

Y3/4 Measures and data Unit 1 (34556)

Additional teacher instructions for practice sheets

These notes indicate which practice sheets are most appropriate for which groups.

Day 1 Y3 Converting and comparing heights Sheet 1

Working towards ARE / Working at ARE / Greater Depth

Day 1 Y4 Converting cm and m Sheet 2

Working towards ARE / Working at ARE / Greater Depth

Working towards ARE complete Table 1 and try Table 2.

Working at ARE complete Tables 1 and 2.

Greater Depth complete Tables 2 and 3.

Day 2 Y3 Converting mm to cm Sheet 1

Working towards ARE / Working at ARE / Greater Depth

Day 2 Y4 Measuring in mm and cm Sheet 2

Working towards ARE

Day 2 Y4 Measuring in mm and cm Sheet 3

Working at ARE / Greater Depth

Day 2 Y4 Measuring in mm and cm Sheet 4

Working at ARE / Greater Depth

Day 3 Y3/Y4 Pick a unit Sheet 1

Working towards ARE / Working at ARE / Greater Depth

Y4 should complete the Challenge.

When printing these sheets ensure printer settings are on 'actual size' otherwise the lines may be a different size to those on the answer sheet.

Converting and comparing heights

Sheet 1

Look at the data in the table and answer the questions below. Start with the bronze questions. See how far you can get through the silver and gold questions.

Name	Height in cm	Height in m and cm
Khalil	130cm	
Amy	120cm	
Alice	125cm	
Harry	123cm	
Freya	133cm	
Jasmine	139cm	
Ben	141cm	

Bronze

Can you convert the heights of the children from cm into m and cm?

Can you sort the children into height order from shortest to tallest?

How many children are taller than Freya? How many are shorter?

Silver

Who is 10cm taller than Harry?

Who is 5cm shorter than Khalil?

What is the height difference between the tallest and shortest child?

Gold

Name three pairs of children who have a difference in height greater than 4cm.

Name two pairs of children who have a difference in height less than 3cm.

Name one pair of children who have a difference in height of exactly 7cm.

Challenge

If the two shortest and the two tallest children lay head-to-toe along the floor, how long a line would they make? Give the answer in metres and centimetres.

Converting cm and m

Sheet 2

Convert the measurements to complete the tables:

Table 1

cm	m and cm	m
100 cm	1 m 0 cm	1 m
50 cm	0 m 50 cm	0.5 m
	2 m 0 cm	2 m
15 cm		0.15 m
	0 m 25 cm	0.25 m
320 cm	3 m 20 cm	

Table 2

cm	m and cm	m
	0 m 10 cm	0.1 m
575 cm		5.75 m
60 cm	0 m 60 cm	
	2 m 4 cm	
88 cm		
		4.1 m

Table 3

cm	m and cm	m
603 cm		
	0 m 19 cm	
		9.26 m
		0.34 m
	0 m 7 cm	
721 cm		

Converting mm to cm

Sheet 1

Measure nine of the colouring pencils in your pencil case or on your table and record their lengths in mm.

Pencil colour	Length in mm	Length in cm and mm

Now look at your data and answer the questions below. Start with the bronze questions. See how far you can get through the silver and gold questions.

Bronze

Can you convert the lengths of the pencils from mm into cm and mm?

Can you order the pencils by length from shortest to tallest?

Which pencil is in the middle when the pencils are in length order?

Silver

What is the difference between the longest and shortest pencil?

What is the difference between the blue and red pencil?

What is the difference between the green and yellow pencil?

Gold

How many pairs of pencils can you find with a difference in length that is greater than 6 mm?

How many pairs of pencils can you find with a difference in length that is less than 10 mm?

Challenge

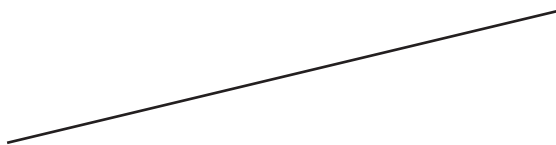
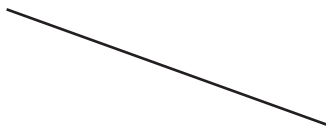
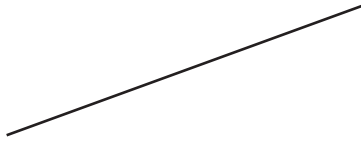
Compare your results with other tables – are there any colours in particular that are always at the shorter end? If there are, can you suggest why this might be?

