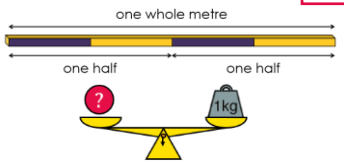
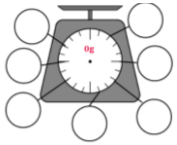
Measures: Overview

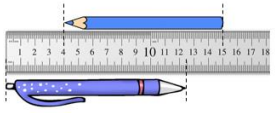
I think the tray is going to be 30 centimetres long because it looks just over double the length of the book, and the book is 13 centimetres long.

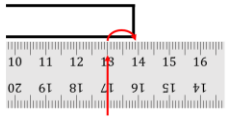
Concepts: Compare, measure and calculate, Converting measures Time, Money,

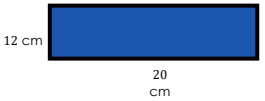
The ___ is heavier than the ____.











Reception

- Use everyday language to compare length, mass/weight and capacity.

Year 1

- Compare, describe, measure, record and solve practical problems for: lengths and heights; mass/weight; capacity and volume; time
- Sequence events in chronological order using language
- Recognise and use language relating to dates, including days of the week, weeks, months and years
- Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times
- Recognise and know the value of different denominations of coins and notes

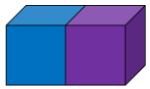
Year 2

- Choose and use appropriate standard units to estimate and measure length/height; mass; temperature; capacity
- Compare and order lengths, mass, volume/capacity and record the results using >, < and =
- Compare and sequence intervals of time
- Tell and write the time to five minutes
- Know the number of minutes in an hour and the number of hours in a day
- Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value
- Find different combinations of coins that equal the same amounts of money
- Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change

Year 3

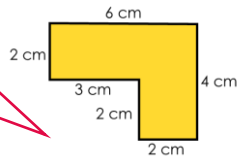
- Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
- Measure the perimeter of simple 2-D shapes
- Tell and write the time from an analogue clock, including using Roman numerals and 12/24hr clocks
- Estimate and read time with increasing accuracy to the nearest minute;
- Know the number of seconds in a minute and the number of days in each month, year and leap year
- Compare durations of events
- Add and subtract amounts of money to give change

Miles	Kilometres
0	0
5	8
10	16
	24
20	32



$1\text{ cm} \times 2\text{ cm} \times 1\text{ cm} = 2\text{ cm}^3$

Area is a measure of something two-dimensional; the amount of surface taken up by a two-dimensional shape



Metres and Centimetres	Metres	Centimetres
2 m 65 cm	2.65 m	265 cm
		311 cm
	0.15 m	
1 m 5 cm		

Perimeter is a measure of length which is a measure of something one-dimensional.

Year 4

- Measure and calculate the perimeter of a rectilinear figure in cm/m (including squares)
- Find the area of rectilinear shapes by counting squares
- Estimate, compare and calculate different measures, including money in pounds and pence
- Solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days
- Convert between different units of measure
- Read, write and convert time between analogue and digital 12- and 24-hour clocks

Year 5

- Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
- Calculate and compare the area of rectangles (including squares), including using standard units, cm^2 and m^2, and estimate the area of irregular shapes
- Estimate volume and capacity
- Use all four operations to solve problems involving measure
- Solve problems involving converting between units of time
- Convert between different units of metric measure
- Understand and use approximate equivalences between metric units and common imperial units

Year 6

- Solve problems involving the calculation and conversion of units of measure (up to 3dp)
- Recognise that shapes with the same areas can have different perimeters and vice versa
- Recognise when it is possible to use formulae for area and volume of shapes
- Calculate the area of parallelograms and triangles
- Calculate, estimate and compare volume of cubes and cuboids using standard units (cm^3 m^3), and extending to other units (e.g. mm^3 km^3)
- Use, read, write and convert between standard units (up to 3dp)
- Convert between miles and kilometres

