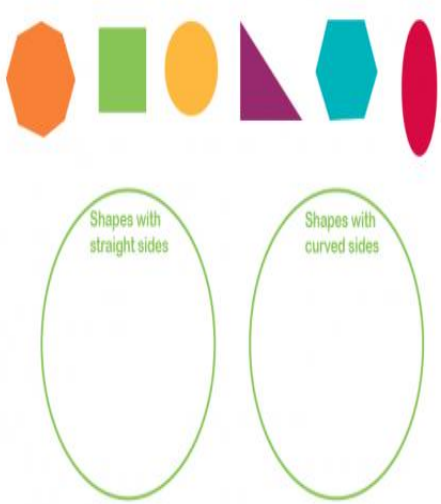
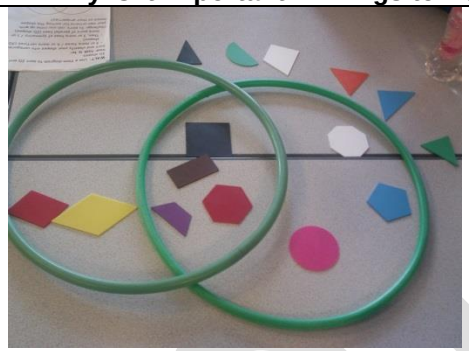
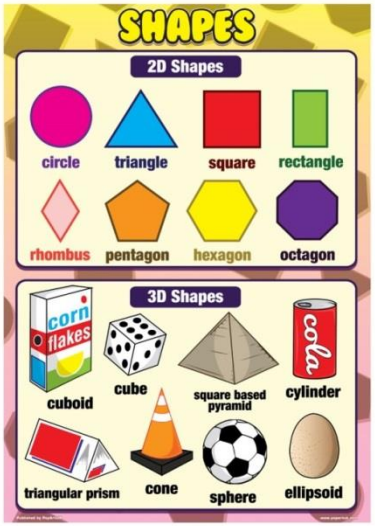
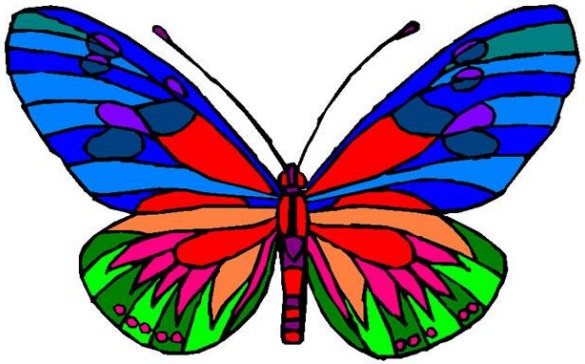
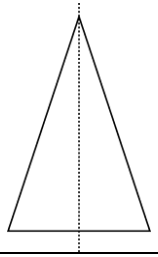
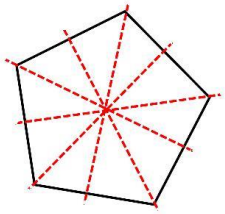
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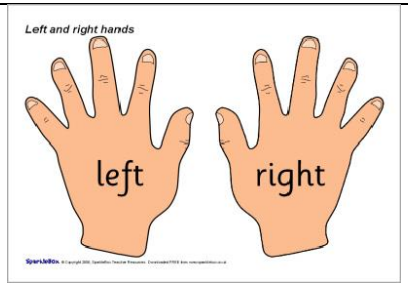
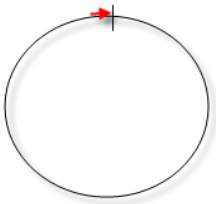
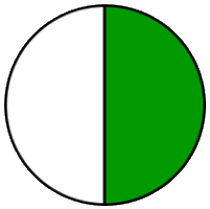
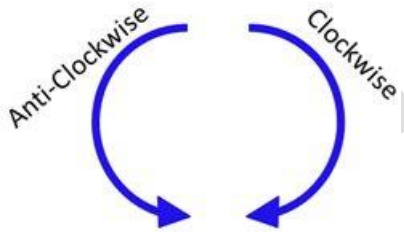
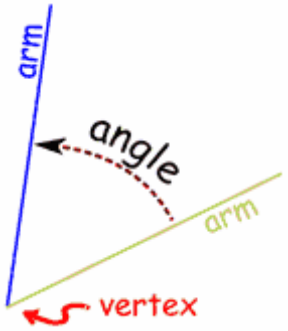
Year 2 Geometry and Measures

By the end of Year Two, children have been taught to:

Objective	Why is it important? Things to watch out for! Taught strategies
Compare and sort common 2-D and 3-D shapes	  2D shapes are shapes that only have two dimensions, such as; width and height. 2D shapes include; a rectangle, circle and triangle. 2D shapes are flat! 3D shapes are shapes that have three dimensions, such as: width, height and depth. 3D shapes include; a cube, cuboid and pyramid. 3D shapes are solid! **Common errors:** • If we hold a triangle upside down and ask a child if it is still a triangle. The child sometimes says no! If it has three sides it is a triangle, no matter which way round we hold it. • If we hold a square at an angle some children say it is a diamond! There is no mathematical shape called a diamond (one wears diamonds on one's finger!) . A square is a square, no matter which way round we hold it. • Some children often call a rhombus a diamond – a rhombus is a four sided shape with equal sides and two angles less than a right angle and two angles more than a right angle. For children to be able to sort and compare 2d and 3d shapes, they have to be able to name shapes and the features of shapes, in order to be able to tell what is the same and what is different.

