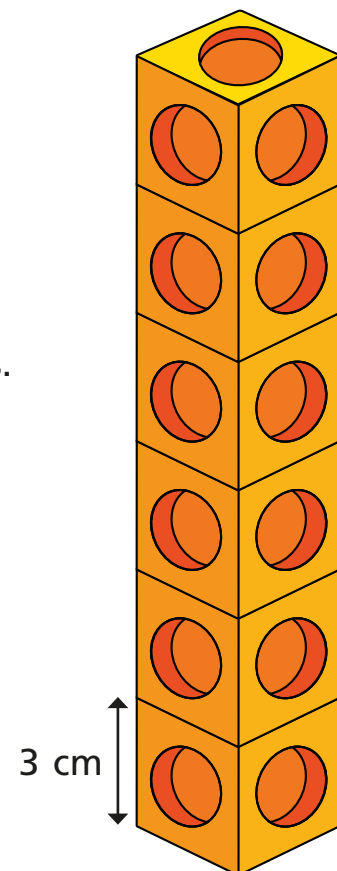Measure them and complete the table.

One has been done for you.

Item	Length in cm and mm	Length in mm
toy car	9 cm 6 mm	96 mm

5 Filip and Kim are building towers using cubes.

Each cube is 3 cm high.

a) Filip uses 6 cubes.

How tall is Filip's tower?
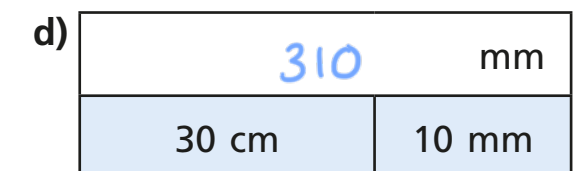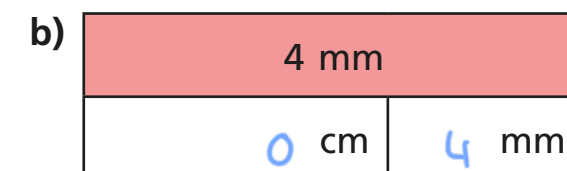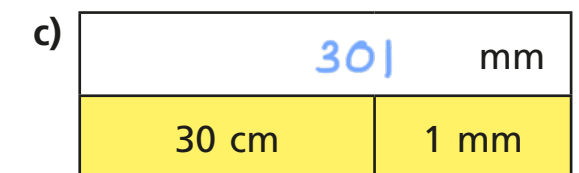
Give your answer in millimetres.

Filip's tower is ☐180☐ mm tall.
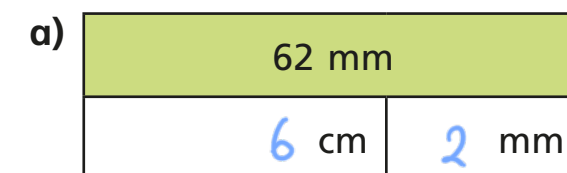
3 cm

b) Kim's tower is 300 mm tall.

How many cubes does she use?

Kim uses ☐10☐ cubes.

6 Complete the bar models.

a)
62 mm	
6 cm	2 mm

c)
301 mm	
30 cm	1 mm

b)
4 mm	
0 cm	4 mm

d)
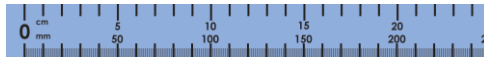| 310 mm	
30 cm	10 mm

Reasoning 1

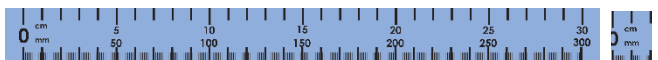### Modelled DAB Reasoning Responses

D – Marlon is correct.

A – 1m 32cm is taller than 1m 25cm.

B – 1m 32cm = 132cm and 125cm = 1m 25cm
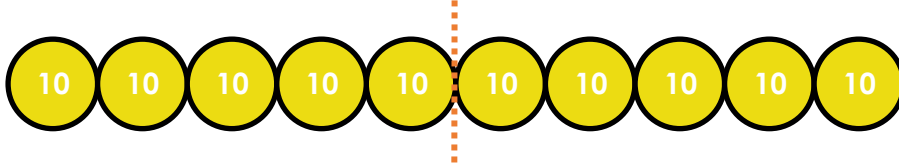
1m 25cm

1m 32cm

Reasoning 2

Modelled DAB Reasoning Response

D – True

A – Half a metre is 50cm.

