ArkCurriculum+

08.03.21

Big ?: Can I convert between units of length?

Mathematics
Mastery
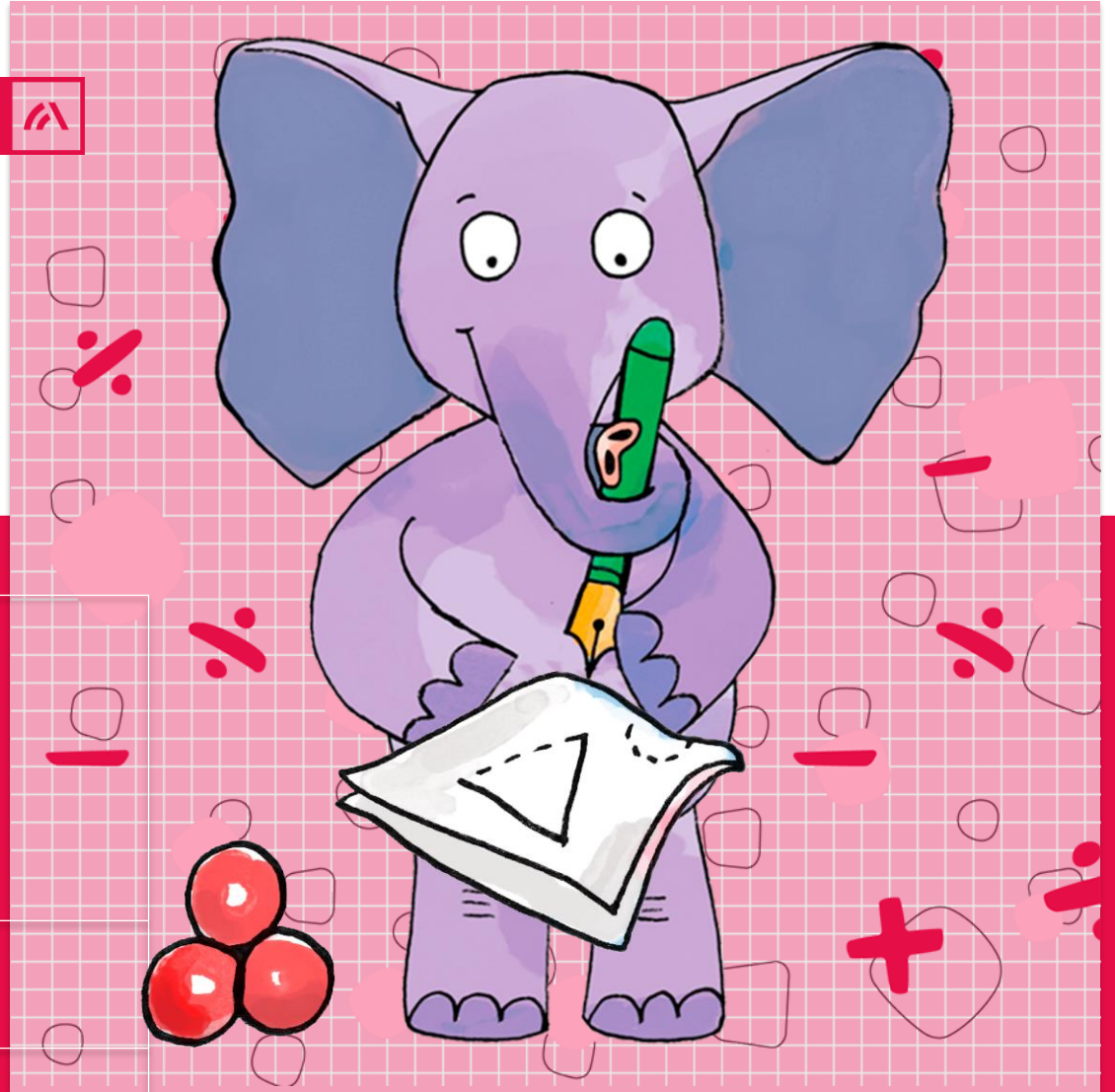
Can I convert between units of length?

length

breadth

height

distance

ruler

tape measure

millimetre (mm)

centimetre (cm)

metre (m)

kilometre (km)

Units of length

What unit would you use to measure each of these lengths?

