

Year 5 maths – Summer 1 Week beginning: 4.5.20 – Measures

Theme	Convert units of length (cm and mm) (Lesson 1 of 3)	Convert units of length (cm and m) (Lesson 2 of 3)	Convert units of length (m and km) (Lesson 3 of 3)	Solve problems by converting units of length (inches/feet and cm)	Convert units of mass (kg and g)													
Factual fluency (to aid fluency)	Recap identifying decimal numbers here .	Recap place value in decimal numbers here .	Recap ordering decimals here .	Recap ordering decimals here .	Recap comparing decimals here .													
Problem/ activity of the day	<p>(Lesson 1 resources below) MAKING LINKS: We learnt about measurements in year four.</p> <p>THINK: (support below) Can you help me with this problem?</p> <p>1) Measure the pencil and the Lego man in millimetres.</p> <p>2) What is the height of each in centimetres?</p> <p>SEE: (model below) See video here.</p> <p>DO: Use what you have learnt today to solve the problems below.</p>	<p>(Lesson 2 resources below) MAKING LINKS: Yesterday we learnt about converting between centimetres and millimetres.</p> <p>THINK: (support below) Can you help me with this problem?</p> <p>Write the height of each tree using the same unit.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Apple tree</td> <td style="padding: 2px;">600 cm</td> </tr> <tr> <td style="padding: 2px;">Oak tree</td> <td style="padding: 2px;">4.8 m</td> </tr> <tr> <td style="padding: 2px;">Pear tree</td> <td style="padding: 2px;">518 cm</td> </tr> </table> <p>SEE: (model below) See video here</p> <p>DO: Use what you have learnt today to solve the other problems below.</p>	Apple tree	600 cm	Oak tree	4.8 m	Pear tree	518 cm	<p>(Lesson 3 resources below) MAKING LINKS: Yesterday we learnt about converting between metres and centimetres.</p> <p>THINK: (support below) Can you help me with this problem?</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;">6.7 km</td> <td rowspan="3" style="padding: 2px; font-size: 0.8em;">Here are the distances travelled by some delivery vans. Write the distances travelled using the same units.</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;">6 km 70 m</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;">6007 m</td> </tr> </table> <p>SEE: (model below)</p> <p>DO: Use what you have learnt today to solve the other problems below.</p>		6.7 km	Here are the distances travelled by some delivery vans. Write the distances travelled using the same units .		6 km 70 m		6007 m	<p>(Lesson 4 resources below) MAKING LINKS: Yesterday we learnt about converting between metres and kilometres.</p> <p>THINK: (support below) Can you help me with this problem?</p> <p>I'm looking for a new rug for my house. It should be no longer than 80 cm and no wider than 50 cm. I found this one on the internet but the measurements are in inches. Should I buy it?</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p style="text-align: center;">RUG FOR SALE 40 inches long 24 inches wide</p> </div> <p>SEE: (model below) See video.</p> <p>DO: Use what you have learnt today to solve the other problems below.</p>	<p>(Lesson 5 resources below) MAKING LINKS: We learnt about converting between inches, feet and centimetres.</p> <p>THINK: (support below) Can you help me with this problem?</p> <p>These strawberries weigh 80 grams. Ria thinks this is 0.8kg. Is she correct?</p> <p>SEE: (model below) See video here.</p> <p>DO: Use what you have learnt today to solve the other problems below.</p>
Apple tree	600 cm																	
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	6007 m																	
Methods, tips, clues & checks	Day 1 resources and answers (below)	Day 2 resources and answers (below)	Day 3 resources and answers (below)	Day 4 resources and answers (below)	Day 5 resources and answers (below)													

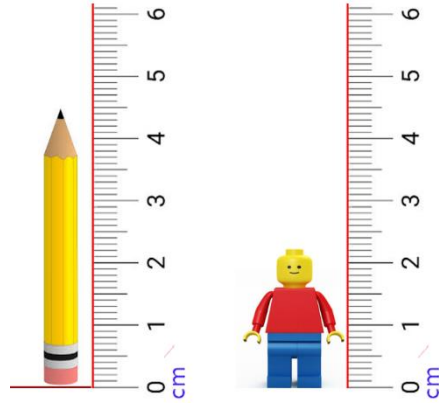
See below for resources to support you to THINK-SEE-DO

DAY 1 RESOURCES:

THINK:

1) Measure the pencil and the Lego man in millimetres.

2) What is the height of each in centimetres?

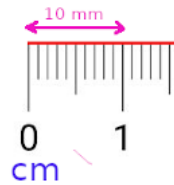


SEE: Watch the video [here](#).

