Cycle 1	Cycle 2	Cycle 3
Number and Place Value	Number and place value	Number and place value
- count in steps of 2, 3, and 5 from 0 (Y2) - count in tens from any number, forward and backward (Y2) - recognise the place value of each digit in a three-digit number (hundreds, tens, ones) - compare numbers up to 1000 - identify, represent and estimate numbers using different representations - read and write numbers up to 1000 in numerals and in words - recognise odd and even numbers (Y2) - solve number problems and practical problems involving these ideas.	- count from 0 in multiples of 4, 50 and 100. - find 10 or 100 more or less than a given number. - recognise the place value of each digit in a three-digit number (hundreds, tens, ones) - compare and order numbers up to 1000 - identify, represent and estimate numbers using different representations - read and write numbers up to 1000 in numerals and in words - recognise odd and even numbers (Y2) - solve number problems and practical problems involving these ideas.	- count from 0 in multiples of 4, 8, 50 and 100. - find 10 or 100 more or less than a given number. - recognise the place value of each digit in a three-digit number (hundreds, tens, ones) - compare and order numbers up to 1000 - identify, represent and estimate numbers using different representations - read and write numbers up to 1000 in numerals and in words - recognise odd and even numbers (Y2) - solve number problems and practical problems involving these ideas.

Notes and guidance (non-statutory)
Pupils now use multiples of 2, 3, 4, 5, 8, 10, 50 and 100.
They use larger numbers to at least 1000, applying partitioning related to place value using varied and increasingly complex problems, building on work in year 2 (for example, 146 = 100 + 40 and 6, 146 = 130 + 16).
Using a variety of representations, including those related to measure, pupils continue to count in ones, tens and hundreds, so that they become fluent in the order and place value of numbers to 1000.

Cycle 1	Cycle 2	Cycle 3

Addition and Subtraction
 	
• add and subtract numbers mentally, including:
  o a two-digit number and ones
  o a two-digit number and tens
  o two two-digit numbers
  o adding three one-digit numbers (Y2)
• show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot (Y2)
• add and subtract two two-digit numbers using a written method to check mental calculation
• solve missing number problems such as 7 = □– 9. (Y1)
• solve problems, including missing number problems, using number facts, place value.
• Recall pairs to 10 and 20.(Y1)
	Addition and Subtraction
	
	• add and subtract numbers mentally, including:
	  o a three-digit number and ones
	  o a three-digit number and tens
	  o a three-digit number and hundreds
	
	• add and subtract numbers with up to three digits using a written method.
	• show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot (Y2)
	• recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.(Y2)
	• solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
	• Recall multiples of 10 which total 100. (Y2)
		Addition and Subtraction
		
		• add and subtract numbers mentally, including:
		  o a three-digit number and ones
		  o a three-digit number and tens
		  o a three-digit number and hundreds
		
		• add and subtract numbers with up to three digits using a written method.
		• estimate the answer to a calculation and use inverse operations to check answers
		• solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
		• Quickly calculate 2-digit numbers which total 100. (Y2)

Notes and guidance (non-statutory)
Pupils extend their understanding of the language of addition and subtraction to include sum and difference. Pupils practise addition and subtraction to 20 to become increasingly fluent in deriving facts such as using 3 + 7 = 10; 10 – 7 = 3 and 7 = 10 – 3 to calculate 30 + 70 = 100; 100 – 70 = 30 and 70 = 100 – 30. They check their calculations, including by adding to check subtraction and adding numbers in a different order to check addition (for example, 5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5). This establishes commutativity and associativity of addition.

Cycle 1	Cycle 2	Cycle 3
Multiplication and Division • solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. (Y1) • recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables (Y2) • double and half numbers and quantities (non-st Y1)	**Multiplication and Division** • solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. (Y1) • show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot (Y2) • recall and use multiplication and division facts for the 2, 3, 5 and 10 multiplication tables (Y2) • double and half numbers and quantities (non-st Y1)	**Multiplication and Division** • show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot (Y2) • recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables • solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. (Y2) • double and half numbers and quantities (non-st Y1)

Notes and guidance (non-statutory)

Pupils use a variety of language to describe multiplication and division.

Pupils are introduced to the multiplication tables using concrete and visual images. They practise to become fluent.

Pupils work with a range of materials and contexts in which multiplication and division relate to grouping or sharing e.g using arrays and repeated addition. They begin to relate these to fractions and measures (for example, $40 \div 2 = 20$, 20 is a half of 40). They use commutativity and inverse relations to develop multiplicative reasoning (for example, $4 \times 5 = 20$ and $20 \div 5 = 4$).

