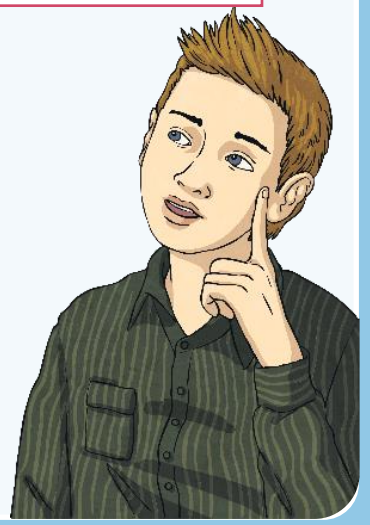
Maths SATs Survival

Revision Guide and Quiz

Measurement

Use, read, write and convert between standard units of measure	Read, write and convert time
Understand and use approximate equivalences between metric units and common imperial units	Calculate the perimeter of composite rectilinear shapes
Calculate the area of rectangles, triangles and parallelograms	Calculate, estimate and compare volume of cubes and cuboids using standard units



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Revise

Use, read, write and convert between standard units of measure

Measurement systems arranged with units in powers of ten are called metric systems. Metric systems can be converted by multiplying and dividing by 10, 100 or 1000.

Capacity **Used for measuring quantities of liquid**	Millilitre = ml Centilitre = cl Litre = l	10ml = 1cl 100ml = 10cl 1000ml = 100cl = 1l	1ml = 0.001l 10ml = 0.01l 100ml = 0.1l	l to cl cl to l l to ml ml to l	× 100 ÷ 100 × 1000 ÷ 1000
Length **Used for measuring distances and areas**	Millimetre = mm Centimetre = cm Metre = m Kilometre = km	10mm = 1cm 100mm = 10cm 1000mm = 100cm = 1m 1000m = 1km	1mm = 0.1cm 1cm = 0.01m 10cm = 0.1m 1m = 0.001km 10m = 0.01km 100m = 0.1km	cm to mm mm to cm m to cm cm to m km to m m to km	× 10 ÷ 10 × 100 ÷ 100 × 1000 ÷ 1000
Mass **Used for measuring weight**	Grams = g Kilograms = kg	1000g = 1kg	1g = 0.001kg 10g = 0.01kg 100g = 0.1kg	kg to g g to kg	× 1000 ÷ 1000

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Quiz

Use, read, write and convert between standard units of measure

Which of these measurements completes the statement?

574cm = ☐

57.4m

0.574m

5.74m

Try again!

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Quiz

Use, read, write and convert between standard units of measure

Which of these measurements completes the statement?

11 056g = ☐

1.1056kg

11kg 560g

11kg 56g

Try again!

Quiz

Use, read, write and convert between standard units of measure

Which of these measurements has the greatest value?

5001ml

501cl

5.1l

Try again!

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Quiz

Use, read, write and convert between standard units of measure

Which of these measurements completes the statement?

153cm = ☐

15.3mm

1530mm

15 300mm

Try again!

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Quiz

Use, read, write and convert between standard units of measure

Which of these measurements has the greatest value?

732cm

7.3m

7032mm

Try again!

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Quiz

Use, read, write and convert between standard units of measure

Which of these measurements has the greatest value?

14 072g

14.72kg

14 702g

Try again!

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Quiz

Use, read, write and convert between standard units of measure

Which sign makes this statement true?

23.087km [>] 23 080m

<

>

Try again!

Quiz

Use, read, write and convert between standard units of measure

Which sign makes this statement true?

5.276l < 5300ml

<

>

Try again!

Quiz

Use, read, write and convert between standard units of measure

Which sign makes this statement true?

42 309g [>] 42kg 39g

<

>

Try again!