Measures: Concept breakdown

Note: Statutory Curriculum requirements are in **bold**

Reception →	Year 1 →	Year 2 →	Year 3 →	Year 4 →	Year 5 →	Year 6
Compare, measure and calculate (length and area; mass/weight; volume and capacity; temperature)						
Estimate, compare and describe measures	*Use everyday language to compare length, mass/weight and capacity.* Unit 5 Unit 18	**Compare, describe and solve practical problems for:** • **Lengths and heights** • **Mass/weight** • **Capacity/volume** Unit 11 Unit 16	**Compare and order lengths, mass, volume/capacity and record the results using >,< and =** Unit 4 (length) Unit 13 (capacity) Unit 14 (mass)	**Compare lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)** *Pupils estimate units of measure* Unit 11	**Estimate, compare and calculate different measures, including money in pounds and pence** Unit 10	**Estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]** Unit 13	**Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [for example, mm³ and km³]** Unit 6
Measure and read scales		**Measure and begin to record the following:** • **Lengths and heights** • **Mass/weight** • **Capacity/volume** *Pupils initially use non-standard units e.g. hands and progress to explore the concepts of 1 meter and 1 kilogram* Unit 11 Unit 16	**Choose and use appropriate standard units to estimate and measure:** • **length/height in any direction (m/cm);** • **mass (kg/g);** • **temperature (°C);** • **capacity (litres/ml)** **to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels** Unit 4 (length) Unit 13 (capacity) Unit 14 (mass)	**Measure, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/ capacity (l/ml)** *Pupils develop confidence in estimating measures in standard units and begin to use mixed measures e.g. 1 kg and 200g* Unit 5 Unit 11	Continue to choose appropriate units of measurement, read scales and calculate with measure in Maths Meetings	Continue to choose appropriate units of measurement, read scales and calculate with measure in Maths Meetings	
Measure and calculate: Perimeter and area				**Measure the perimeter of simple 2-D shapes** Unit 5	**Measure and calculate the perimeter of a rectilinear figure in cm/m (including squares)** **Find the area of rectilinear shapes by counting squares** *Pupils begin to explore calculting the areas of rectangles in preparation for Year 4.* Unit 9	**Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres** **Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm²) and square metres (m²), and estimate the area of irregular shapes** Unit 5	**Recognise that shapes with the same areas can have different perimeters and vice versa** **Recognise when it is possible to use formulae for area and volume of shapes** **Calculate the area of parallelograms and triangles** Unit 6

Measures: Concept breakdown

Note: Statutory Curriculum requirements are in **bold**

	Reception →	Year 1 →	Year 2 →	Year 3 →	Year 4 →	Year 5 →	Year 6
Compare measure and calculate (length and area; mass/weight; volume and capacity; temperature)							
Applying to problems in context			**Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change** *Pupils solve word problems that involve length capacity and volume* Unit 4 (length) Unit 10 (money) Unit 13 (capacity and volume) Unit 14 (mass)	*Pupils solve addition, subtraction, multiplication and division problems in context* Unit 11	*Pupils apply knowledge of units of measure to plan and solve problems in context* Unit 10	**Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling** Unit 11	**Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate** Unit 6
Converting							
Converting metric units		*Whilst exploring measures throughout KS1 and Year 3 pupils should become familiar with simple equivalents, e.g. 1 m = 100cm, 1 kg = 1000kg etc to prepare them for conversion problems in Year 4.*			**Convert between different units of measure [for example, kilometre to metre; hour to minute]** Unit 10	**Convert between different units of metric measure** **Understand and use approximate equivalences between metric units and common imperial units** Unit 10	**Convert between miles and kilometres** **Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate** Unit 6
Converting units of time			**Know the number of minutes in an hour and the number of hours in a day** Unit 7	**Know the number of seconds in a minute and the number of days in each month, year and leap year** Unit 8	**Solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days** Unit 7	**Solve problems involving converting between units of time** Unit 10	See above.

Measures: Concept breakdown

Note: Statutory Curriculum requirements are in **bold**

	Reception →	Year 1 →	Year 2 →	Year 3 →	Year 4 →	Year 5 →	Year 6
Time							
Describe and calculate the passage of time		**Sequence events in chronological order using language** **Recognise and use language relating to dates, including days of the week, weeks, months and years** Unit 6	**Compare and sequence intervals of time** Unit 7	**Compare durations of events [for example, to calculate the time taken by particular events or tasks]** Unit 8	*Pupils should continue to compare durations of events in Maths Meetings*		
Telling the time		**Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times** Unit 6	**tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times** Unit 7	**Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight** Unit 8 Pupils use both *analogue and digital 12-hour clocks and record their times.* Unit 8	**Read, write and convert time between analogue and digital 12- and 24-hour clocks** Unit 7	*Pupils should continue to practise reading the time and converting between 12- and 24-hour clocks in their Maths Meetings*	
Understanding equivalent measures of time			**Know the number of minutes in an hour and the number of hours in a day** Unit 7	**Know the number of seconds in a minute and the number of days in each month, year and leap year** Unit 8	**Solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days** Unit 7	**Solve problems involving converting between units of time** Unit 10	*Pupils should continue to convert between units of time in Maths Meetings*

Measures: Concept breakdown

Note: Statutory Curriculum requirements are in **bold**

Reception →	Year 1 →	Year 2 →	Year 3 →	Year 4 →	Year 5 →	Year 6
Money						
Recognise coins and notes	*Pupils begin to familiar with coins and should explore using them in context through play e.g. class shop* Unit 17	**Recognise and know the value of different denominations of coins and notes** Unit 14	**Recognise and use symbols for pounds (£) and pence (p)** Unit 10	*Pupils consolidate KS1 objectives in Maths Meetings, focusing on represent a given amount of money in different ways in Year 3 and relating to knowledge of decimals in Year 4.*		
Calculate using money		*Pupils become familiar with adding and subtracting* amounts of money Unit 14	**Find different combinations of coins that equal the same amounts of money** Unit 10 **Combine amounts to make a particular value** Unit 10 **Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change** Unit 10	**Add and subtract amounts of money to give change, using both £ and p in practical** Unit 1	**Estimate, compare and calculate different measures, including money in pounds and pence** Unit 10	*Pupils continue to reason, calculate and solve problems in the context of money* Unit 14	*Pupils solve problems involving money and units of measure* Unit 6