Millimetres

The important thing to remember is $1 \text{ cm} = 10 \text{ mm}$.

The pencil is 45mm and the Lego man is 22mm.



Centimetres

There are 10 millimetres in a centimetre, so 1 mm represents one tenth of a centimetre or 0.1 cm.

Pencil

$10 \text{ mm} = 1 \text{ cm}$ $1 \text{ mm} = 0.1 \text{ cm}$
 $40 \text{ mm} = 4 \text{ cm}$ $5 \text{ mm} = 0.5 \text{ cm}$
The pencil is 4.5 cm.

Lego man

$10 \text{ mm} = 1 \text{ cm}$ $1 \text{ mm} = 0.1 \text{ cm}$
 $20 \text{ mm} = 2 \text{ cm}$ $2 \text{ mm} = 0.2 \text{ cm}$
The Lego man is 2.2 cm.

Another method

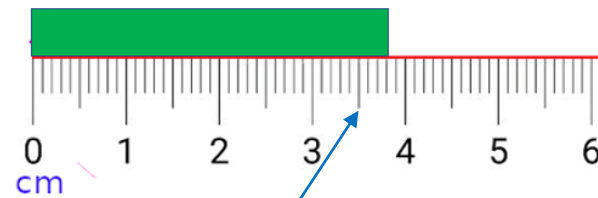
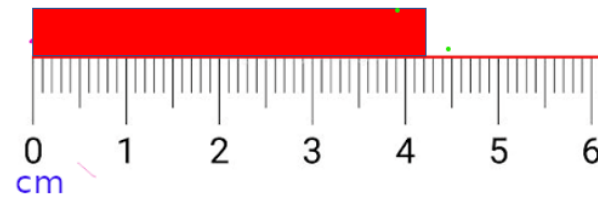
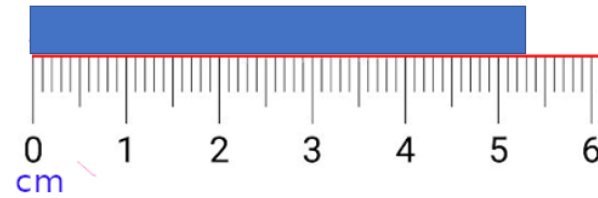
Turn cm into mm by **multiplying by 10**.
 $2.2 \text{ cm} \times 10 = 22 \text{ mm}$

Turn mm into cm by **dividing by 10**.
 $45 \text{ mm} \div 10 = 4.5 \text{ cm}$

For more, look at this [link](#) and here's [another](#).

DO:

1. What is the length of each block in a) millimetres and b) centimetres?



This line shows halfway between 3 cm and 4 cm. It represents 3.5 cm.

2. I have a ribbon that is 20cm long. I cut off 70 mm. How long is my piece of ribbon now?

3. A plant is 45cm tall. I cut off 17mm. How tall is it now?

Top tips: We always need to work with the same units of measurement. Turn cm into mm. $1 \text{ cm} = 10 \text{ mm}$

Deepening:

Write an explanation of your method for a) converting 5.8 cm into mm and b) converting 93 mm into cm.

Remember

$10 \text{ mm} = 1 \text{ cm}$

$\downarrow \div 10$ $\downarrow \div 10$
 $1 \text{ mm} = 0.1 \text{ cm}$

$1 \text{ cm} = 10 \text{ mm}$

Turn **cm** into **mm** by **multiplying by 10**.
 $3.2 \text{ cm} \times 10 = 32 \text{ mm}$



DAY 2 RESOURCES:

THINK:

Write the height of each tree using the **same unit**.

Apple tree	600 cm
Oak tree	4.8 m
Pear tree	518 cm

SEE: [See video here](#)

Let's start with centimetres.

Apple tree is done (600 cm) **and** pear tree is done (518cm).

Oak tree 4.8m = 4m + 0.8m

There are 100 cm in one metre. If we split a metre into ten equal pieces then each piece would be 10 cm long, so one tenth of a metre is 10cm.

$$1 \text{ m} = 100 \text{ cm} \quad 0.1\text{m} = 10\text{cm}$$

$$4 \text{ m} = 400 \text{ cm} \quad 0.8\text{m} = 80 \text{ cm}$$

The oak tree is 480cm.

Now let's look at metres.

Oak tree is done 4.8m

Apple tree 600 cm

$$100 \text{ cm} = 1\text{m}$$

$$600 \text{ cm} = 6\text{m}$$

The apple tree is 6m.