Choose another objective

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Revise

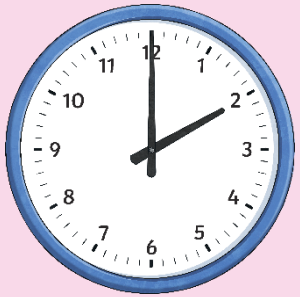
Read, write and convert time

Units of Time		
	Second	1 minute = 60 seconds
	Minute	1 hour = 60 minutes
	Hour	1 day = 24 hours
	Day	1 week = 7 days
	Week	1 year = 365 days
	Month	1 year = 12 months
	Year	1 decade = 10 years
	Decade	1 century = 100 years
	Century	1 millennium = 1000 years
	Millennium	

The Earth takes 365 $\frac{1}{4}$ days to orbit the Sun, so every fourth year has 366 days which is known as a leap year.

The months of the year also have a varying amount of days.

- Analogue clocks show 12-hour time.
- Time before midday is shown using a.m.
- Time after midday is shown using p.m.



- Digital clocks show either 12-hour or 24-hour time.
- For 24-hour time, use four digits.
- To convert 12-hour p.m. time to 24-hour time, add 12 hours.

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Quiz

Read, write and convert time

Which of these measurements completes the statement?

3 decades = ☐

300 years

30 years

3 years

Try again!

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Quiz

Read, write and convert time

Which of these measurements completes the statement?

7 minutes = ____

460 seconds

490 seconds

420 seconds

Try again!

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Quiz

Read, write and convert time

Which of these measurements completes the statement?

9 hours = ☐

540 minutes

540 seconds

630 seconds

Try again!

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Quiz

Read, write and convert time

Calculate and convert this time duration into minutes.

Start: 11:20

Finish: 13:45

140 minutes

145 minutes

150 minutes

Try again!

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Quiz

Read, write and convert time

Calculate and convert this time duration into minutes.

Start: 14:35

Finish: 16:15

100 minutes

105 minutes

95 minutes

Try again!

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Quiz

Read, write and convert time

How would this time be displayed on a 24-hour clock?

9:28 p.m.

20:28

22:28

21:28

Try again!

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Quiz

Read, write and convert time

How would this time be displayed on a 12-hour clock?

18:13

5:13 p.m.	6:13 p.m.	7:13 p.m.

Choose another objective

Try again!

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Revise

Understand and use approximate equivalences between metric units and common imperial units

Imperial measures are different to metric measurements as they do not use a base ten system. Therefore, conversions between metric and imperial measurements are only approximate.

Capacity Used for measuring quantities of liquid	Pints (pt) Gallons (gal)	8 pints = 1 gallon	1 pint = approximately 570ml 1 litre = approximately 1.8 pints
Length Used for measuring distance and area	Inches (in) Feet (ft) Yard (yd) Miles (mi)	12 inches = 1 foot 3 feet = 1 yard 1760 yards = 1 mile	1 inch = approximately 2.5cm 1 foot = approximately 30cm 1 mile = approximately 1.6km 1 kilometre = approximately 0.6 miles
Mass Used for measuring weight	Ounces (oz) Pounds (lb) Stones (st)	16 ounces = 1 pound 14 pounds = 1 stone	1 ounce = approximately 28g 100g = approximately 3.5 ounces 1 pound = approximately 450g 1kg = approximately 2.2 pounds 1 stone = approximately 6.4kg

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Quiz

Understand and use approximate equivalences between metric units and common imperial units

If 1 litre is approximately 1.8 pints, which of these measurements completes the statement?

5 litres = ☐

8 pints	8.5 pints	9 pints

Try again!

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Quiz

Understand and use approximate equivalences between metric units and common imperial units

If 1 inch is approximately 2.5cm, which of these measurements completes the statement?

15cm = ☐

6 inches

5 inches

3 inches

Try again!

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Quiz

Understand and use approximate equivalences between metric units and common imperial units

If 1km is approximately 0.6 miles, which of these measurements completes the statement?

78km = ☐

46.4 miles

46.8 miles

46.2 miles

Try again!

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Quiz

Understand and use approximate equivalences between metric units and common imperial units

If 1oz is approximately 28g,
which of these measurements completes the statement?

280g = ☐

1oz	100oz	10oz

Choose another objective

Try again!