Year 2

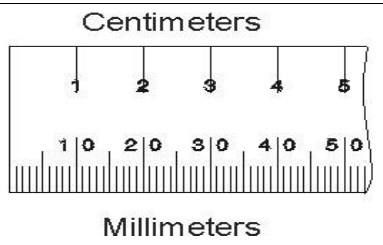
Identify and describe features of 2d and 3d shapes		*Vocabulary: curved, flat, round, straight, corner/vertex, point, line, faces, sides, right angle* *What shape am I?* *I have four straight sides and four right angles.* *Two of my sides are long and two of my sides are short.* *What am I?*
Identify and describe lines of symmetry	   	Symmetry is when one shape becomes exactly like another, if we flip, slide or turn it. It is the same on both sides! The simplest type of symmetry is "reflection" or "mirror image". Shapes can have more than one line of symmetry.

Use vocabulary to describe position direction and movement	 .   Half turn   	Top tip :  Make an L with fingers on the left hand making sure the L is the correct way round. Teaching children about direction and movement within mathematics lays the foundations for telling the time, as well as rotation and symmetry in shape. Turns can be described with many different examples, such as: a whole hour – the minute hand travels around the whole clock a whole turn – turn to the right and keep going until you are facing the place that you started half turn – half way around the clock from o'clock to half past OR a turn where you are facing the opposite way.
Identify right angles in a 2d shape	To be able to identify a right angle we need to know what an angle is. A definition and illustration of an angle is seen here on the right. An angle is the amount of turn between two straight lines that have a common end point (the vertex). A right angle is an angle which is equal to 90 degrees or one quarter of a whole turn. 

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To help support children’s ability to recognise right angles we create angle eaters (a bit like pacman), which have a mouth that is ninety degrees. Therefore an angle that fits perfectly in his mouth is a right angle. If it is too small or too big it is not a right angle.</td>
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<td>Choose and use appropriate standard units to estimate and measure; mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.</td>
<td>A lot of measures work is introduced through real life contexts and practical problem solving, in order to ensure children have a rich experience which will develop their understanding of measure.


A litre is just a lot of millilitres put all together. In fact, 1000 millilitres makes up 1 litre.
1 litre = 1,000 millilitres
Litres are often written as L (for short), so "3 L" means "3 Litres".
Milk, juice and other drinks are often sold in litres.
Try looking at labels, so the next time you are at the shop or cupboard. Take a minute and check out how many litres (or millilitres) are in each container!
Once we have 1,000 grams, we have 1 kilogram.
1 kilogram = 1,000 grams
A dictionary has a mass of about one kilogram.
Kilograms are great for measuring things that can be lifted by people (sometimes very strong people are needed of course!). Kilograms are often written as kg (that is a "k" for "kilo" and a "g" for "gram"), so "10 kg" means "10 kilograms".</td>
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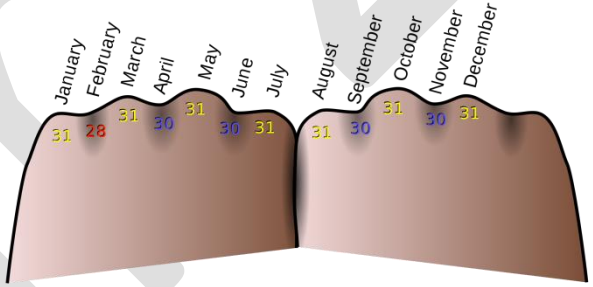
Year 2

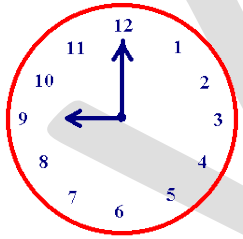
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A metre is equal to 100 centimetres.