Cycle 1	Cycle 2	Cycle 3
Fractions - recognise, find, name and write fractions ½, ¼, ⅓, 2/4 and ¾ of a length, shape, set of objects or quantity (Y2) - Count in ½ s and 1/4s up to 10 (Non st Y2) - write simple fractions for example, ½ of 6 = 3 (Y2) - recognise the equivalence of ½ and 2/4. (Y2) - solve problems that involve all of the above.	**Fractions** - recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators - recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. Count in fractions ½ s, ¼ s, 1/5 s. - recognise and show, using diagrams, equivalent fractions with small denominators - add and subtract fractions with the same denominator within one whole - solve problems that involve all of the above.	**Fractions** - count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 - recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators - recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators - recognise and show, using diagrams, equivalent fractions with small denominators - add and subtract fractions with the same denominator within one whole - compare and order unit fractions, and fractions with the same denominators - solve problems that involve all of the above.

Notes and guidance (non-statutory)

Pupils use fractions as 'fractions of' discrete and continuous quantities by solving problems using shapes, objects and quantities. They connect unit fractions to equal sharing and grouping, to numbers when they can be calculated, and to measures, finding fractions of lengths, quantities, sets of objects or shapes. They meet ¾ as the first example of a non-unit fraction.

Pupils should count in fractions up to 10.

Defintion:

Unit fraction – numerator =1. For example ½ , 1/10, 1/3

Non-unit fraction – numerator is more than one. Forexample: 2/4, ¾, 2/3.

Discrete quantity = finding fractions of a packet of smarties, a group of people, a pile of counters etc

Continuous quantity = finding fractions of a shape

Cycle 1	Cycle 2	Cycle 3
Measurement • measure, compare, add and subtract: **lengths** (m/cm/mm); mass (kg/g); volume/capacity (l/ml) • measure the perimeter of simple 2-D shapes • add and subtract amounts of money to give change, using both £ and p in practical contexts • read the **hour** from an analogue clock • know clockwise • know about 12 hour clock - am and pm and then 24 hours. • Record and compare time in terms of hours and days. • compare durations of events [for example to calculate the time taken by particular events or tasks].	**Measurement** • measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); **volume/capacity (l/ml)** • measure the perimeter of simple 2-D shapes • add and subtract amounts of money to give change, using both £ and p in practical contexts • Read **minutes** from an analogue clock. • Write time as digital time to 12 hours, 24 hours for more able. • estimate time with increasing accuracy to the nearest minute; record and compare time in terms of minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight • compare durations of events in terms of minutes, hours and days [for example to calculate the time taken by particular events or tasks].	**Measurement** • measure, compare, add and subtract: lengths (m/cm/mm); **mass (kg/g);** volume/capacity (l/ml) • measure the perimeter of simple 2-D shapes • add and subtract amounts of money to give change, using both £ and p in practical contexts • 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, a.m./p.m., morning, afternoon, noon and midnight • Explore the language of time, spotting equivalent times e.g. quarter past, half past, quarter to, o'clock (Y1 & 2) • know the number of seconds in a minute and the number of days in each month, year and leap year • compare durations of events [for example to calculate the time taken by particular events or tasks].

Underlined = focus for that cycle.

Cycle 1	Cycle 2	Cycle 3
Geometry • Recognise, draw and describe a range of regular and irregular polygons, such as: quadrilaterals, pentagons, hexagons, octagons, in different orientations. (Use accurate measuring) • Spot lines of symmetry in polygons. (Y2) • Introduce the concept of an angle as a turn using Roamers. (FJS)	**Geometry** • recognise angles in regular and irregular polygons as a property of shape or a description of a turn • identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle (acute and obtuse) • identify horizontal and vertical lines and pairs of perpendicular and parallel lines in regular and irregular polygons. • Sort shapes according to properties and use precise vocabulary. (Y2)	**Geometry** • recognise angles in regular and irregular polygons as a property of shape or a description of a turn • identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle (acute and obtuse) • identify horizontal and vertical lines and pairs of perpendicular and parallel lines in regular and irregular polygons. • Sort shapes according to properties and use precise vocabulary. (Y2)

Y3 and 4 simple 3D shape making thro topic – name 3D shapes and describe properties.

Cycle 1	Cycle 2	Cycle 3
Statistics • **<u>Collect</u>**, interpret and present data using bar charts, pictograms and tables • solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. (**1 week maximum** – + use of topic time to reinforce, extend etc)	**Statistics** • Interpret and present data using bar charts, pictograms and tables • solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. (**1 week maximum** – + use of topic time to reinforce, extend etc)	**Statistics** • Interpret and present data using bar charts, pictograms and tables • solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. (**1 week maximum** – + use of topic time to reinforce, extend etc)

Notes and guidance (non-statutory)
Pupils understand and use simple scales (for example, 2, 5, 10 units per cm) in pictograms and bar charts with increasing accuracy.
They continue to interpret data presented in many contexts.

Y3 Roman Numerals to be taught thro history