Steps to Success

Lockdown	
Date	
Subject/s	**Maths**
Learning Objective	To convert units of length

		SA	TA
Success Criteria	I know there are 10mm in 1cm		
	I know there are 100cm in 1 m		
	I know there are 1000m in 1 km		
	I can use or imagine a place value grid to multiply and divide by 10. 100 and 1000		
Support	Independent Adult Support ( ) Group Work		

Pre-task:

Convert these units:

67mm = _____cm

_____mm = 3.7cm

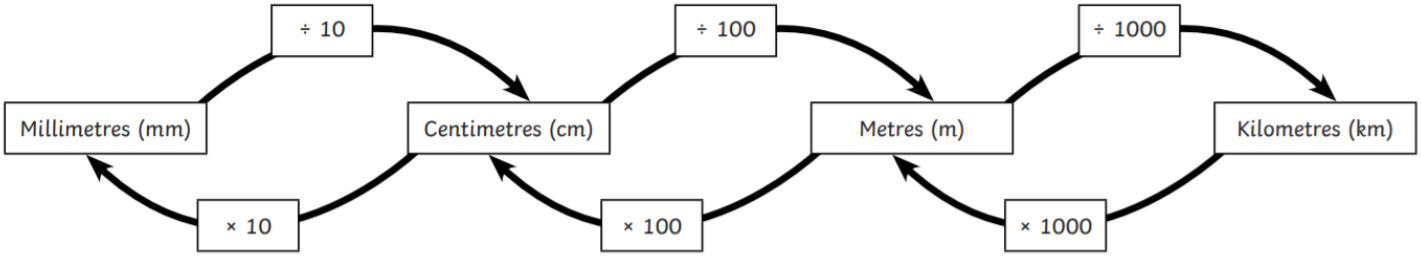
298cm = _____m

_____cm = 0.879m

789m = _____km

_____m = 1.09km

Length



Decimal Place Value Chart

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths	ten thousandths	hundred thousandths	millionths
M	HTh	TTh	Th	H	T	O	t	h	th	tth	hth	m

1.

Metres	Centimetres	Millimetres
0.327		
0.794		
0.329		
0.818		
0.651		
0.215		
0.802		
0.57		
0.845		
0.453		

2.

Metres	Centimetres	Millimetres
6.674		
5.016		
1.014		
3.125		
5.47		
8.215		
5.23		
1.551		
4.228		
9.774		

3.

Metres	Centimetres	Millimetres
	10.4	
	91	
	15.4	
	30.7	
	0.5	
	86.7	
	86.2	
	13	
	39.4	
	50.4	

4.

Metres	Centimetres	Millimetres
	724.4	
	575.7	
	598.3	
	907.7	
	264.6	
	978.4	
	369	
	292.3	
	263.7	
	472.9	

5.

Metres	Centimetres	Millimetres
		871
		259
		522
		916
		840
		983
		365
		587
		339
		112

6.

Metres	Centimetres	Millimetres
		9043
		1659
		1386
		4207
		1349
		4900
		2456
		3173
		4942
		7136

7.

Metres	Centimetres	Millimetres
		546
	84.4	
0.842		
	60.7	
		820
	89.4	
0.011		
		271
	83.9	
0.107		

8.

Metres	Centimetres	Millimetres
	767.7	
9.489		
	187.5	
		3966
		5257
2.534		
		5295
7.231		
	359.4	
		5304

1.

Kilometres	Metres
0.386	
0.178	
0.969	
0.77	
0.529	
0.019	
0.252	
0.481	
0.765	
0.95	

2.

Kilometres	Metres
1.397	
6.919	
6.618	
5.32	
8.288	
8.828	
8.372	
1.311	
2.127	
4.363	

3.

Kilometres	Metres
	921
	14
	222
	441
	711
	1000
	578
	353
	474
	629

4.

Kilometres	Metres
	1865
	5977
	7736
	3814
	8530
	7557
	1725
	3331
	5593
	2778

5.

Kilometres	Metres
	180
	485
0.95	
0.101	
	212
0.312	
0.098	
	251
	981
0.616	

6.