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Revise

Calculate the perimeter of composite rectilinear shapes

Perimeter is the distance around the outside of a shape.

The **perimeter of a rectangle** can be calculated using the length and width measurements.

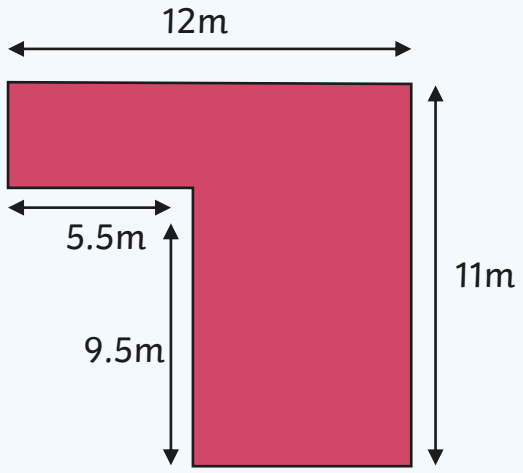
Formula for calculating the perimeter of a rectangle:

$$2l \times 2w = p$$

or

$$2(l + w) = p$$

A **rectilinear shape** is a polygon where all the angles are right angles. To find the perimeter of a rectilinear shape, add up the outside edges of the shape. You may have to use reasoning to find missing lengths:



Perimeter of rectilinear shape =
12m + 11m + 6.5m + 9.5m + 5.5m + 1.5m = **46m**

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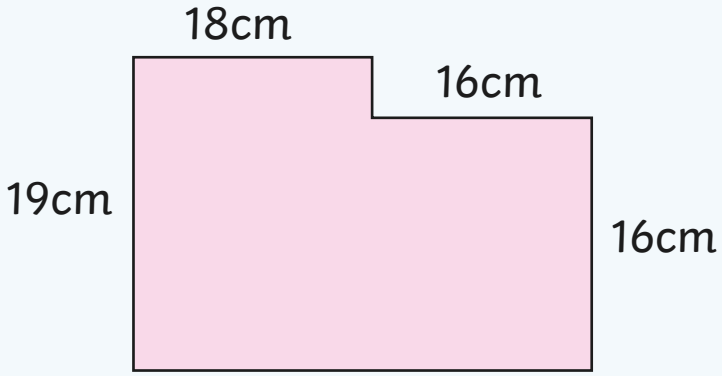
Quiz

Calculate the perimeter of composite rectilinear shapes

Calculate the perimeter of this polygon:



104cm

216cm

105cm

Try again!

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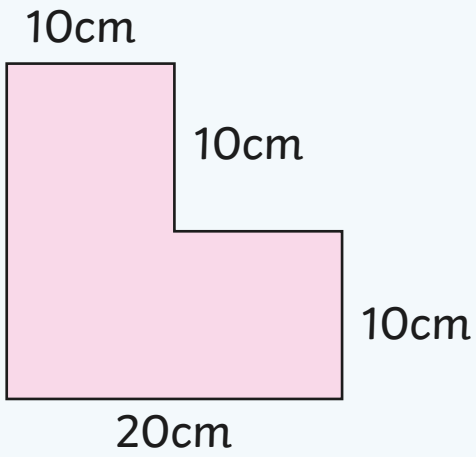
Quiz

Calculate the perimeter of composite rectilinear shapes

Calculate the perimeter of this polygon:



60cm

100cm

80cm

Try again!

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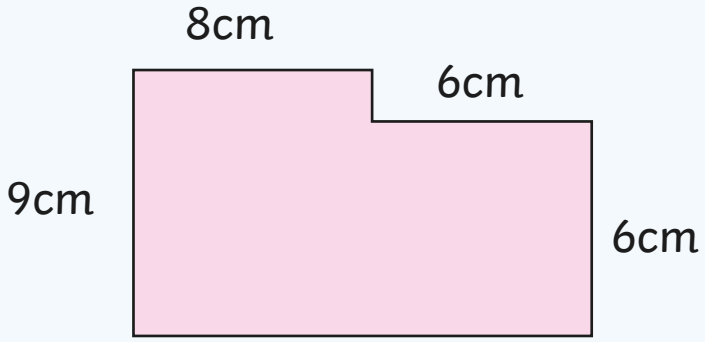
Quiz

Calculate the perimeter of composite rectilinear shapes

Calculate the perimeter of this polygon:



44cm

46cm

45cm

Choose another objective

Correct!

