LKS2 Maths Curriculum

Key – KS1 Objective LKS2 Objective UKS2 Objective ~~Not relevant or achievable only for a few~~ Clarification of objective

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| Threshold Concept |  | Milestone |
| **Know and use numbers** This concept involves understanding the number system and how they are used in a wide variety of mathematical ways. | Counting | • Count in multiples of 2 to 9, 25, 50, 100 and 1000.  • Find 1000 more or less than a given number.  • Count backwards through zero to include negative numbers. |
| Representing | • Read and write numbers initially from 1 to 20 and then to at least 100 in numerals and in words.  • Identify, represent and estimate numbers using different representations.  ~~• Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.~~ |
| Comparing | • Use the language of: equal to, more than, less than (fewer), most and least.  • Order and compare numbers beyond 1000. |
| Place Value | • Recognise the place value of each digit in a four-digit number. (thousands, hundreds, tens, and ones)  • Round any number to the nearest 10, 100 or 1000. |
| Solving Problems | • Solve number and practical problems with increasingly large positive numbers. |
| **Add and subtract** This concept involves understanding both the concepts and processes of addition and subtraction. | Complexity | • Solve two-step addition and subtraction problems in contexts, deciding which operations and methods to use and why. |
| Methods | • Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.  • Add and subtract numbers mentally, including:  • A three-digit number and ones.  • A three-digit number and tens.  • A three-digit number and hundreds. |
| Checking | • Estimate and use inverse operations to check answers to a calculation. |
| Using number facts | • Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.  • Solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction. |
| **Multiply and divide** This concept involves understanding both the concepts and processes of multiplication and division. | Complexity | • Solve one-step (two-step at greater depth) problems involving multiplication and division.  • Solve problems involving multiplying and dividing, including using the distributive law to multiply two digit numbers by one digit, ~~integer scaling problems and harder correspondence problems (such as n objects are connected to m objects).~~ |
| Methods | • Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs.  • Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.  • Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.  • Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; ~~multiplying together three numbers.~~  ~~• Recognise and use factor pairs and commutativity in mental calculations.~~ |
| Checking | • Recognise and use the inverse relationship between multiplication and division and use this to check calculations and solve missing number problems. |
| Using multiplication and division facts | • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables.  • Recall multiplication and division facts for multiplication tables ~~up to 12 × 12.~~ 3,4,6 and 8 x tables |
| **Fractions** This concept involves understanding the concept of part and whole and ways of calculating using it. | Recognising Fractions | • Recognise, find and name a half as one of two equal parts of an object, shape or quantity.  • Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.  • Recognise, find, name and write fractions 1/2, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity.  • 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.  • Compare and order unit fractions and fractions with the same denominators.  • 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.  • Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.  • Round decimals with one decimal place to the nearest whole number.  • Compare numbers with the same number of decimal places up to two decimal places. |
|  | Equivalence | • Recognise the equivalence of 2/4 and 1/2.  • Recognise and show, using diagrams, families of common equivalent fractions.  • Recognise and write decimal equivalents of any number of tenths or hundredths.  • Recognise and write decimal equivalents to 1/4, 1/2, 3/4. |
|  | Solving Problems | • Write simple fractions for example, 1/2 of 6 = 3.  • Add and subtract fractions with the same denominator within one whole.  ~~• Solve problems involving increasingly harder fractions.~~  • Calculate quantities and fractions to divide quantities of unit fractions ~~(including non-unit fractions where the answer is a whole number).~~  • Add and subtract fractions with the same denominator.  ~~• Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.~~  • Solve simple measure and money problems involving fractions and decimals to two decimal places. |
| **Understand the properties of shapes** This concept involves recognising the names and properties of geometric shapes and angles. |  | • Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them.  • Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.  • Recognise angles 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.  • Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.  • Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.  ~~• Identify acute and obtuse angles and compare and order angles up to two right angles by size.~~  • Identify lines of symmetry in 2-D shapes presented in different orientations.  • Complete a simple symmetric figure with respect to a specific line of symmetry. |
| **Describe position, direction and movement** This concept involves recognising various types of mathematical movements. |  | • Recognise angles as a property of shape and as an amount of rotation.  • Identify right angles, recognise that 2 right angles make a half turn and 4 make a whole turn.  • Identify angles that are greater than a right angle.  • Describe positions on a 2-D grid as coordinates in the first quadrant.  • Describe movements between positions as translations of a given unit to the left/right and up/down.  • Plot specified points and draw sides to complete a given polygon. |
| **Use measures** This concept involves becoming familiar with a range of measures, devices used for measuring and calculations. |  | • Describe 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. (£ and p)  • Tell and write the time from an analogue clock, ~~including using Roman numerals from I to XII,~~ and 12-hour and 24-hour clocks.  • Estimate and read time with increasing accuracy to the nearest 5 minutes; record and compare time in terms of seconds, minutes and hours; use appropriate vocabulary.  • Know the number of seconds in a minute and the number of days in each month, year and leap year.  • Compare durations of events.  • Convert between different units of measure. (for example, kilometre to metre; hour to minute)  • Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.  • Find the area of rectilinear shapes by counting squares.  • Estimate, compare and calculate different measures, including money in pounds and pence.  • Read, write ~~and convert time between~~ analogue and digital 12- and 24-hour clocks.  • Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. |
| **Use statistics** This concept involves interpreting, manipulating and presenting data in various ways. |  | • 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, pictograms and tables.  • Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.  • Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. |
| **Use algebra** This concept involves recognising mathematical properties and relationships using symbolic representations. |  | • Solve addition and subtraction, multiplication and division problems that involve missing numbers. |

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| Mathematics Planning Yearly Overview | | |
| LKS2 Phase 1 | | |
| Autumn 1 | Spring 1 | Summer 1 |
| Place value and counting  Problem Solving with  Addition and Subtraction | Place Value  Equivalence and Reasoning with Fractions  Multiplication and division | Place Value  Reasoning and problem solving with multiplication and division  Revisit area of weakness |
| Autumn 2 | Spring 2 | Summer 2 |
| Exploring Shape  Reasoning with measures – money perimeter | Statistics  Exploring Shape  Time | Place Value  Measuring and estimating – length, mass, volume and capacity  Revisit area of weakness |

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| Mathematics Planning Yearly Overview | | |
| LKS2 Phase 2 | | |
| Autumn 1 | Spring 1 | Summer 1 |
| Place value and comparing numbers  Counting and mental addition and subtraction | Place Value  Equivalence and Reasoning with Fractions  Multiplication and division | Place Value  Time - conversion  Problem Solving with four operations |
| Autumn 2 | Spring 2 | Summer 2 |
| Multiplication  Exploring Shape  Reasoning with measures | Statistics  Shape - Symmetry  Revisit area of weakness | Shape – co-ordinates and translation  Measuring and estimating  Revisit area of weakness |