1 metre = 100 centimetres

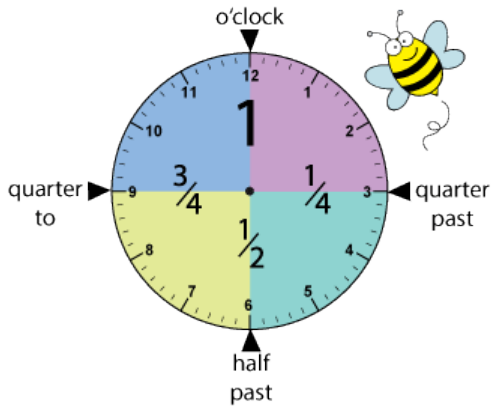
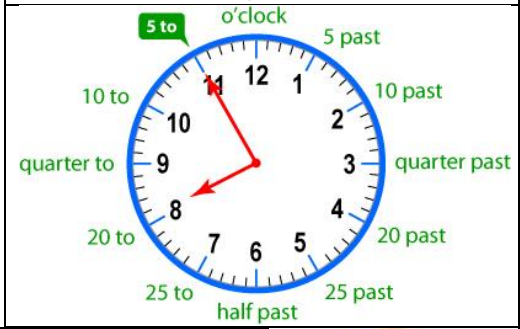
Metres might be used to measure the length of a house, or the size of a playground.
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<td>Order units of time in relation to duration second, minute, hour, day, week, fortnight, month, year, decade, century</td>
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In Year 1, children spend a lot of time learning the days of the week and months of the year. This is continued on a daily basis in Year 2, as part of the daily provision. The day, number of the day, month and year is displayed to help children to consolidate their understanding of time and how it passes. We also introduce the ‘short date’ for example 2.4.16 – the second day of the month, the fourth month of the year and so on.

Building on the fact that children know there are seven days in a week, we look at other periods of time.
week — 7 days
months — 4 weeks (approximately)
year — 365 days (unless it is a leap year)
12 months
decade — 10 years
century — 100 years


Using our knuckles is a great way of working out how many days there are in each month.
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<td>Tell and write the time to five minutes, including quarter past/to the hour</td>
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Progression in telling the time
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o’clock

Half past
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o’clock and half past
Telling the time can be a challenging thing to learn. This is why we focus on teaching times, such as o’clock and half past, before discussing any other times. Creating a meal time visual planner for breakfast, lunch and dinner at these key times may help children to talk about important times, as well as the ability to tell the time.
‘If the large minute hand is pointing to the 12, it means it is telling us that it is o’clock. If the small hour hand is pointing to the 5 and the large hand is pointing to the 12 it is telling us that is 5 o’clock.’ Patience is the key with telling the time!

Common errors:
Children get mixed up between the hour hand and the minute hand.
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Year 2

Know the number of minutes in an hour and the number of hours in a day.		**o'clock, half past, quarter past and quarter to** Half past, quarter to and quarter past can be taught alongside fractions when thinking about half a circle and quarters of circles. We also focus on teaching children that there are 15 minutes in quarter of an hour and 30 minutes in half an hour. We encourage children to count the small divisions on a clock face to find out how many minutes there are in quarter of an hour and half an hour.
		**Minutes to and minutes past** When we look at minutes past the hour we discuss how every time the minute hand passes one of the numbers another five minutes have passed. Once children have learned this concept they, with practise, can quickly work out the time. Labelling the household clocks can give valuable practise to a child. Quarter to often proves to be a lot more challenging because instead of counting clockwise minutes past the hour, we count anti-clockwise around the clock from twelve. Many children often say forty minutes past three rather than twenty minutes to four.
Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.		As with all aspects of number, children are taught to play around with values to look at how many different ways they can create a specific amount. For example; 'How many different ways can you make £1.00?' 50p+50p= £1.00 50p+20p+20p+10p = £1.00 50p+ 20p+10p+10p+10p= £1.00 Plus many more combinations. The ability to play around with these values enables children to calculate more **Common errors** • Not realising that there are only a certain amount of coins and we have to create certain values with a combination of errors. For instance a child thinking there is a three pence piece.

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£2.50

As children progress in their learning about money, they are introduced to the symbols of pounds and pence. Undoubtedly, children will have seen the pounds symbol written when they are out shopping. However, in class we develop understanding behind what the decimal point means.

£2.50

On this side of the decimal point the number tells us how many whole pounds we have.

On this side of the decimal point the number tells us how many parts of the pound we have, therefore the pence.
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<td>Solve simple money problems in a practical context</td>
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As with any problem solving, children are encouraged to apply their understanding to the situation. At times, some children do find problem solving a challenge, mainly due to the fact that they have to read the problem and recognise whether the problem requires them to add or subtract. Understanding the problem and what it is asking is paramount in solving the problem.

Examples of some problems children may experience:
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How much money is in the hand?</td>
<td>A toy costs eight pounds fifty. Kemi pays with a ten pound note. How much change does she get?</td>
<td>Tim bought two fruits. He spent twenty pence altogether. He bought an orange for eleven pence. What did he pay for the other fruit?</td>
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<td>At the shop, all packets of crisps cost the same. Hannah buys 2 packets. She pays 40 pence. How much does one packet cost?</td>
<td>How many 2ps do you need to make 50p?

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Year 7