Kilometres	Metres
	8653
2.796	
5.671	
	4708
	6784
5.998	
	6882
6.688	
9.854	
	1766

Metres	Centimetres	Millimetres
0.327	**32.7**	**327**
0.794	**79.4**	**794**
0.329	**32.9**	**329**
0.818	**81.8**	**818**
0.651	**65.1**	**651**
0.215	**21.5**	**215**
0.802	**80.2**	**802**
0.57	**57**	**570**
0.845	**84.5**	**845**
0.453	**45.3**	**453**

2.

Metres	Centimetres	Millimetres
6.674	**667.4**	**6674**
5.016	**501.6**	**5016**
1.014	**101.4**	**1014**
3.125	**312.5**	**3125**
5.47	**547**	**5470**
8.215	**821.5**	**8215**
5.23	**523**	**5230**
1.551	**155.1**	**1551**
4.228	**422.8**	**4228**
9.774	**977.4**	**9774**

3.

Metres	Centimetres	Millimetres
0.104	10.4	**104**
0.91	91	**910**
0.154	15.4	**154**
0.307	30.7	**307**
0.005	0.5	**5**
0.867	86.7	**867**
0.862	86.2	**862**
0.13	13	**130**
0.394	39.4	**394**
0.504	50.4	**504**

4.

Metres	Centimetres	Millimetres
7.244	724.4	**7244**
5.757	575.7	**5757**
5.983	598.3	**5983**
9.077	907.7	**9077**
2.646	264.6	**2646**
9.784	978.4	**9784**
3.69	369	**3690**
2.923	292.3	**2923**
2.637	263.7	**2637**
4.729	472.9	**4729**

Metres	Centimetres	Millimetres
0.871	**87.1**	871
0.259	**25.9**	259
0.522	**52.2**	522
0.916	**91.6**	916
0.84	**84**	840
0.983	**98.3**	983
0.365	**36.5**	365
0.587	**58.7**	587
0.339	**33.9**	339
0.112	**11.2**	112

6.

Metres	Centimetres	Millimetres
9.043	**904.3**	9043
1.659	**165.9**	1659
1.386	**138.6**	1386
4.207	**420.7**	4207
1.349	**134.9**	1349
4.9	**490**	4900
2.456	**245.6**	2456
3.173	**317.3**	3173
4.942	**494.2**	4942
7.136	**713.6**	7136

7.

Metres	Centimetres	Millimetres
0.546	**54.6**	546
0.844	84.4	**844**
0.842	**84.2**	**842**
0.607	60.7	**607**
0.82	**82**	820
0.894	89.4	**894**
0.011	**1.1**	**11**
0.271	**27.1**	271
0.839	83.9	**839**
0.107	**10.7**	**107**

8.

Metres	Centimetres	Millimetres
7.677	767.7	**7677**
9.489	**948.9**	**9489**
1.875	**187.5**	**1875**
3.966	**396.6**	3966
5.257	**525.7**	5257
2.534	**253.4**	**2534**
5.295	**529.5**	5295
7.231	**723.1**	**7231**
3.594	359.4	**3594**
5.304	**530.4**	5304

1.

Kilometres	Metres
0.386	386
0.178	178
0.969	969
0.77	770
0.529	529
0.019	19
0.252	252
0.481	481
0.765	765
0.95	950

2.

Kilometres	Metres
1.397	1397
6.919	6919
6.618	6618
5.32	5320
8.288	8288
8.828	8828
8.372	8372
1.311	1311
2.127	2127
4.363	4363

3.

Kilometres	Metres
0.921	921
0.014	14
0.222	222
0.441	441
0.711	711
1	1000
0.578	578
0.353	353
0.474	474
0.629	629

4.

Kilometres	Metres
1.865	1865
5.977	5977
7.736	7736
3.814	3814
8.53	8530
7.557	7557
1.725	1725
3.331	3331
5.593	5593
2.778	2778

5.

Kilometres	Metres
0.18	180
0.485	485
0.95	950
0.101	101
0.212	212
0.312	312
0.098	98
0.251	251
0.981	981
0.616	616

6.