Pear tree 518 cm. You can break this into: 500+10+8 cm

$$100 \text{ cm} = 1\text{m}$$

$$500 \text{ cm} = 5\text{m}$$

$$10 \text{ cm} = 0.1\text{m}$$

$$1 \text{ cm} = 0.01 \text{ m}$$

$$8 \text{ cm} = 0.08 \text{ m} \quad \text{The pear tree is } 5.18\text{m}$$

Another option is metres and centimetres

The oak tree is 4.8 m. We can split this into 4m and 80cm. The pear tree is 518 cm so we can split it into 5m and 18 cm.

You can also turn m to cm by **multiplying by 100** and turn cm to m by **dividing by 100**. Like yesterday, you can look at this [link](#) and here's [another](#).

DO:

- Jack is 1m 80 cm tall. How tall is he in:
a) centimetres
b) metres?
- A door is 280 cm in height. How tall is it in:
a) metres and centimetres
b) metres?
- A lorry is 4.60 m long. How long is it in:
a) metres and centimetres
b) centimetres?
- A fence is 809 cm long. How long is it in:
a) metres and centimetres
b) centimetres?
- A building is 14.60 m tall. How tall is that in:
a) metres and centimetres
b) centimetres?
- My friend is 1m 64 cm tall. How tall is she in:
a) metres
b) centimetres?

Top tips:
1 m = 100 cm
0.1 m = 10 cm
0.01 m = 1 cm

Deepening:

A 1.2 m ribbon and a 90 cm ribbon are joined by overlapping the ends and gluing them together. The total length of ribbon needs to be 195 cm long.




How much should the two pieces overlap?








DAY 3 RESOURCES:

THINK:

	6.7 km	Here are the distances travelled by some delivery vans. Write the distances travelled using the same units .
	6 km 70 m	
	6007 m	

SEE:

van	kilometres and metres	kilometres	metres
	6.7km = 6km + 0.7km There are 10 lots of 100m in 1000m, so 100 m is one tenth of a kilometre. 0.1 km = 100m 0.7km = 700m This van travelled 6 km 700m.	6.7 km	6.7 km = 6 km + 0.7 km 1km = 1000m 6km = 6000m 0.1km = 100m 0.7km = 700m This van travelled 6700m.
	6 km 70 m	6km 70m	6km 70m There are 100 lots of 10m in 1000m, so 10m is one hundredth of a kilometre. 10m = 0.01km 70 m = 0.07 km This van travelled 6.07km.
	6007m = 6000m+7m 1000m=1km 6000m = 6km This van travelled 6km 7m.	6007 m = 6000m+7m 1000m = 1km 6000m = 6km There are 1000 lots of 1m in 1000m so 1m is one thousandth of a kilometre. 1m = 0.001km 7m = 0.007 km This van travelled 6.007km.	6007 m

DO:

Convert these measurements.

- 4.600km = ...km and ...m
- 7km 100m = m
- 8400m = km
- 1.020km = km andm
- 4km 50m = ... m
- 9040m = ... km
- 4008 m = ...km and ...m
- 6km 4m = ...km
- 8 km 3m = ...m

Top tips:

- 1000m = 1km**
- 100m = 0.1km**
- 10 m = 0.01km**
- 1m = 0.001 km**

2. Complete the table showing how far the children ran.

	kilometres and metres	kilometres	metres
James	4km 500m		
George		4.050km	
Isla			4005m

Deepening:

- Sarah thinks 6km 3m is 6.03km. Is she correct? Explain why or why not.

DAY 4 RESOURCES:

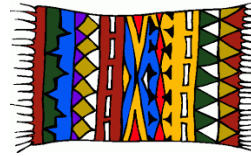
THINK:

I'm looking for a new rug for my house. It should be no longer than 80 cm and no wider than 50 cm. I found this one on the internet but the measurements are in inches. Should I buy it?

Top tip – **1 inch = approximately 2.5cm**

RUG FOR SALE

40 inches long
24 inches



SEE:

1 inch = 2.5cm

We can use this fact to work out other facts by multiplying.

For example:

1 inch = 2.5 cm
2 inches = 5 cm
4 inches = 10 cm
8 inches = 20 cm
10 inches = 25 cm

I can also use addition to help me.

5 inches = 4 inches + 1 inch
5 inches = 10 cm + 2.5 cm
5 inches = 12.5 cm

What others can you work out?

Watch the [video](#).

Let's start with the length of 40 inches and multiply to find new facts.

1 inch = 2.5 cm
10 inches = 25 cm
40 inches = 100 cm

OR

1 inch = 2.5 cm
4 inches = 10 cm
40 inches = 100 cm

This rug is 100cm long or 1m.

Now let's look at the width 24 inches.

I'll split this into **20 inches** and **4 inches** to make it easier.