Measuring in mm and cm

Sheet 2

Measure these lines.

Write the measurements underneath in mm and then in cm and mm,
e.g. 45mm = 4cm 5mm.

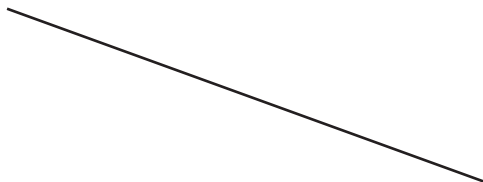


Measuring in mm and cm

Sheet 3

Measure these lines.

Write the measurements underneath in mm and then in cm and mm, then as a decimal, e.g. 45mm = 4cm 5mm = 4.5cm.

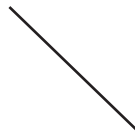


Measuring in mm and cm

Sheet 4

Measure these lines.

Write the measurements underneath in mm and then in cm and mm, then as a decimal, e.g. 45mm = 4cm 5mm = 4.5cm.



Pick a unit

Sheet 1

Think of five things that would be measured using each unit.
Make sure at least one of each is in the classroom.

	Item 1	Item 2	Item 3	Item 4	Item 5
Metres (m)					
Centimetres (cm)					
Millimetres (mm)					

Now choose three of them to measure accurately in the unit you have chosen

Challenge

Can you write what some of your items would be in a different unit (e.g. a person who was 1m 23cm can also be described as being 123cm tall or 1230mm tall).

Measures and data

Answers

Day 1 Y3 Converting and comparing heights Sheet 1

Bronze

Name	Height in cm	Height in m and cm
Khalil	130cm	1m 30cm
Amy	120cm	1m 20cm
Alice	125cm	1m 25cm
Harry	123cm	1m 23cm
Freya	133cm	1m 33cm
Jasmine	139cm	1m 39cm
Ben	141cm	1m 41cm

Shortest to tallest: Amy, Harry, Alice, Khalil, Freya, Jasmine, Ben.

Two children are taller than Freya, Four children are shorter than Freya.

Silver

Freya is 10cm taller than Harry.

Alice is 5cm shorter than Khalil.

The difference between the tallest and shortest child is 21cm.

Gold

Difference in height > 4 cm: e.g. Amy and Alice, Amy and Khalil, Amy and Freya, Amy and Jasmine, Amy and Ben, Khalil and Jasmine, Khalil and Ben, Alice and Khalil, Alice and Freya, Alice and Jasmine, Alice and Ben, Harry and Khalil, Harry and Freya, Harry and Jasmine, Harry and Ben, Freya and Jasmine, Freya and Ben.

Difference in height < 3 cm: e.g. Alice and Harry, Jasmine and Ben

Height difference exactly 7cm: Harry and Khalil

Challenge

Ben (141cm) and Jasmine (139cm) are the tallest, and Amy (120cm) and Harry (123cm) are the shortest. If they lay head-to-toe on the floor they would make a line 523cm or 5 metres 23cm long across the floor.

Day 1 Y4 Converting cm and m Sheet 2

Table 1

cm	m and cm	m
100 cm	1 m 0 cm	1 m
50 cm	0 m 50 cm	0.5 m
200 cm	2 m 0 cm	2 m
15 cm	0 m 15 cm	0.15 m
25 cm	0 m 25 cm	0.25 m
320 cm	3 m 20 cm	3.2 m

Measures and data

Answers

Day 1 Y4 Converting cm and m Sheet 2 continued

Table 2	cm	m and cm	m
	10 cm	0 m 10 cm	0.1 m
	575 cm	5 m 75 cm	5.75 m
	60 cm	0 m 60 cm	0.6 m
	204 cm	2 m 4 cm	2.04 m
	88 cm	0 m 88 cm	0.88 m
	410 cm	4 m 10 cm	4.1 m

Table 3	cm	m and cm	m
	603 cm	6 m 3 cm	6.03 m
	19 cm	0 m 19 cm	0.19 m
	926 cm	9 m 26 cm	9.26 m
	34 cm	0m 34 cm	0.34 m
	7 cm	0 m 7 cm	0.07 m
	721 cm	7 m 21 cm	7.21 m

