

SUMMER 2

REVISION & EXAMINATIONS

SUMMER 1

**REVISION & EXAMINATIONS** 

SPRING 2

#### **GEOMETRY & MEASURES**

Understand, represent, measure & read bearings, and apply scale to bearing diagrams / Calculate bearings using angle rules, Pythagoras, trigonometry, and the Sine & Cosine rules / Perform & describe line symmetry, reflection, rotation & rotational symmetry / Perform & describe translations of shapes & enlargements of shapes (including negative enlargements (H)) / Perform & describe a series of transformations of shapes / Solve loci problems.

### SPRING 2

# NUMBER / GEOMETRY / STATISTICS / ALGEBRA

Work with rounding to given figures, estimation, error interval, truncation and limits of accuracy / Use and apply formulae for arc length, sector area, surface area and volume of spheres, cylinders and cones / Collect primary data & make and test hypotheses, thus giving a purpose to the creation and analysis of the diagrams and measures involved / Plot, recognise and read quadratic and cubic graphs / Estimate the area under a curve / Work with the equation of a circle and a tangent.

SUMMER 1

#### GEOMETRY / STATISTICS

Review common angle rules, including exterior and interior angles of polygons / Work with angles in parallel lines / Incorporate angle rules into algebra / Work with more uncommon forms of data representation and charts, including histograms and cumulative frequency charts / Use & read vector notation / Draw & understand vectors multiplied by a scalar & addition & subtraction of vectors (H) / Use vectors to construct geometric arguments and proofs.

SUMMER 2

#### GEOMETRY / ALGEBRA

Use trigonometry rules to find missing lengths & angles / Know and apply the sine rule and cosine rule to find unknown lengths and angles / Use the formula A = ½absinC to find the area of non-right-angled triangles / Solve simultaneous equations by elimination and substitution / Find solutions to equations using straight line graphs / Form & solve more complex equations & inequalities.

**KEY STAGE 5** 

AUTUMN 1

#### RATIO & PROPORTION / GEOMETRY / ALGEBRA

Introduce proportion, both direct and inverse, and apply this to best buy problems, conversion graphs, and exchange rates / Work with plan and elevation drawings, then go into more advanced volume formulae / Use vectors to construct geometric arguments and proofs (H) / Work with similarity relationships and introduce concepts of congruency within triangles / Introduce area and volume scale factor (H) / Develop understanding of sequences, including generating a sequence from a rule, and a rule from a sequence.

AUTUMN 2

#### NUMBER / GEOMETRY / PROBABILITY

Apply and use the four operators with standard form and convert between ordinary numbers and standard form / Calculate fractional parts of a circle, lengths of arcs & area of a sector / Apply and prove the standard circle theorems concerning angles, radii, tangents and chords, and use them to prove related results (H) / Develop skills with Venn Diagram notation and forming Venn diagrams / Construct & interpret conditional probabilities from Venn diagrams (H).

SPRING 1

#### ALGEBRA / RATIO. PROPORTION & RATES

Substitute into expressions and formulae / Use function notation / Make graphs of quadratic functions / Plot and read quadratic, cubic, and reciprocal graphs / Transform graphs based on a given function (H) / Solve linear inequalities in one or two variable(s), and quadratic inequalities in one variable algebraically / Find solutions to equations using straight line graphs / Work with Speed-Distance-Time calculations and graphs, as well as compound units.

SPRING 1

#### NUMBER / ALGEBRA / PROBABILITY

Recap non-calculator methods for all four operations with integers, decimals and fractions / Convert recurring decimals to fractions / Draw and use lines in the form y=mx+e / Find the midpoint of a straight line / Find the equation of a line from the gradient and one point, or two points / Explore relationships between perpendicular lines (H) / Revisit single event probability, tables and Venn diagrams / Develop understanding and use of tree diagrams and conditional probability (H).

