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Year 8 Framework

Ask pupils to copy the Aims for this term into their exercise book

| Hours | Topic | N | 2G FOUNDATION (Book1/2) | Higher (Book 2/3) | Express 3 |
|--------|-----------------------------|------------------------------------|--|--|--|
| 1 3 | Number and Algebra 1 | | <ul style="list-style-type: none"> ▪ How to multiply and divide negative numbers (1/2/3) ▪ How to find the highest common factor and the lowest common multiple of sets of numbers (1/2/3) ▪ How to find the prime factors of a number (1/2/3) ▪ How to generate and describe number patterns. (1/2/3) ▪ What square numbers and square roots are.(1) | <ul style="list-style-type: none"> ▪ How to multiply and divide negative numbers (1/2/3) ▪ How to find the highest common factor and the lowest common multiple of sets of numbers (1/2/3) ▪ How to find the prime factors of a number (1/2/3) ▪ How to generate and describe number patterns. (1/2/3) | <ul style="list-style-type: none"> ▪ How to multiply and divide negative numbers (1/2/3) ▪ How to find the highest common factor and the lowest common multiple of sets of numbers (1/2/3) ▪ How to find the prime factors of a number (1/2/3) ▪ How to generate and describe number patterns. (1/2/3) |
| 6 | | Shape, Space and Measures 1 | <ul style="list-style-type: none"> • How to identify parallel and perpendicular lines (1) • How to measure and draw reflex angles (1) • How to calculate angles in triangles (1) • How to use the properties of quadrilaterals (1) • How to draw triangles accurately (1) | <ul style="list-style-type: none"> ▪ How to identify alternate and corresponding angles (2/3) ▪ How to calculate angles in triangles and quadrilaterals (2) ▪ How to classify shapes using their properties (2) ▪ How to construct angle bisectors and perpendicular lines (2) ▪ How to calculate interior and exterior angles of polygons.(2.) ▪ How to calculate exterior angles of polygons (2) | <ul style="list-style-type: none"> ▪ How to identify alternate and corresponding angles (2/3) ▪ How to classify quadrilaterals using their geometric properties (3) ▪ How to draw constructions using a ruler and compasses.(3) |

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| 5 | Handling Data 1 | <ul style="list-style-type: none"> ▪ How to work with a probability scale (1/2/3) ▪ How to work out probabilities in different situations (1/2/3) ▪ How to use experimental probability to make predictions (1/2/3) ▪ How to collect data from a simple experiment and record in a frequency table (1) ▪ How to find probabilities based on equally likely outcomes. (1) | <ul style="list-style-type: none"> ▪ How to work with a probability scale (1/2/3) ▪ How to work out probabilities in different situations (1/2/3) ▪ How to use experimental probability to make predictions (1/2/3) | <ul style="list-style-type: none"> ▪ How to work with a probability scale (1/2/3) ▪ How to work out probabilities in different situations (1/2/3) ▪ How to use experimental probability to make predictions (1/2/3) ▪ How to compare experimental and theoretical probability (3) |
| 4 | Number 2 | <ul style="list-style-type: none"> ▪ More about working with fractions, decimals and percentages (1,2,3) ▪ How to calculate simple percentages of quantities (1) ▪ How to add and subtract fractions with a common denominator (1) | <ul style="list-style-type: none"> ▪ More about working with fractions, decimals and percentages (1,2,3) ▪ How to calculate % increase and decrease (2,3) ▪ How to compare proportions using fractions and decimals (2,3) | <ul style="list-style-type: none"> ▪ More about working with fractions, decimals and percentages (1,2,3) ▪ How to calculate % increase and decrease (2,3) ▪ How to compare proportions using fractions and decimals (2,3) |
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Autumn term: second half

Year 8 Scheme of Work

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| Oral and mental starter: mental strategies, rapid recall, estimating, visual imagery, problem solving, explaining methods ... | | |
| <ul style="list-style-type: none"> Recognise prime odd even and square numbers Practice mental addition and subtract | <ul style="list-style-type: none"> Use approximation to check answers Practice multiplication tables | <ul style="list-style-type: none"> Order numbers including decimals Discuss and share methods of \times & \div mental calculations Ex5F |

