

# Place value

CONCEPT	Year 3	Year 4	Year 5	Year 6
Counting and calculation using place value	We can count in any steps from any number.			
Number and it's structure	Place value is the value of a digit in a number. The first digit of a number has the highest value. Ten ones is equal to one ten. Ten tens is equal to one hundred. Ten hundreds is equal to one thousand. One hundred is ten times bigger than one ten. One ten is ten times bigger than a one. Partitioning is splitting a number into parts. Equals (=) means the same as.		A decimal is part of a whole number.	
Ordering and comparing	The first digit of a number has the highest value. Equals (=) means the same as. Ordering is comparing the size of a number			

	Ascending means starting from the smallest number and going to the largest Descending means starting from the largest number and going to the smallest number.			
Rounding numbers		If the digit is five or higher, we round up. If the digit is four or lower, we round down.		
Estimating	Estimating is making a mathematical guess.			
Negative numbers		A negative number is a whole number less than zero. If the number is negative, the further away from zero the smaller the value. The bigger the negative number the smaller it actually is.		
Roman Numerals	Roman numerals are symbols to represent numbers.			

## Addition and subtraction

CONCEPT	Year 3	Year 4	Year 5	Year 6
Addition	<p>Addition is combining addends together to get a sum.</p> <p>Adding 2 to an odd number will keep it odd.</p> <p>Adding 2 to an even number will keep it even.</p> <p>If we change the order of the addends, the sum remains the same.</p> <p>___ is the whole.          ___ is a part and ___ is a part.          and ___ makes ___.</p>			
Subtraction	<p>Subtracting is a minuend take away a subtrahend to get a difference.</p> <p>Partition the subtrahend into ___ and ___.          Take ___ to get to 10.          10 take ___ is ___          The answer is ___.</p> <p>Partition the minuend into ___ and ___.          Take ___ from 10 to leave ___.</p>			

	Put ___ and ___ together. The answer is ____.			
Inverse	Inverse means opposite. The inverse operation will have the opposite effect. Addition is the inverse of subtraction. Subtraction is the inverse of addition.			

## Multiplication and division

CONCEPT	Year 3	Year 4	Year 5	Year 6
Multiplication	Multiplication is multiplying a factor by another factor to create a product.			A remainder is always smaller than the divisor.
Division	Dividing is sharing a dividend equally by a divisor to create a quotient. Halving is splitting a number into two equal parts.			
Inverse	Multiplication is the inverse of division. Division is the inverse of multiplication.			

Factors and multiples		<p>A factor is always a whole number.</p> <p>A factor pair is 2 numbers which can be multiplied together to produce a given number.</p> <p>A multiple is the result of multiplying a whole number by an integer.</p>	<p>Common factor pairs are shared by more than one multiple.</p>	
Prime and composite numbers			<p>A prime number is a number that is only divisible by 1 and itself.</p> <p>A composite number has two or more factors.</p> <p>A composite number is a non-prime number.</p> <p>Two is the only even prime number.</p> <p>One is not a prime number because it only has itself as a factor.</p>	
Squared and cubed numbers			<p>A squared number is the product of a number that has been multiplied by itself.</p> <p>A cubed number is the product of a number that has been multiplied by itself twice.</p>	

# Fractions, decimals and percentages

CONCEPT	Year 3	Year 4	Year 5	Year 6
Parts of a fraction	<p>A fraction is a number less than 1.</p> <p>A fraction is an equal part of a whole.</p> <p>The bigger the denominator, the smaller the part.</p> <p>The numerator is the number of equal parts we have.</p> <p>The denominator is the number of equal parts the whole is split up into.</p>			
Unit and non-unit fractions	<p>A unit fraction is one equal part of the whole.</p> <p>A non-unit fraction is more than one equal part of the whole.</p>			
Equivalent fractions	<p>Equivalent means equal to/same.</p>			
Comparing and ordering fractions	<p>When we order and compare fractions with the same denominator we only look at the numerator.</p>			<p>If the denominators are the same, the bigger the numerator the bigger the fraction.</p>

				If the whole is the same, the smaller the denominator the bigger the fraction.
Adding and subtracting fractions	Denominators must be the same to add and subtract fractions. When fractions are added or subtracted, the denominator stays the same.			
Multiplying and dividing fractions				
Proper, improper and mixed numbers			A mixed number is a mix of whole numbers and fractions. Mixed numbers are larger than 1. An improper fraction is bigger than a whole. An improper fraction will have a bigger numerator than denominator.	
Decimals (comparing, ordering, rounding)		A decimal is part of a whole. Ten tenths are equal to one whole. One hundred hundredths equals one whole. A tenth is ten times bigger than a hundredth.	One thousand thousandths equals one whole. A hundredth is ten times bigger than a thousandth.	

		<p>Rounding to the nearest whole number is rounding to the ones.</p> <p>A number with 2 decimal places has tenths and hundredths.</p> <p>A number with 3 decimal places has tenths, hundredths and thousandths.</p>		
Percentages			<p>Per cent means out of 100.</p> <p>100 percent equals one whole.</p> <p>There are 10 10% in one whole.</p>	
Fractions, decimals and percentages combined		<p>One tenth as a decimal is 0.1.</p> <p>One hundredth as a decimal is 0.01.</p> <p>A half as a decimal is 0.5</p> <p>A quarter as a decimal is 0.25.</p> <p>Three quarters as a decimal is 0.75.</p>	<p>One thousandth as a decimal is 0.001.</p>	

## Statistics

CONCEPT	Year 3	Year 4	Year 5	Year 6
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Vocabulary	Intervals are used to show the scale.	Continuous data can be measured over time.		The mean is a measure of average.
Bar charts	Bars must always be equal in width.			
Pictograms	A pictogram shows data using pictures. Each picture represents ____. Pictograms require a key.			
Tables				
Line graphs				
Timetables				
Pie charts				

## Ratio and proportion

CONCEPT	Year 3	Year 4	Year 5	Year 6
				Ratio shows the relative size of two or more values. Ratio is the relationship between two or more amounts. Scaling makes something smaller or larger in size.