AUTUMN 2

#### NUMBER

Develop fluency with percentage of amounts, repeated percentage change, reverting percentage change, simple interest and compound interest / Develop fluency in working with ratios, comparing ratios and fractions, and algebraic ratios, and applying ratio to scale / Develop fluency with the use of fractions, fraction arithmetic and solving worded problems with fractions. Simplify, calculate with and work with more complex algebraic fractions (H).

**AUTUMN 1** 

### **ALGEBRA**

Develop understanding of powers of powers, like terms, expressions and expanding brackets. Explore negative and fractional indices / Look at the difference between equations and inequalities / Establish the difference between a solution and a solution set / Change the subject of equations / Develop understanding of quadratic expressions and equations, and the process for factorising them. Develop use of completing the square and the quadratic formula.

SUMMER 2

#### **GEOMETRY & ALGEBRA**

Apply a positive scale factor, fractional scale factor & negative scale factor / Describe & apply a rotation, translation and reflection / Find the result of a series of transformations / Solve simultaneous equations using graphs, by adjusting one or both equations or by substitution / Use the tangent, ration and cosine ratios to find unknown side lengths.

SUMMER 1

#### GEOMETRY / ALGEBRA / PROBABILITY

Solve equations with squares and square roots / Apply Pythagoras' theorem to calculate the hypotenuse or any side in a right-angled triangle / Draw and interpret quadratic, cubic, reciprocal and exponential graphs / Understand & use the intersection, union and complement of a set / Calculate relative frequency and expected outcomes.

SUMMER 1

#### GEOMETRY & MEASURES / PROBABILITY

Calculate angles in parallel lines / Calculate sides and angles in special quadrilaterals / Know and apply the sum of interior and exterior angles of a polygon / Calculate the probability of a single event / Use the sum of probabilities being equal to 1 / Calculate probabilities from sample space diagrams, two-way tables and frequency trees.

SUMMER 2

#### GEOMETRY / STATISTICS / ALGEBRA

Calculate the circumference if a circle or perimeter of sectors / Calculate the area of a circle or sector of a circle / Calculate the perimeter and area of compound shapes with circles / Read, draw and interpret pictograms, bar charts, vertical line charts, pie charts & line graphs / Generate a sequence given a rule in words or simple algebraic rule / Calculate the nth term of a linear sequence.

AUTUMN 1

#### NUMBER / GEOMETRY & MEASURES

Identify factors, multiples and primes / Explore prime factor decomposition / Find the HCF & LCM / Use a Venn diagram to calculate HCF and LCM / Explore types of number – real, rational, irrational / Calculate % changes / Understand & calculate simple & compound interest / Area, surface area & volume calculations / Convert metric units of area & volume (H).

AUTUMN 2

#### ALGEBRA / NUMBER / RATIO & PROPORTION

Solve equations & inequalities (including brackets and unknowns on both sides) / Change the subject of a formula (one- and two-step) / Use all four operations with fractions / Speed, distance & time calculations / Read and interpret distance-time graphs / Compare, order and calculate with numbers in standards form.

SPRING 1

#### NUMBER / ALGEBRA / RATIO & PROPORTION

Financial maths — Understand a bank account, ways to pay / save, develop budgeting skills & understand conversion rates (spending overseas) / Explore gradients & intercepts / Find the equation of a line from a graph / Solve ratio and proportion problems (direct & indirect).

SPRING 2

#### **GEOMETRY & MEASURES / ALGEBRA**

Construct triangles using ASA, SAS and SSS / Construct angle and perpendicular bisectors / Identify congruent shapes / Calculate unknown lengths and angles in similar shapes / Expand single brackets / Factorise into a single bracket / Expand double brackets / Use identities / Factorise quadratic expressions (H) / Solve quadratic equations (H).

SPRING 2

## ALGEBRA / NUMBER / STATISTICS

Use the addition and subtraction laws for indices / Explore powers of powers / Write numbers greater than 1 in standard form / Write numbers between 0 and 1 in standard form / Use a calculator with numbers in standard form / Choose the most appropriate average / Represent and interpret grouped discrete data and continuous data grouped into equal classes.