What is you estimate for each?

mm/cm/m/km

The height of
the Eiffel Tower:
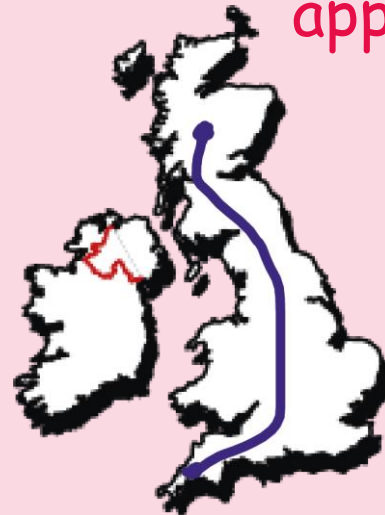approximately

The width of a door:
approximately

The length of an ant:
approximately

The distance from
Scotland to Cornwall:
approximately

How much your height has
changed since you were 7:
approximately 1

Units of length

What unit would you use to measure each of these lengths?

What is you estimate for each?

mm/cm/m/km

The height of
the Eiffel Tower:
approximately 300 m

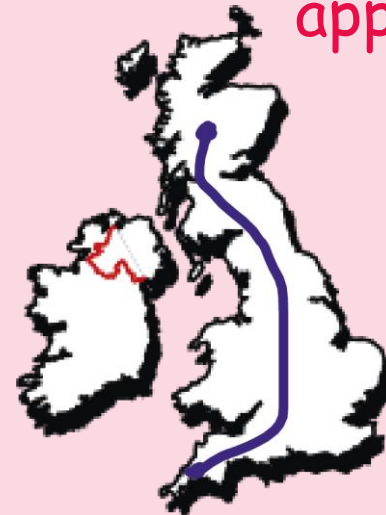The length of an ant:
approximately 6 mm

How much your height has
changed since you were 7:
approximately 10 cm

The width of a door:
approximately 800 mm

The distance from
Scotland to Cornwall:
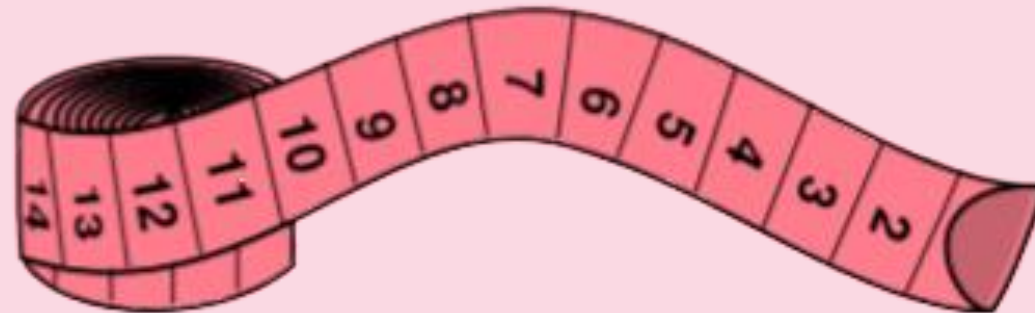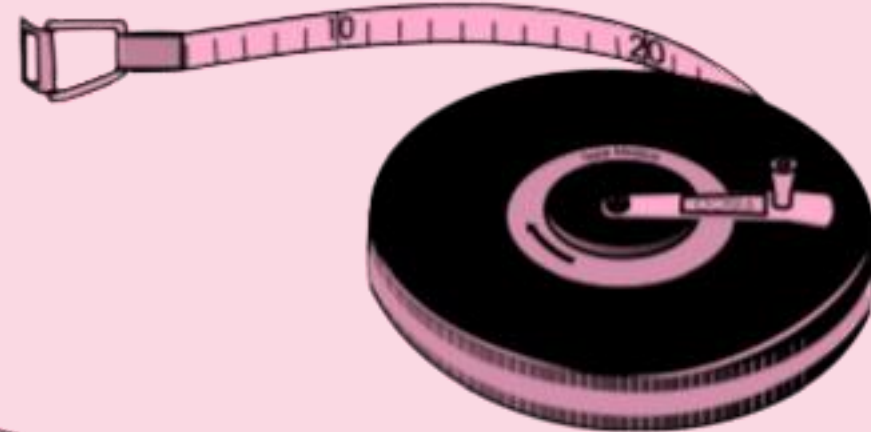approximately 950 km
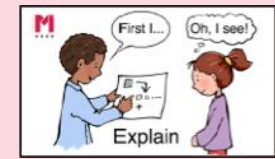
Units of length

Which units of length would be used?