# Algebra

CONCEPT	Year 3	Year 4	Year 5	Year 6
				Algebra uses symbols and letter to represent numbers. Algebra uses rules.

# Measure

CONCEPT	Year 3	Year 4	Year 5	Year 6
Equivalence	<p>Converting units of measure doesn't change the amount you have.</p> <p>There are 10 millimetres in a centimetre.</p> <p>There are 100 centimetres in a metre.</p> <p>There are 1000 grams in a kilogram.</p> <p>There are 1000ml in a litre.</p> <p>A centimetre is a ten times bigger than a millimetre.</p> <p>A millimetre is ten times smaller than a centimetre.</p> <p>A metre is a hundred times bigger than a centimetre.</p> <p>A centimetre is a hundred times smaller than a metre.</p>	There is 100p in £1.	<p>There are 10 mm in 1cm.</p> <p>There are 100cm in 1m.</p> <p>There are 1000m in 1km.</p> <p>There are 1000g in 1kg.</p> <p>To convert from g to kg you divide by 1000.</p> <p>To convert from kg to g you times by 1000.</p>	A mile is longer than a kilometre.

	There is 100p in £1.			
Perimeter	Perimeter is the total distance around the outside of an object.			
Area		Area is the space inside an object/shape.	The area of a rectangle and square is length x width.	<p>The area of a parallelogram is base times height.</p> <p>The area of a triangle is half of the base times height or half base times height.</p> <p>Calculating the area of all parts of a shape and adding them together will give the total area of that shape.</p> <p>The area of a triangle is half base x height.</p> <p>The area of a parallelogram is height x base.</p>
Volume				<p>The volume of a cube is length x width x height.</p> <p>Volume is the amount of space inside a 3D object.</p>
Time	<p>There are 60 seconds in a minute.</p> <p>There are 60 minutes in an hour.</p> <p>Half an hour is 30 minutes</p> <p>Quarter of an hour is 15 minutes</p> <p>There are 24 hours in 1 day.</p>			

	<p>AM is morning, PM is afternoon.</p> <p>Noon is the middle of the day and midnight is the middle of the night.</p> <p>There are 365 days in a year and 366 days in a leap year.</p> <p>There are 7 days in 1 week.</p> <p>There are 12 months in a year.</p> <p>'30 days has September, April, June and November, all the rest have 31 except for February that has 28 and 29 in a leap year'.</p>			
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## Geometry – Properties of shape, position and direction

CONCEPT	Year 3	Year 4	Year 5	Year 6
2D/3D	<p>A shape has ___ faces, ___ edges and ___ vertices.</p> <p>A 2D shape has length and width.</p> <p>A 3D shape has length, width and depth.</p>	<p>Isosceles triangle have 2 equal sides and 2 equal angles.</p> <p>Scalene triangle have no equal sides and no equal angles.</p>	<p>A net is a 2D representation of a 3D shape.</p> <p>A regular polygon has equal sides and angles</p>	<p>A parallelogram is a four sided, flat shape where opposite sides are parallel.</p>

	<p>Symmetrical shapes have two equal halves.</p>	<p>Equilateral triangle have equal sides and equal angles.</p> <p>Right angle triangle has a right angle.</p> <p>A polygon is a shape with more than four sides and all the sides are straight.</p> <p>A quadrilateral has four sides.</p> <p>A line of symmetry splits an object or shape to have two identical sides.</p> <p>A line of symmetry divides a shape into two mirror halves.</p>	<p>A 3D shape has faces, edges and vertices.</p>	
Angles	<p>An angle is made when 2 or more lines meet.</p> <p>An angle is a degree of turn.</p> <p>An angle is the amount of turn between two points.</p> <p>A right angled turn is a quarter turn.</p> <p>2 right angled turns are a half turn.</p> <p>3 right angled turns are three quarters.</p> <p>4 right angled turns are a full turn.</p>	<p>An acute angle is less than 90 degrees.</p> <p>A right angle is 90 degrees</p> <p>An obtuse angle is more than 90 degrees but less than 180 degrees.</p>	<p>A reflex angle is more than 180 degrees but</p> <p>There are 360 degrees around a point.</p> <p>A straight line is 180 degrees.</p>	<p>The internal angles of a triangle add up to 180 degrees.</p> <p>The internal angles of a quadrilateral are 360 degrees.</p>

	A right angle is 90 degrees.			
Position/direction		<p>Reflection is an unchanged shape flipped across a mirror line.</p> <p>Reflection does not change the shape.</p> <p>Translation is sliding an unchanged shape.</p> <p>Translation does not change the shape.</p> <p>Coordinates describe a position of an object.</p> <p>When reading coordinates, read along the axis first and then up the axis.</p>		
Circles				<p>The diameter is the distance from one side of a circle to the other, passing through the centre point in a straight line.</p> <p>The radius is half of the diameter.</p> <p>The radius is the distance from the centre point to the circle edge.</p> <p>The circumference is the total distance around the outside of a circle.</p>

Nets			A net is a 2d representation of a 3d shape.	
Lines	<p>A vertical line goes straight up and down. A horizontal line goes from left and right. Parallel lines remain the same distance apart and never touch. Perpendicular lines meet to form a right angle.</p>			