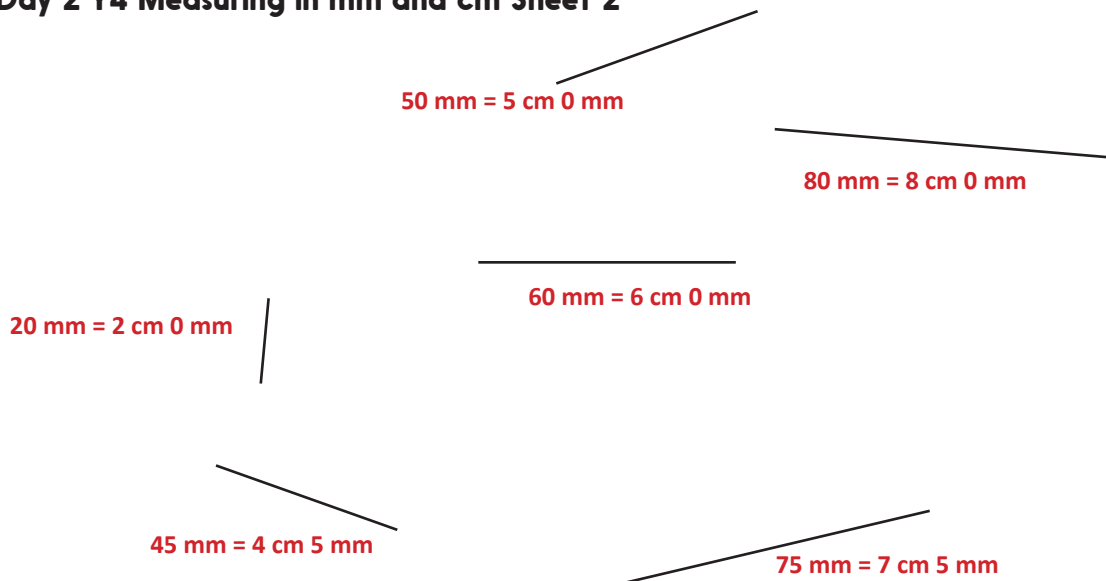
Day 2 Y3 Converting mm to cm Sheet 1

Children should measure the length of 9 coloured pencils and record their lengths in mm, and in cm and mm. They use their data to answer the Bronze, Silver and Gold questions.

Challenge

Children should note the colours that are often shorter, and note that they are shorter as they have been used and therefore sharpened more often.

Day 2 Y4 Measuring in mm and cm Sheet 2



Measures

Answers

Day 2 Y4 Measuring in mm and cm Sheet 3

$$30 \text{ mm} = 3 \text{ cm } 0 \text{ mm} = 3 \text{ cm}$$

$$85 \text{ mm} = 8 \text{ cm } 5 \text{ mm} = 8.5 \text{ cm}$$

$$55 \text{ mm} = 5 \text{ cm } 5 \text{ mm} = 5.5 \text{ cm}$$

$$42 \text{ mm} = 4 \text{ cm } 2 \text{ mm} = 4.2 \text{ cm}$$

$$67 \text{ mm} = 6 \text{ cm } 7 \text{ mm} = 6.7 \text{ cm}$$

$$73 \text{ mm} = 7 \text{ cm } 3 \text{ mm} = 7.3 \text{ cm}$$

Day 2 Y4 Measuring in mm and cm Sheet 4

$$40 \text{ mm} = 4 \text{ cm } 0 \text{ mm} = 4 \text{ cm}$$

$$37 \text{ mm} = 3 \text{ cm } 7 \text{ mm} = 3.7 \text{ cm}$$

$$24 \text{ mm} = 2 \text{ cm } 4 \text{ mm} = 2.4 \text{ cm}$$

$$61 \text{ mm} = 6 \text{ cm } 1 \text{ mm} = 6.1 \text{ cm}$$

$$96 \text{ mm} = 9 \text{ cm } 6 \text{ mm} = 9.6 \text{ cm}$$

$$17 \text{ mm} = 1 \text{ cm } 7 \text{ mm} = 1.7 \text{ cm}$$

Day 3 Y3/Y4 Pick a unit Sheet 1

Children choose five items that could be measured in metres, five in cm and five in mm, and then measure three of them accurately in m, cm or mm, whichever is the most appropriate unit.

In the Challenge they should accurately convert these measurements to m, cm and mm, as appropriate.