

<p>Key Stage Two (Lower) Mathematics Spring Term</p>	<p>We will be exploring the following topics through practical activities, problem solving challenges, investigations, mental calculations and visualisations.</p>
<p>Year Three</p>	<p>Year Four</p>
<p>Number, Place Value and Money Understand place value in 3-digit numbers by creating 3-digit numbers, placing them on a number line and solving place value additions and subtractions. Order and compare 3-digit numbers and say a number between. Multiply 2-digit numbers by 10 Divide 3-digit multiples of 10 by 10 Divide large multiples of 10 and 100 by 10 and 100 to give whole number answers Count in 10s and 100s up to 1000 Count on and back in 50s Read and write numbers to at least 1000 in numerals and in word</p> <p>Addition and Subtraction Add multiples of 10 and 100 to 3-digit numbers Subtract multiples of 10 and 100 from 3-digit numbers Add pairs of 2-digit numbers using partitioning (totals < 100) Add pairs of 2-digit numbers with a total ≤ 198 Mentally add two friendly 3-digit numbers Subtract 2-digit from 2-digit numbers by counting up Subtract by counting up from a 2-digit to a 3-digit number < 200 Find change from £5, £10 and £20 by counting up Use expanded column addition to add pairs of 3-digit numbers Use column addition to add several 2-digit numbers Add mentally 2-digit to 3-digit numbers by partitioning or counting on Add to the next multiple of 100 by counting up from any 2-digit or 3-digit number Subtract a 3-digit from a 3-digit number (with a difference < 50) by counting up Count up to subtract any 3-digit from 3-digit number Subtract 2-digit from 2-digit numbers by counting up Subtract by counting up from a 2-digit to a 3-digit number < 200 Subtract multiples of 10 and 100 from 3-digit numbers</p> <p>Multiplication and Division Understand what a multiple is and identify multiples Count in 8s and recall multiplication and division facts for the $\times 8$ table Use doubling and halving to multiply and divide by 4 and 8 and solve correspondence problems Double and halve numbers to 100, including partitioning 2-digit numbers Multiply mentally 2-digit by 1-digit numbers using partitioning Understand division as the inverse of multiplication Use known tables and place value to multiply 2-digit by 1-digit numbers with the grid method Solve problems involving multiplying and adding using the distributive law to multiply 2-digit numbers by 1-digit numbers (partitioning)</p> <p>Measurement / Statistics Sort objects on to a Venn diagram (two overlapping sets) Measure the perimeter of simple shapes Recognise Roman numerals on analogue clocks</p>	<p>Number, Place Value and Money Understand place value in 4-digit numbers by creating 4-digit numbers, placing them on a number line and solving place value additions and subtractions Round 4-digit numbers up or down to the nearest 10, 100 or 1000 Use place value to add and subtract multiples of 10, 100 and 1000 to and from 4-digit numbers Count on and back in 50s Count above 1000 in 1s and 100s Count beyond 1000 in 10s Count in 1s, 10s and 100s, across multiples of 100 and 1000 Count in 50s and 25s, using the 100s count Divide 2-digit numbers by 10 to get 1-place decimal answers Divide 3-digit multiples of 10 by 100 to get 1-place decimal answers Understand the effect of multiplying or dividing a given number by 10, 100 or 1000; answers < 100000 and with not more than 2 decimal places Understand place value in 4-digit numbers by creating 4-digit numbers, placing them on a number line and solving place value additions and subtractions</p> <p>Addition and Subtraction Using number facts to add/ subtract a single digit to a 4-digit number (bridging tens, hundreds or thousands) Use expanded decomposition to subtract pairs of 3-digit numbers (moving to compact decomposition) Subtract a 3-digit number by counting on (including using an empty number line) Use compact addition to add amounts of money (with carrying) Use rounding to estimate totals before calculating. Find the change from £5 and £10 Find the difference between prices. Select appropriate methods (counting on or decomposition) to subtract numbers. Understand inverse operations and apply to check calculation</p> <p>Multiplication and Division Use doubling and halving to multiply and divide by 4</p>

Write and tell the time to the nearest minute using analogue and digital clocks
Estimate, solve problems and read time with increasing accuracy; record and compare time using seconds, minutes, hours
Know the number of seconds in a minute, minutes in an hour, hours in a day and days in a week
Compare durations of events to calculate the time taken by particular events or tasks