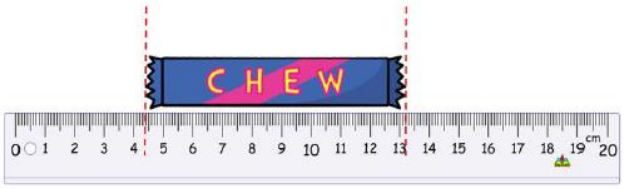
Kilometres	Metres
8.653	8653
2.796	2796
5.671	5671
4.708	4708
6.784	6784
5.998	5998
6.882	6882
6.688	6688
9.854	9854
1.766	1766

Problem Solving and Reasoning

Explain it!

Sam thinks his chew bar is 13.2 cm long.

Do you agree? Explain why.



Use it!

Dominic, Emma and Annabelle jumped a total of 34.77 m in a long jump competition.

Emma jumped exactly 200 cm further than Dominic.

Annabelle jumped exactly 2,000 mm further than Emma.

What distance did they all jump?
Give your answers in metres.

Use it!

Hamid made a stack of his collection of fishing magazines. Each magazine on the pile 2.5 mm thick. The total height of the stack was 11.5 cm high. How many magazines did he have in his pile?

Explain it!

Ribbon is sold in 200 mm pieces.
Georgie buys 4 metres of ribbon.
How many pieces does she buy?

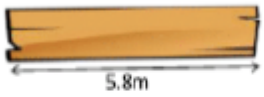
Ribbon costs 26 p per piece.
There are 2 special offers on the ribbon.

Five pieces for the price of four.	1 metre of ribbon for only £1

Which is the best offer?
Explain your answer.

Use it!

A plank of wood is 5.8 metres long.



Two lengths are cut from the wood.

175 cm

$3\frac{4}{5}$ m

How much of the wood is left?

Use it!

A 10 pence coin is 2 mm thick.

Daniel makes a pile of 10 pence coins worth £1.30

What is the height of the pile of coins in centimetres?

Explain it!

Kim says;

'One metre is 100 times bigger than one centimetre. One centimetre is 10 times bigger than one millimetre. So, one metre is 110 times bigger than one millimetre,'

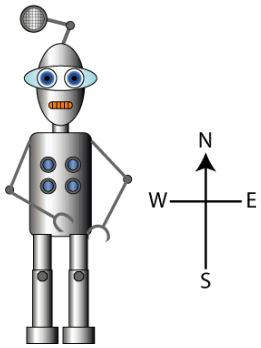
Is Kim correct?

Explain your answer.

Answers
Sam is wrong because his chew bar doesn't start at zero, it is actually 8.8 cm long.
Dominic jumped 9.59 m Emma jumped 11.59 m Annabelle jumped 13.59 m
There are 46 magazines in Hamad's pile.
Georgie buys 20 pieces of ribbon. 1 metre of ribbon for £1 is the best offer because buying five pieces (1 metre) for the price of four would cost £1.04
There is 25 cm left.
The pile of coins is 2.6 centimetres tall.
Kim is incorrect. She has added the number of times bigger together rather than multiplying. One metre is 1,000 times bigger than one millimetre.

Further Challenge

Chippy the Robot was sent on a journey.



Chippy started from his base station and went 2m (metres) N (North).
Then he turned and went 2m E (East), 3m N, then 3m W (West) and 2m S (South).
After that he went 2m E, 3m N and 3m W again.
Then he went 5m S and 4m E.
Finally, he went 1m S.
There he stopped.

How many metres altogether did Chippy travel on that journey?
How far and in what direction must Chippy travel to get back to his base station?

The next day Chippy went on another journey.

This time he started 3 m (metres) West and 4 m North of his base station. He went 6 m E, 2 m N, 4 m W and 1 m S. He then turned round and retraced his movements for 4 m.

Where did he end up?
Can you find the shortest route to get him back to his base station?
How many metres did he have to go to get back?
Can you find him a route back which is exactly 12 m?
How many different 12 m routes can you find?