Units of length

- What units and equipment are used to measure distance?
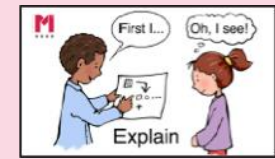- Why do we use different units of length?

1 lightyear

Units of length

What facts do you know that might help you to convert between units of length?

1	kilometre	=		metres
1	km	=		m
1	metre	=		centimetres
1	m	=		cm
1	centimetre	=		millimetres
1	cm	=		mm

Move the red boxes to reveal content.

Units of length

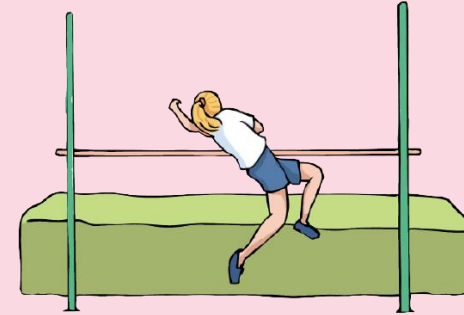What facts do you know that might help you to convert between units of length?

1	kilometre	=	1000	metres
1	km	=	1000	m
1	metre	=	100	centimetres
1	m	=	100	cm
1	centimetre	=	10	millimetres
1	cm	=	10	mm

First I... Oh, I see! Explain

Move the red boxes to reveal content.

Units of length

These are some results from the women's high-jump event. Which country's athlete jumped the highest?

Country	Height	Rank
Croatia	193 cm	
Spain	3 mm less than 2 m	
USA	1 m 880 mm	
Bulgaria	5 cm less than 2 m	

Units of length

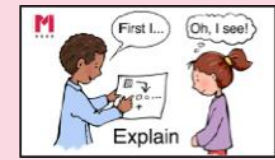These are some results from the men's long-jump event. Which country's athlete jumped the highest?

Country		Height	Rank
	South Africa	8.37 m	
	Great Britain	829 cm	
	USA	$8\frac{1}{4}$ metres	
	USA	38 cm more than 8 m	

Converting units of length

Convert the times and rank the athletes.

Men's high jump		
Country	**Height**	**Rank**
Qatar	2.36 m	
Great Britain	229 cm	
Canada	2 cm less than 2.4 m	
Ukraine	2 m 330 mm	

Converting units of length

These are the track events run at the Olympics. Convert each distance into kilometres.

Distance in m	Distance in km
10,000	
5,000	
1,500	
800	
400	
200	
100	

Converting units of length

One lap of the track is 400 m.
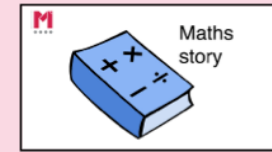How many laps are there in each event?

Distance in m	Distance in km	Number of laps
10,000	10	
5,000	5	
1,500	1.5	
800	0.8	
400	0.4	
200	0.2	
100	0.1	

Maths story

Mo metres

Mo started the race at the back. With ten laps to go, he moved into eighth position and continued to make his way forward. With 2,200 m left, he moved into fifth place. After 3 km of the race, he was in second place. After another lap, he moved into first position and for the next 800 m he controlled the race.
After 4,200 m, other athletes attempted to pass and Mo sped up to increase his lead. In the final straight, with just 100 m to go, he sprinted and pulled ahead of all the others. He crossed the line in first place, winning the double double.

Independent Task

Mo metres

Distance run (km)	Distance run (m)	Laps run	Laps to go	Distance to go (m)	Distance to go (km)
	0	0		5,000	
			10		
				2,200	
3					
			4		
					0.8
	4,200				
				100	

Independent Task

Celebrating success and addressing misconceptions

- What strategies did you use to complete the table?
- What known facts did you use?
- Which values did you find most difficult to calculate?