B – 1m = 100cm so half a metre is 50cm because half of 100 is 50.

D – False

A – 4m is not equivalent to 800cm.

B – 1m = 100cm so 4m = 400cm

800cm = 8m.

Problem Solving 1

The distance between the fairground and the school is: 165cm x 2 = 330cm or 3m 30cm.

The distance between the café and castle is 200.5cm + 87cm = 287.5cm or 2m 87.5cm

The distance between the café and the fairground is 200.5cm or 2m 5mm.

The distances written in m and cm are:

Café – School: 2m = 200cm

School – Castle: 165cm = 1m 65cm

Castle – Fairground: 3m = 300cm

Farm – Café: 401cm = 4m 1cm

Compare lengths

1 Write <, > or = to compare the lengths.

a) 60 mm $\simeq$ 6 cm **c)** 5 cm $>$ 45 mm

b) 1 m 50 cm $>$ 115 cm **d)** 100 mm $<$ 1 m

How did you work this out?

2 Eva, Mo, Alex and Dexter have each built a tower.

Use the table to complete the sentences.

Child	Height of tower
Eva	1 m 5 cm
Mo	135 cm
Alex	1 m 45 cm
Dexter	1 m 25 cm

a) _____Alex_____'s tower is the tallest.

b) _____Eva_____'s tower is the shortest.

c) Mo's tower is _____taller_____ than Dexter's.

d) Eva's tower is _____shorter_____ than Alex's.

3 Write the following lengths in order from shortest to longest.

| 160 cm | 950 mm | 1m 50 mm | 200 cm | 1 m 25 cm |

| 950 mm | 1m 50mm | 1m 25cm | 160cm | 200cm |

shortest   longest

4 Jack, Tommy, Rosie and Whitney have a jumping competition.
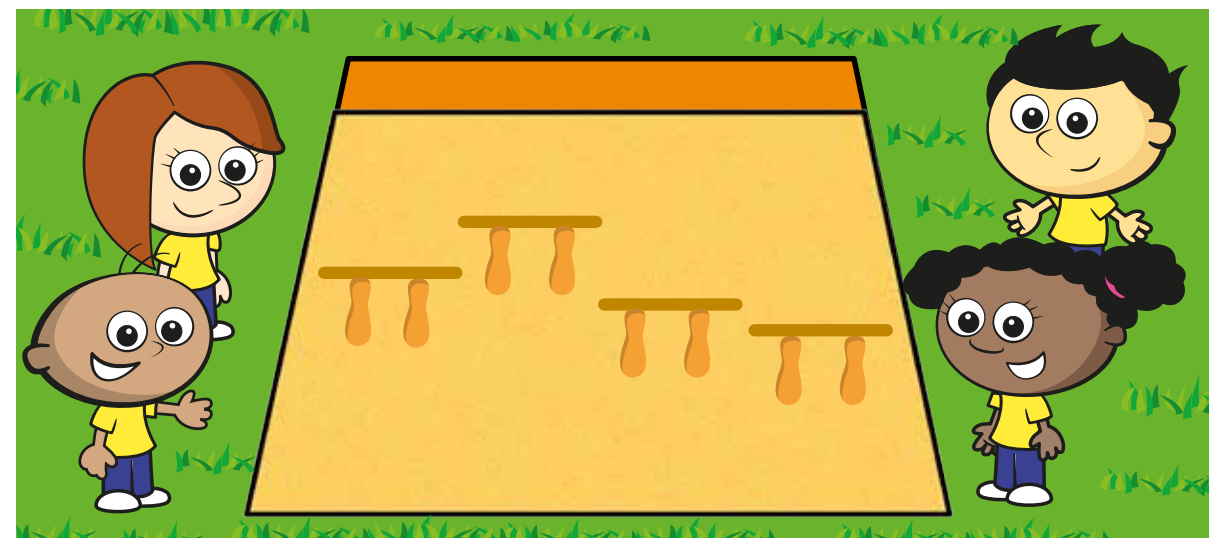
Here are the results.