Geometry

Identify whether angles are greater than or less than a right angle
Begin to understand that angles are measured in degrees
Estimate and measure angles, recognising that they are measured in degrees
Understand that 2D shapes with straight sides are polygons and so identify polygons
Name and identify 2D shapes including circles, ovals and simple polygons
Identify right angles in 2D shapes
Compare and classify squares, rectangles and triangles based on their properties and sizes
Identify and describe angles as more than 90° , less than 90° or right angles in 2D shapes
Associate angle with a measure of turn
Identify right angles (90°) as quarter turns
Identify right angles, recognising one right angle as a quarter turn and two right angles as half a turn
Identify right angles, recognising three right angles as a three-quarter turn and four right angles as a whole turn
Associate angles smaller and larger than 90° with turn
Measure the perimeter of simple shapes

Fractions

Understand the concept of a non-unit fraction (non-unit halves, non-unit thirds, non-unit quarters, non-unit eighths)
Add fractions with the same denominator to make one whole
Understand unit and non-unit fractions with denominators ≤ 12
Know fraction complements to 1 (fractions with denominators ≤ 12)
Begin to understand equivalence by placing fractions on a number line
Develop an understanding of equivalence in fractions; $1/2$ s, $1/3$ s, $1/4$ s, $1/5$ s, $1/6$ s, $1/8$ s, $1/10$ s
Place fractions with denominators ≤ 8 on a number line
Use fraction strips to find fractions of amounts
Find familiar fractions of small amounts

Problem Solving and Algebra

Spot patterns and relationships and make predictions

and 8 and solve correspondence problems
Double and halve 3-digit numbers by partitioning
Use mental strategies to solve multiplications including multiplying by 0 and 1, dividing by 1, multiplying together three numbers
Use mental strategies to solve divisions including dividing by 1
Understand that multiplication is commutative and use it in mental calculations
Count in 7s and recall multiplication and division facts for the $\times 7$ table
Understand division as the inverse of multiplication
Identify factors and multiples, and begin to find common factors
Use knowledge of multiples and factors in relation to large numbers
Divide 2- and 3-digit by 1-digit numbers using a written method drawn from mental strategies with integer remainders and answers between 10 and 20
Multiply 2- and 3-digit by 1-digit numbers using the ladder method

Measurement / Statistics

Estimate, compare and calculate different measures, including money in pounds and pence
Estimate and measure angles, recognising that they are measured in degrees
Compare and classify acute and obtuse angles; order angles up to 180°
Draw horizontal, perpendicular and parallel lines of a given length
Identify line symmetry in 2D shapes presented in different orientations
Classify 2D shapes according to their properties: right angles, lines of symmetry, parallel and perpendicular lines
Draw shapes with specified properties: a right angle, two perpendicular lines, two parallel lines
Recognise and begin to complete symmetrical 2D shapes
Complete a symmetric figure with a given line of symmetry
Use vocabulary such as morning, afternoon, noon, and midnight; also am and pm times and 12 hour clocks
Use 24 hour clocks
Read, write and convert time between analogue and digital 12 and 24 hour clocks
Measure and calculate the perimeter of rectilinear figures in cm and m

Solve problems involving fractions (unit and non-unit fractions with small denominators)
Work systematically, using logical reasoning and deduction
Begin to make generalisations
Solve problems involving multiplication and division, including missing number problems

Measure and calculate the perimeter of composite rectilinear shapes in m/cm
Measure, compare, add and subtract lengths or heights using m/cm/mm
Convert between different units of measure, e.g. kilometres to metres, metres to centimetres, etc

Fractions/ Percentages/ Decimals

Find fractions of amounts and relate to division and multiplication
Understand unit and non-unit fractions with denominators ≤ 12
Develop an understanding of equivalence in fractions: $1/2$ s, $1/3$ s, $1/4$ s, $1/5$ s, $1/6$ s, $1/8$ s, $1/10$ s
Identify the equivalent fraction for any given fraction
Begin to understand equivalence by placing fractions on a number line
Use equivalence to reduce fractions to their simplest form
Match 1-place decimals to $1/10$ s
Locate and write 1-place decimals on a number line and match to $1/10$ s
Count in decimal steps of 0.1 (tenths)
Round 1-place decimals to the nearest integer, by placing on a number line
Round 1- and 2-place decimals up and down to the nearest whole number
Divide integers by 10, 100 and 1000 to get 1-place decimal answers