Try again!

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Revise

Calculate the area of rectangles, triangles and parallelograms

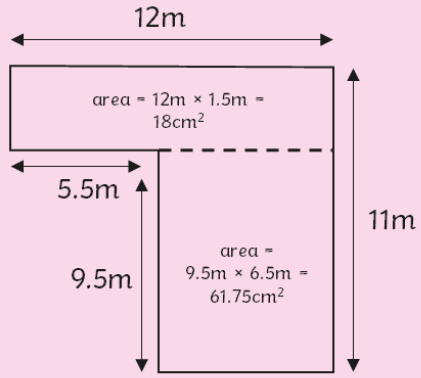
Area is measured in 'square' units. It measures the surface area of a 2D shape.

Calculating the area of a rectangle

The **area of a rectangle** can be calculated using the length and width measurements:

Area = Length × Width

To find the area of a rectilinear shape, it is easier to split it into different sized rectangles. You may have to use reasoning to find missing lengths:



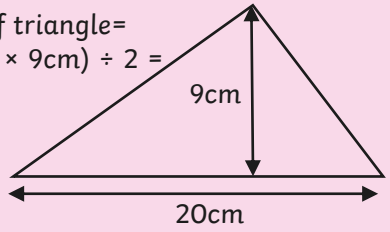
Area of rectilinear shape = 18cm² + 61.75cm² = 79.75cm²

Calculating the area of a triangle

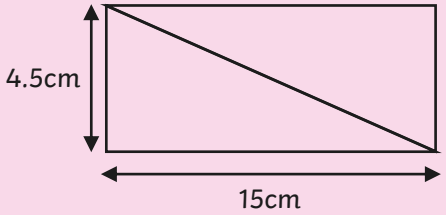
The **area of a triangle** can be calculated using the base and height measurements:

Area = (Base × Height) ÷ 2

Area of triangle= (20cm × 9cm) ÷ 2 = **90cm²**



Two identical right-angled triangles tessellate together to make the same area as a rectangle:

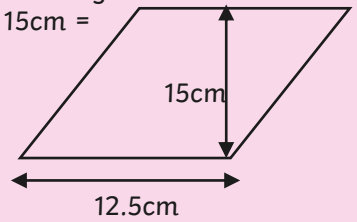


Calculating the area of a parallelogram

The **area of a parallelogram** can be calculated using the base and height measurements:

Area = Base × Height

Area of parallelogram= 12.5cm × 15cm = **187.5cm²**



If you visualise a parallelogram as a rectangle and two right-angled triangles, you can see how the area of a parallelogram relates to the area of a rectangle.

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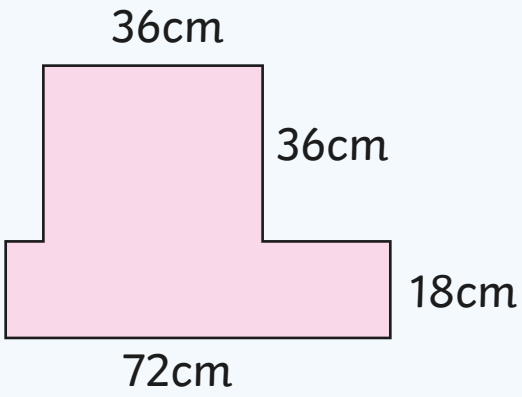
Quiz

Calculate the area of rectangles, triangles and parallelograms

Calculate the area of this polygon:



2572cm^2	2582cm^2	2592cm^2

Try again!