1 inch = 2.5 cm
10 inches = 25 cm
20 inches = 50 cm

1 inch = 2.5 cm
2 inches = 5 cm
4 inches = 10 cm

Altogether that's 60 cm so the rug is 60cm wide.

Unfortunately, this rug is too large for my house. I'll have to look for another one!

DO:

Write these measurements in **centimetres** using these facts:

1 inch = 2.5 cm and **10 inches = 25 cm**

- 30 inches
- 100 inches
- 3 inches
- 25 inches – (Tip: You can work out 20 inches and 5 inches and then, add the answers up.)

Another measurement is "feet."

1 foot is 12 inches.

- A) Work out 2 feet 4 inches in **inches**.
B) Work out 2 feet 4 inches in **centimetres**.
- A) Work out 50 inches in **feet and inches**. (Clue: how many lots of 12 in 50?)
B) Work out 50 inches in **centimetres**.

Deepening:

Now trying working the other way.

How many inches is 230 cm? How many feet and inches is that?

What is 445 cm in inches? What is that in feet and inches?

DAY 5 RESOURCES:

THINK:

These strawberries weigh 80 grams.
Ria thinks this is 0.8kg. Is she correct?



SEE: See video [here](#).

We know that **1000g = 1 kg**.

We would need 10 lots of 100g to make 1000g, so **100g is one tenth of a kilogram**.

0.1kg = 100g
0.8kg = 800g

We would need 100 lots of 10g to make 1000g, so **10g is one hundredth of a kilogram**.

10g = 0.01kg
80g = 0.08kg

So Ria is incorrect. 80g is **eight hundredths** of a kilogram which we can write as **0.08kg**. Her answer 0.8 kg is **eight tenths** of a kilogram which is **800g**. That would be a lot of strawberries!

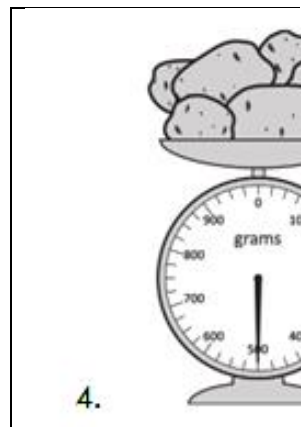
DO:

Write each mass in kilograms.

1. 20g
2. 50g
3. 70g

Top tips:

1000 g = 1 kg
100 g = 0.1 kg
10 g = 0.01 kg



Write each mass in grams.

- 7) 0.04kg 8) 0.06kg 9) 0.03kg
10) 0.2kg 11) 0.9kg 12) 0.8kg

TOP TIPS:

0.1 kg = 100 g
0.01 kg = 10 g

Deepening:

A football weighs 0.4 kg.

Three footballs weigh the same as eight cricket balls.

How many grams does a cricket ball weigh?

ANSWERS:



Day 1:

DO:

1. a) 53mm b) 5.3cm
2. b) 42 mm b) 4.2cm
3. a) 38 mm b) 3.8cm
4. 13cm
5. 43.3 cm

Deepening
Own answer

Day 2:

DO:

1. a) 180cm b) 1.8m
2. a) 2m 80cm b) 2.8m
3. a) 4m 60cm b) 460cm
4. a) 8m 9cm b) 8.09cm
- 5 a) 14m 60cm b) 1460cm
- 6 a) 1.64m b) 164cm

Deepening
15cm



ANSWERS:

Day 3:

DO:

1. 4km 600m
2. 7100m
3. 8.4km
4. 1km 20m
5. 4050m
6. 9.04km
7. 4km 8m
8. 6004km
9. 8.003 km

	kilometres and metres	kilometres	metres
James	4km 500m	4.5km	4500m
George	4km 50m	4.05km	4050m
Isla	4km 5m	4.005km	4005m

Deepening:

Sarah is incorrect. It should be 6.003km.
1m in one thousandth of a metre or 0.001 so 3
m is 3 thousandths of a metre or 0.003. She
has written 6.03 km which is 6 km and 3
hundredths of a kilometre (30 m).

Day 4:

DO:

- 1 75cm
- 2 250cm
- 3 7.5 cm
- 4 62.5cm
- 5 a) 28 inches b) 70cm
- 6a) 4 feet 2 inches b) 125cm

Deepening:

230cm = 92 inches = 7 feet and 8 inches
445 cm = 178 inches = 14 feet and 10
inches

Day 5:

DO:

1. 0.02 kg
2. 0.05kg
3. 0.07kg
4. 500g = 0.5kg
5. 300g = 0.3kg
6. 250g = 0.25kg
7. 40g
8. 60g
9. 30g
10. 200g
11. 900g
12. 12
13. 800g

Deepening:

150g