SPRING 1

#### GEOMETRY / ALGEBRA / NUMBER

Calculate the area of 2-D shapes (including compound shapes) / Calculate the volume of cubes and cuboids / Convert metric units of mass and capacity / Solve problems with density, mass and volume / Form and solve equations & inequalities / Calculate percentage changes / Express one number as a fraction of another.

AUTUMN 2

#### ALGEBRA / NUMBER / GEOMETRY

Complete tables of values / Recognise and plot lines of the form y = mx / Plot lines of the form y = x + c and y = mx + c / Begin to understand the gradient and intercept / Multiply and divide fractions / Understand reciprocals / Multiply & divide mixed numbers / Identify line and rotational symmetry / Reflect a shape in a given line.

AUTUMN 1

#### RATIO / PROPORTION / ALGEBRA

Solve ratio problems / Simplify ratios / Calculate with direct proportion / Use conversion graphs / Convert between currencies & metric units / Draw & interpret scale diagrams / Use directed number with algebra / Form and simplify algebraic expressions / Expand a single bracket / Factorise into a single bracket.

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### SUMMER 2

#### **NUMBER / GEOMETRY & MEASURES**

Convert between mixed numbers and improper fractions / Add & subtract fractions / Add & subtract mixed numbers / Add & subtract algebraic fractions / Draw and measure lines and angles / Calculate angles around a point / on a straight line / in a triangle / in a quadrilateral / in parallel lines.

SUMMER 1

#### NUMBER

Convert between units of time / Solve problems with timetables and calendars / Calculate speed, distance and time / Draw & interpret distance-time graphs / Recognise multiples, factors, prime, square, cube & triangle numbers / Calculate the HCF and LCM.

### AUTUMN 1

#### AI GFRRA

Describe & continue sequences / understand & use algebraic notation / use function machines (1- and 2-step rules) / Form & solve 1-step equations / Collect like terms.

AUTUMN 2

#### NUMBER / STATISTICS

Recognise and use integer and decimal place value / Compare, order & round numbers / Solve problems involving four operations with integers and decimals / Multiply & divide by powers of 10 / Calculate averages and the range / Round to given number of significant figures / Estimate answers to calculations.

SPRING 1

#### STATISTICS / NUMBER

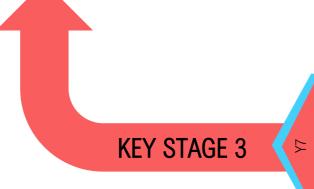
Read, draw and interpret pictograms, bar charts (including dual & composite) and scatter graphs / Identify correlation and plot lines of best fit / Interchange between fractions, decimals and percentages / Identify and work with equivalent fractions

SPRING 2

#### **NUMBER / GEOMETRY**

Compare & order directed numbers / Use all 4 operations with directed number / Use order of operations / Calculate fractions and percentages of an amount / Calculate a % change / Calculate the perimeter of polygons and compound shapes / Calculate the area of a parallelogram, triangle and trapezium.

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#### SHMMFR 2

**Position & direction:** Read and plot coordinates in the first quadrant & in all 4 quadrants / translate shapes on a grid / Identify lines of symmetry / reflect shapes on a coordinate grid.

Statistics: Draw, read & interpret line graphs & bar charts (including dual bar charts) / Read information from tables & two-way tables / Read & interpret pie charts / Draw pie charts / Calculate the mean.

Converting units: Convert between metric units / convert between miles and kilometres / convert units of time / calculate with timetables

#### IIMMER 1

**Ratio:** Use ratio language / use scale factors / calculate with similar shapes / solve ratio and proportion problems.

Algebra: Use function machines / form expressions / substitute into expressions / substitute into formulae / form equations / solve one equations / find pairs of values to solve problems with two unknowns.

Shape: Measure angles in degrees with a protractor / calculate angles around a point & on a straight line / identify vertically opposite angles / calculate missing angles in triangles & quadrilaterals / Draw shapes / Reason about 3D shapes.