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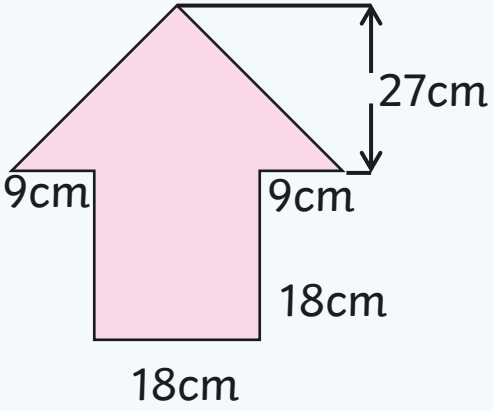
Quiz

Calculate the area of rectangles, triangles and parallelograms

Calculate the area of this polygon:



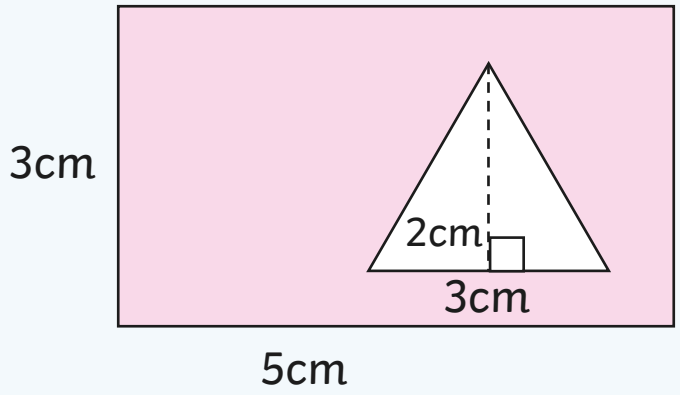
810cm^2	820cm^2	830cm^2

Try again!

Quiz

Calculate the area of rectangles, triangles and parallelograms

Calculate the area of the shaded polygon:



$13cm^2$	$12cm^2$	$14cm^2$

Try again!

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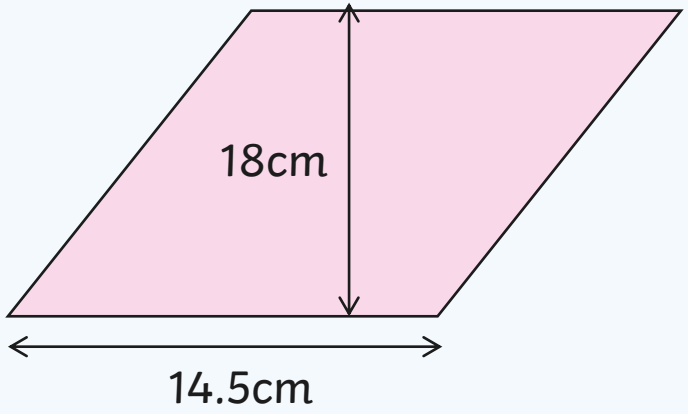
Quiz

Calculate the area of rectangles, triangles and parallelograms

Calculate the area of the shaded polygon:



$262cm^2$	$260cm^2$	$261cm^2$

Choose another objective

Try again!

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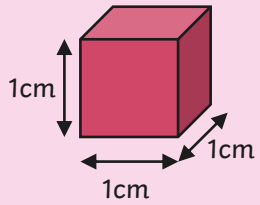
Revise

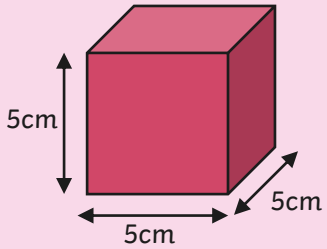
Calculate, estimate and compare volume of cubes and cuboids using standard units

Volume is measured in 'cubed' units. It is the measure of how much space a 3D object occupies.

A cubic centimetre is a cube that has the length, width and height of 1cm.