Jack	Tommy	Rosie	Whitney
870 mm	105 cm	1 m and 30 mm	1 m and 10 cm

The person who jumped the furthest wins the competition.

Put the children in order from 1st to 4th place.

Whitney _Tommy_ _Rosie_ _Jack_

1st   2nd   3rd   4th

5 Measure the height of four of your classmates.

Measure their foot length and then complete the table.

| Name	Height in cm	Foot length in cm

What have you found? Do taller people have longer feet?

6 Measure the height of four of your classmates.

Measure how far they can jump and then complete the table.

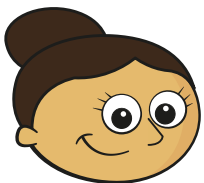| Name	Height in cm	Jump length in cm

Talk about what your results show.

Can taller people jump further?

7 Teddy, Mo, Amir, Dora and Annie have each grown a sunflower.

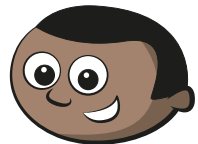Use the clues below to work out which sunflower belongs to which child.

A	B	C	D	E
1 m 10 cm	101 cm	550 mm	98 cm	1 m 12 cm
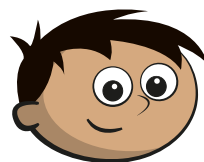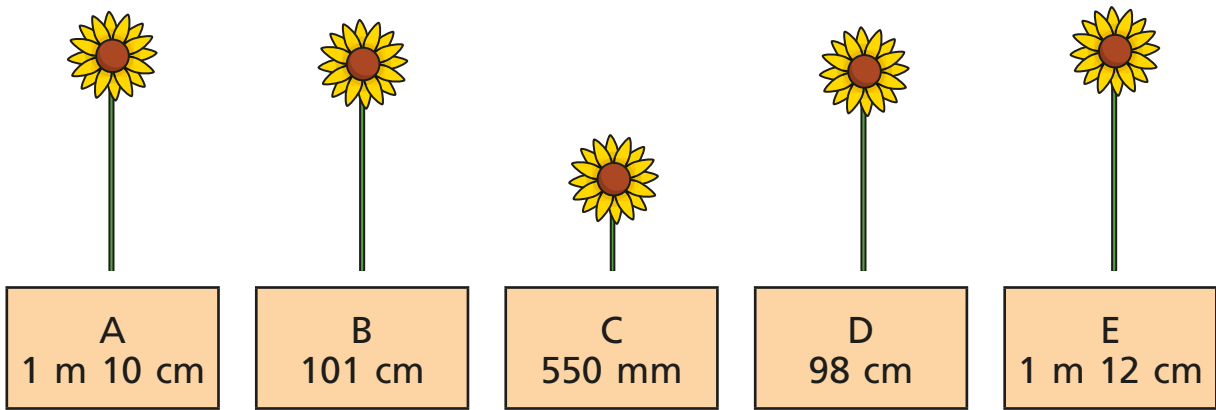
Amir: My sunflower is twice as tall as Teddy's.

Mo: My sunflower is less than 1 m tall.

Dora: My sunflower is 3 cm taller than Mo's.
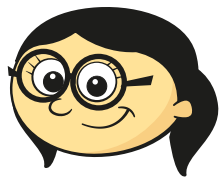
Annie: My sunflower is the tallest.

Write the owner of each sunflower.

sunflower A: _Amir_   sunflower D: _Mo_

sunflower B: _Dora_   sunflower E: _Annie_

sunflower C: _Teddy_

Reasoning 1

Modelled DAB Reasoning Responses

D – There are two measurements it could be.

A – It could be 732cm or 3m 66cm.

B – It could not be 4m 88mm because 88mm is 8cm and 8mm and 8mm is not a whole centimetre

Reasoning 2

Modelled DAB Reasoning Response

D – Asha has made a mistake.

A – Asha has written 4mm and 60mm in the wrong places.

B – 4mm is less than 1m so should be first in the list.

60mm is 6cm so should be the second on the list.

4mm
60mm
1m
253cm
3m 14cm
519cm

Friday 19th June 2020 Answers

Challenge 1 - 5 beads

Challenge 2 - 45

Challenge 3 - 482

Challenge 4 - Jacket £56 and Shirt £31