#### SPRING 2

Area & volume: Calculate the area of rectangles / compound shapes / triangles / parallelograms / Calculate the volume of a cuboid / Compare volumes / Estimate volume & capacity.

Decimals: Add & subtract decimals with the same or different number of decimal places Multiply & divide decimals by 10, 100 and 1000 / Multiply & divide decimals by integers.

Fractions, decimals & percentages: Know and use the fraction and decimal equivalents for tenths, hundredths and thousandths / Understand percentages / Convert percentages to fractions & decimals / Order F, D and P / Calculate

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Converting units: Convert between metric units / convert between miles and kilometres / convert units of time / calculate with timetables.

#### AIITIIMN 1

Place Value: Understand place value for numbers up to 10,000,000 / compare and order any integers / round numbers within 100,000 / round any integer / count through zero / Compare and order negative numbers. Addition & subtraction: Use mental strategies for addition and subtraction / Add & subtract numbers with more than 4 digits (column

Multiplication & division: understand and identify multiples and factors / identify common factors / identify prime numbers / Identify square and cube numbers / multiply by 10, 100 and 1000 / divide by 10, 100 and

method) / use inverse operations to solve missing number problems /

#### AHTHMN:

Fractions: Identify equivalent fractions / Convert between improper fractions and mixed numbers / compare and order fractions / add & subtract fractions / add & subtract mixed numbers / subtract a fraction from a mixed number / Subtract two mixed numbers / solve multi-step problems involving fractions.

Multiplication & division: Multiply up to a 4-digit number by a 2-digit number / Use short division / Use long division with and without remainders.

#### SDRING 1

percentages of an amount

Multiplication & division (continued): Solve multi-step problems involving x and ÷ / Use the order of operations / reason from known facts.

**Fractions:** Multiply unit fractions by an integer / multiply non-unit fractions by an integer / multiply mixed numbers by integers / divide a fraction by an integer / calculate fractions of an amount / use a fraction of an amount to find the whole.

**Decimals:** Identify place value in decimals with 2 or 3dp / Order and compare decimals up to 3dp / Round to the nearest whole number / Round to 1 or 2dp.

Perimeter: Calculate the area of rectangles & rectilinear shapes.

#### SDDING 1

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#### ALITIIMMI 1

Place Value: Understand place value for numbers up to 10,000,000 / compare and order any integers / round numbers within 100,000 / round any integer / count through zero / Compare and order negative

Addition & subtraction: Use mental strategies for addition and subtraction / Add & subtract numbers with more than 4 digits (column method) / use inverse operations to solve missing number problems / reason from known facts.

Multiplication & division: understand and identify multiples and factors / identify common factors / identify prime numbers / identify square and cube numbers / multiply by 10, 100 and 1000 / divide by 10, 100 and 1000.

#### SHMMER

**Shape:** Identify turns and angles / Compare & angles / draw lengths accurately / identify horizontal and vertical lines / identify parallel and perpendicular lines / recognise & describe 2D & 3D shapes / Draw polygons / Identify lines of symmetry.

Position & direction: Read & plot coordinates / Translate on a grid Statistics: Interpret and draw bar charts / pictograms / line graphs / Interpret data from two-way tables / Collect & represent data.

#### SUMMER

Time: Tell the time to 5 minutes & to the minute / Use am and pm / convert between analogue and digital times / Convert between 12- and 24-hour clock times / find and use durations.

Decimals: Write tenths as fractions, decimals, on a place value chart and on a number line / Write hundredths as fractions, decimals, on a place value chart and on a number line / Write halves and quarters as decimals / Compare and order decimals / Round to the nearest whole number / Divide a number by 10 and

Money: Write money using decimals / Convert pounds and pence / Compare amounts of money / Add & subtract money / Find change

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**Position & direction:** Read & plot coordinates / Translate on a grid

Statistics: Interpret and draw bar charts / pictograms / line graphs / Interpret data from two-way tables / Collect & represent data.