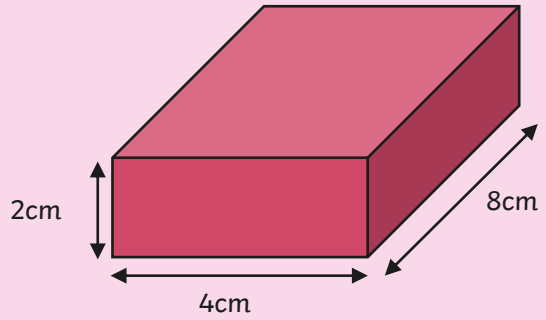
The volume of any **cube** can be found using the formula **length of side^3.**



Volume = 5cm × 5cm × 5cm = **125cm^3**

The volume of a cuboid can be found using the formula:

length × width × height



Volume = 4cm × 8cm × 2cm = **64cm^3**

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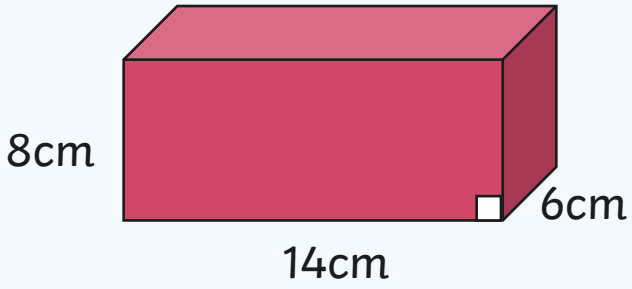
Quiz

Calculate, estimate and compare volume of cubes and cuboids using standard units

Calculate the volume of this cuboid:



672cm^2

662cm^2

652cm^2

Try again!

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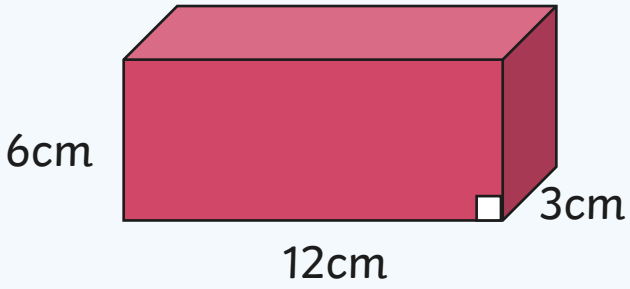
Quiz

Calculate, estimate and compare volume of cubes and cuboids using standard units

Which is the best estimate of the volume of this cuboid?



150cm^2	200cm^2	250cm^2

Correct!

Try again!

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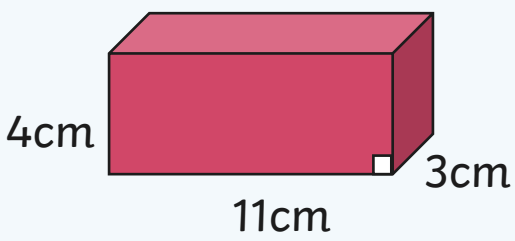
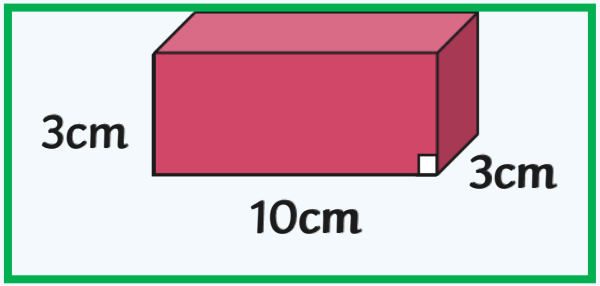
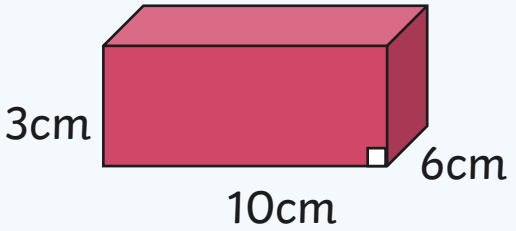
Quiz

Calculate, estimate and compare volume of cubes and cuboids using standard units

Which cuboid has the greatest volume?







