Converting Measures

Starter 1)6473 + 3726= 2)487 x 73= 3)7645 ÷ 6= $4)^{3}_{4}=...$ 5)4/5 + 2/10= 6)10% of 80=

kilometres



Metres

mm

Millimetres

Centimetres

cm

m



What does the ruler show us?

How can we tell the difference between mm and cm?

What facts can you gain from the ruler?

What do the big or boldest lines measure?

What do the slightly longer lines measure?

What do the little lines measure?



How long is the line?





7cm 2mm 72mm





The ruler helps show that 10 millimetres (mm) is the same as 1 centimetre (cm)

10mm = 1cm

1 cm = 10 mm

How would we convert centimetres to millimetres?

How would we convert millimetres to centimetres?

1. To convert from centimetres to millimetres, we multiply by 10



Knowing that now try to convert following numbers:

3cm = _ _ mm 7cm = _ _ mm 12cm = _ _ mm 5.4cm = _ _ mm 6.89 cm = mm 15.3 cm mm 234.26 cm = mm

Why would you need to convert cm to mm?

X 1<u>0</u>

2. To convert from millimetres to centimetres, we divide by 10



So 1 mm = 0.1 cm Knowing that now try to convert these numbers: 3mm = _ . _ cm 7mm = cm 12mm = cm 37mm = cm 178mm= cm 1473mm= cm

Why would you need to convert mm to cm?

1 cm

1mm

We can also write our length in just cm. How many mm are in 1cm?

 $1mm = 1cm \div 10 = \frac{1}{10} cm =$

Who can remember how we write as a decimal?

$$1mm = \frac{1}{10}cm = 0.1 cm$$

$$3mm = \frac{3}{10}$$
 cm = 0.3 cm3

We can write 1cm 3mm as 13mm or 1.3cm

1mm = 1 = 0.1cm Explain why the denominator is 10

$$2mm = ? = 0.2cm$$

10

 $\frac{23mm}{10} = \frac{6}{10} = 0.6cm$ $\frac{23mm}{10} = \frac{2}{10} = 2cm$



Measuring lengths Activity 1



Open Activity 1





Activity 2

Success Criteria

•Identify whether you need to multiply or divide depending on which measurements you are converting between;

•Multiply or divide by 10 or 100, moving one or two decimal places accordingly;

•Use place value columns to help you if you are unsure;

•<u>Remember</u>: 10mm = 1cm, 100cm = 1m, 1000mm = 1m

10 mm	1 cm	0.01 m
20 mm		0.02 m
30 mm		
	4 cm	
		0.05 m
64 mm	6.4 cm	
78 mm		
850 mm	85 cm	
		0.09 m
100 mm		
	125 cm	
365 mm		
350 mm		0.35 m
		6.38 m
882 mm		
1000 mm		

Open Activity 2 in Length activities folder

Extension: Drawing Squares

- Use a ruler to draw squares with sides
- 1) 3cm, 2) 4cm, 3) 5cm, 4) 6cm, 5) 7cm
- Measure and record the length of the DIAGONALS in
- a) ____cm & ___mm
- b) ____mm
- c) ____cm





1000 mm is the same as...





1010 mm is the same as...

101 cm is the same as...

1 m and 1 cm



3 m= 300 cm andmm

300 cm and mm







is the same as...

1 m
1 m
1 m

250 cm and 2500mm





1.5 m or 1½ m

is the same as...

1 r	n
1 r	n

150 cm ormm



1 m	
1 m	

125 cm and mm









Converting Length measurements RECAP

cm to mm - x 10m to cm - x 100 km to m - x 1000 mm to cm ÷ 10 cm to m ÷ 100 m to km ÷ 1000

Activity 3

Convert units of measurement by dividing by 10, 100 and 1000

Can you convert the mm to cm, cm to m and m to km?

1) 30mm = ____ cm

2) 643cm = ____ m

3) 1522m = ____ km

4) 2032mm = ____ cm

5) 423.26cm = _____ m

6) 3211mm = _____ cm

7) 2102m = _____ km

8) 392.52mm = ____ cm

9) 7712.14m = ____km

10) Lauren measures her walk to school, and finds it is 45,201cm. How many metres is this?

- **11)** Tom parachutes out of a plane; the height from the plane to the ground is 400,000m. How many kilometres is this?
- 12) Lauren measures her walk to school and find it is 45,201cm. How many metres is this?
- 13) Tom parachutes out of a plane. The height from the plane to the ground is 500,000cm. How many metres is this?

Open Activity 3 in Length activities folder

Problem solving

Felix is measuring the height of his classmates' and recording his results.



He has forgotten to write the unit of measurement.

Which unit measurement could he be using for each length? Convince me.

Now try this:

A plank of wood is 4.6m long.



Two lengths are cut from the wood.

350 cm $2\frac{1}{4} \text{ m}$

How much wood is left?



The **RUCSAC** Method for solving maths word problems

R	Read the question carefully	Find the important information - <u>underline</u> it!
U	<u>Understand</u> the question	What do you have to find out? Draw a 'picture' of the question, if it helps.
С	<u>Choose</u> the correct method of calculation	+ - x ÷ What method is best for you to use?
S	<u>Solve</u> the problem	Show every step and keep your working out neat.
A	Answer the question	Read the question again - have you answered it? Make the answer clear.
С	<u>Check</u> your answer	Does it make sense? Find a way to check - estimate or use the inverse.

The children are estimating how far it is to walk to assembly.



Who do you agree with and why?

Activity 4 Word Problems

1. Dan skips 3 metres and then hops 4 metres. How far does Dan hop and skip?

Samantha's ribbon is 355cm long. Tim's ribbon is
353cm long. How much ribbon do they have altogether?
Taz has a 27 metre rod. How many centimetres long is the rod?

•••••

Open Activity 4 in Length activities folder



The **RUCSAC** Method for solving maths word problems

R	Read the question carefully	Find the important information - <u>underline</u> it!
U	<u>Understand</u> the question	What do you have to find out? Draw a 'picture' of the question, if it helps.
С	<u>Choose</u> the correct method of calculation	+ - x ÷ What method is best for you to use?
S	Solve the problem	Show every step and keep your working out neat.
A	Answer the question	Read the question again - have you answered it? Make the answer clear.
С	<u>Check</u> your answer	Does it make sense? Find a way to check - estimate or use the inverse.



Most of the time, we use this side of our rulers for measuring. If we turn them the other way round, we have millimetres.



Notice that the numbers go up in 10's.

Here is a close-up of the millimetres markings



This means that we can be more accurate with our measuring. We can now measure objects to the nearest millimetre!

A little reminder!



The width is the shortest side

The length is the longest side



Measure the length and width of given shape. Measure to the nearest $\frac{1}{2}$ cm



Measure the length and width of given shape. Measure to the nearest $\frac{1}{2}$ cm





Measure the length and width of given shape. Measure to the nearest $\frac{1}{2}$ cm



Challenge: Measure the length and width of this shape to the nearest millimetre



Challenge: Measure the length and width of this shape to the nearest millimetre