Place Value: Represent numbers to 1000 / understand the place value of numbers up to 1000 / use a number line up to 1000 / Find 1, 10, 100 or 1000 more or less / compare objects / compare numbers / order numbers / Round to the nearest 10, 100 or 1000.

Addition and subtraction: Add and subtract 1s, 10s, 100s 1nad 1000s / add up to two 4-digit numbers – no exchange across a 10 / across a 100 / across a 1000 / subtract up to two 4-digit numbers – no exchange / across a 10 / across a 100 / across

#### JTUMN 2

Addition and subtraction: Know and use complements to 100 / 1000 / estimate answers to calculations / Use inverse operations to check answers to calculations / Select the most efficient method for a calculation

Multiplication and division: Use equal groups for multiplication & division / multiply and divide by 2, 5 and 10 / Recall facts from the 2, 4 and 8 times-table / Recall facts from the 3, 6 and 9 times-table / Recall facts from the 7, 11 and 12 times-table / Multiply by 1 and 0 / Divide a number

Area: Count the number of squares inside a shape to find its area / Compare the area of two shapes.

#### SPRING 1

Multiplication and division: Multiply three numbers / multiply up to a 3-digit number by a 1-digit number – no exchange & with exchange / Answer related calculations using known facts / Divide up to a 3-digit number by a 1-digit number – no exchange, with exchange & with remainders.

Length & perimeter: Measure length in mm, cm, m & km / Find equivalent lengths using m and cm / Find equivalent lengths using cm and mm / add and subtract lengths / measure perimeter / calculate perimeter of rectilinear shapes & polygons.

#### SPRING

Fractions: Understand denominators, numerators and the whole / Compare & order unit fractions & non-unit fractions / Identify equivalent fractions / Count beyond 1 / Partition a mixed number / Compare and order mixed numbers / Convert between mixed numbers and improper fractions and vice verse Mass and capacity: Measure, compare, add & subtract mass / measure volume & compare, add & subtract capacity & volume Fractions: Add fractions and mixed numbers / Subtract from whole amounts & mixed numbers / Calculate unit and non-unit fractions of an amount.

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from whole amounts & mixed numbers / Calculate unit

and non-unit fractions of an amount.

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Multiplication and division: Multiply three numbers / multiply up to a 3-digit number by a 1-digit number – no exchange & with exchange / Answer related calculations using known facts / Divide up to a 3-digit number by a 1-digit number – no exchange, with exchange & with remainders.

Length & perimeter: Measure length in mm, cm, m & km / Find equivalent lengths using m and cm / Find equivalent lengths using cm and mm / add and subtract lengths / measure perimeter / calculate perimeter of rectilinear shapes & polygons.

### AUTUMN 2

Addition and subtraction: Know and use complements to 100 / 1000 / estimate answers to calculations / Use inverse operations to check answers to calculations / Select the most efficient method for a calculation.

Multiplication and division: Use equal groups for multiplication & division / multiply and divide by 2, 5 and 10 / Recall facts from the 2, 4 and 8 times-table / Recall facts from the 3, 6 and 9 times-table / Recall facts from the 7, 11 and 12 times-table / Multiply by 1 and 0 / Divide a number by 1 and 18 tiself.

Area: Count the number of squares inside a shape to find its area / Compare the area of two shapes.

#### AUTUMN 1

Place Value: Represent numbers to 1000 / understand the place value of numbers up to 1000 / use a number line up to 1000 / Find 1, 10, 100 or 1000 more or less / compare objects / compare numbers / order numbers / Round to the nearest 10, 100 or 1000

Addition and subtraction: Add and subtract 1s, 10s, 100s 1nad 1000s / add up to two 4-digit numbers – no exchange / across a 10 / across a 100 / across a 1000.



\*Y3/4 mixed year group & Y5/6 mixed year group curriculums being used this year to meet needs of current children in Primary.