Choose another objective

Try again!

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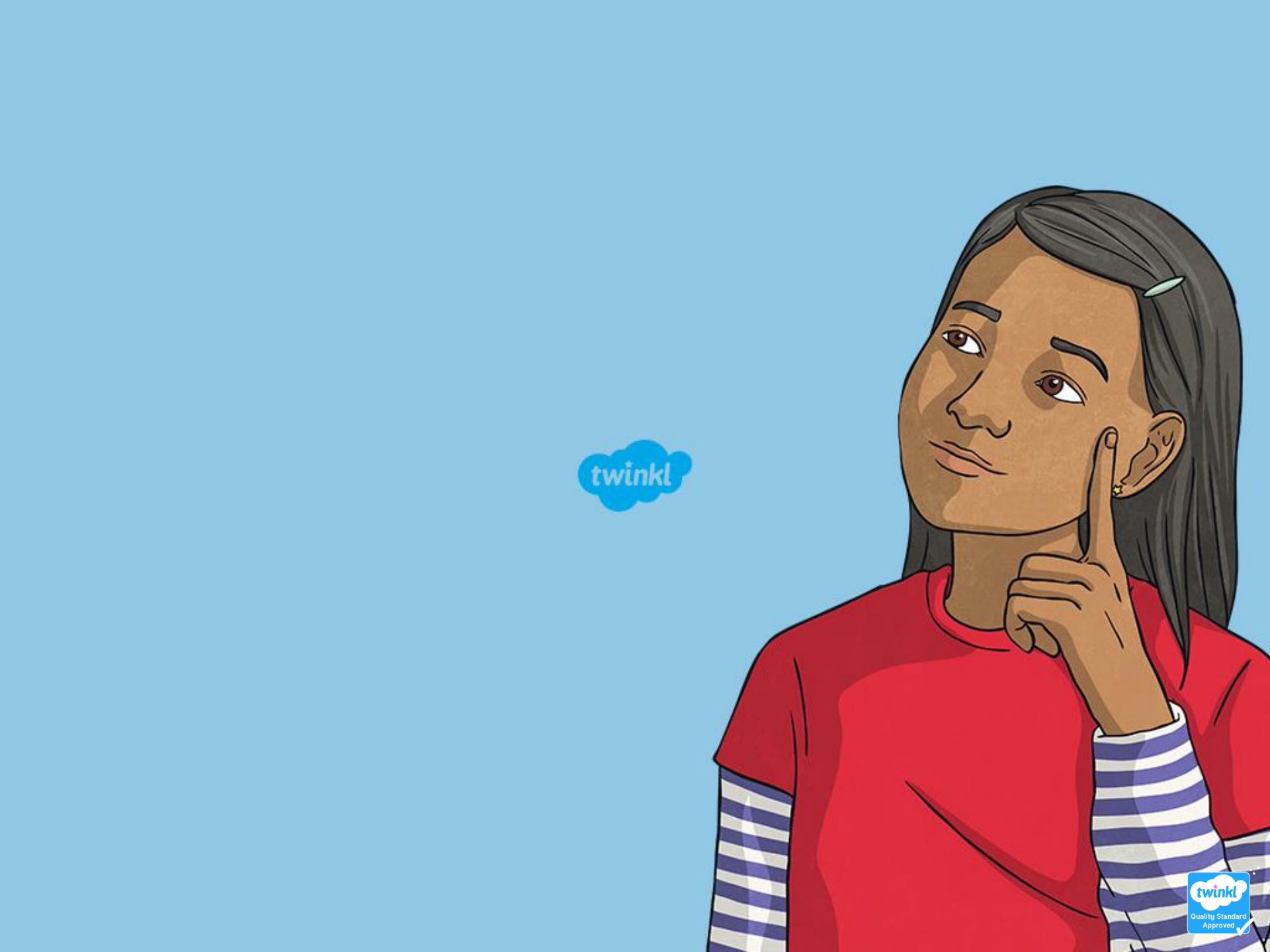
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