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| Hours | Topic | NNS | 2G FOUNDATION | 2B INTERMEDIATE | 2R HIGHER |
|-------|---------------------------|-----|---|--|---|
| 4 | Algebra2 | | <ul style="list-style-type: none"> How to simplify expressions in algebra (2,3) How to expand brackets (1/2/3) How to use index notation with algebra (1/2/3) | <ul style="list-style-type: none"> How to simplify expressions in algebra (2,3) How to expand brackets (1/2/3) How to use index notation with algebra (1/2/3) | <ul style="list-style-type: none"> How to simplify expressions in algebra (2,3) How to expand brackets (1/2/3) How to use index notation with algebra (1/2/3) How to factorise expressions (3) |
| 4 | Shape, Space & Measures 2 | | <ul style="list-style-type: none"> How to find the perimeter and area of a rectangle (1) How to find the perimeter and area of a compound shape (1/2) How to read scales (1) How to find the surface area of a cuboid (1) How to convert from one metric unit to another (1) | <ul style="list-style-type: none"> How to find the perimeter and area of a compound shape (1/2) How to convert imperial units to metric units (2/3) How to calculate the area of triangles, parallelograms, and trapezia. (2) How to calculate the surface area and volume of a cuboid.(2) | <ul style="list-style-type: none"> How to convert imperial units to metric units (2/3) The definition of a circle and the names of its parts (3) How to use the formulae for the circumference and the area of a circle (3) How to calculate the surface area and the volume of prisms. (3) |
| 4 | Algebra 3 | | <ul style="list-style-type: none"> How to draw mapping diagrams from functions.(1/2/3) How to identify a function from inputs and outputs (1/2/3) How to draw distance-time graphs (1) How to spot patterns in sets of coordinates (1) | <ul style="list-style-type: none"> How to draw mapping diagrams from functions.(1/2/3) How to identify a function from inputs and outputs (1/2/3) Special features of a linear graph (2/3) | <ul style="list-style-type: none"> How to draw mapping diagrams from functions.(1/2/3) How to identify a function from inputs and outputs (1/2/3) Special features of a linear graph (2/3) How to show and find average speed on a distance-time graph (3) |

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Ask pupils to copy the Aims for this term into their exercise book

| Hours | Topic | NNS | 2G FOUNDATION | 2B INTERMEDIATE | 2R HIGHER |
|-------|------------------------|---------|---|---|---|
| 3 | Number 3 | 221-225 | <ul style="list-style-type: none"> How to multiply and divide by 10, 100 and 1000. (1) How to round numbers to one decimal place. (1) How to use a calculator efficiently. (1/2/3) | <ul style="list-style-type: none"> How to use a calculator efficiently. (1/2/3) How to multiply and divide by powers of 10 (2/3) How to round number to one or two decimal places (2/3) How to check calculations by approximations (2/3) | <ul style="list-style-type: none"> How to use a calculator efficiently. (1/2/3) How to multiply and divide by powers of 10 (2/3) How to round number to one or two decimal places (2/3) How to check calculations by approximations (2/3) |
| 5 | Shape, Space & Measure | 67-71 | <ul style="list-style-type: none"> How to recognise congruent shapes. (1/2/3) How to transform 2-D shapes by combinations of reflections, rotations and translations. (1/2/3) | <ul style="list-style-type: none"> How to recognise congruent shapes. (1/2/3) How to transform 2-D shapes by combinations of reflections, rotations and translations. (1/2/3) | <ul style="list-style-type: none"> How to recognise congruent shapes. (1/2/3) How to transform 2-D shapes by combinations of reflections, rotations and translations. (1/2/3) |
| 4 | | 165-167 | <ul style="list-style-type: none"> How to solve problems using ratio. (1) | <ul style="list-style-type: none"> How to enlarge a shape by a scale factor. (2) | <ul style="list-style-type: none"> How to recognise planes of symmetry in 3-D shapes (3) How to solve problems using ratio. (3) How to enlarge a shape by a negative scale factor (3) |
| 2 | Algebra 4 | 277-285 | <ul style="list-style-type: none"> How to solve more difficult equations (1/2/3) How to substitute into a formula (1/2/3) How to create your own expressions and formulae (1/2/3) | <ul style="list-style-type: none"> How to solve more difficult equations (1/2/3) How to substitute into a formula (1/2/3) How to create your own expressions and formulae (1/2/3) | <ul style="list-style-type: none"> How to solve more difficult equations (1/2/3) How to substitute into a formula (1/2/3) How to create your own expressions and formulae (1/2/3) |
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Spring term: second half

Year 8 Scheme of Work

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| Oral and mental starter: mental strategies, rapid recall, estimating, visual imagery, problem solving, explaining methods ... | | |
| <ul style="list-style-type: none"> Add / subtract pairs of numbers: such as 7.6 ± 3.8, 760 ± 380 Order, add and subtract positive and negative numbers Multiply and divide a two-digit number by a one-digit number | <ul style="list-style-type: none"> Find two decimals with a sum of 1 or 0.1 Recognise factors, multiples, square numbers and primes Find halves of decimals and fractions | <ul style="list-style-type: none"> Convert between fractions, decimals, percentages Find equivalent fractions Practice angle facts |

Ask pupils to copy the Aims for this term into their exercise book

| Hours | Topic | Objectives: pupils will be taught to | NNS | 2G FOUNDATION | 2B INTERMEDIATE | 2R HIGHER | |
|-------|-----------------|--|---------|--|--|--|--|
| 6 | Handling Data 2 | <ul style="list-style-type: none"> | 65-67 | <ul style="list-style-type: none"> How to write questions for a questionnaire (1/2/3) How to collect data (1/2/3) How to use a two-way tables (1/2/3) How to construct statistical diagrams for discrete data. (1/2/3) | <ul style="list-style-type: none"> How to write questions for a questionnaire (1/2/3) How to collect data (1/2/3) How to use a two-way tables (1/2/3) How to construct statistical diagrams for discrete data. (1/2/3) | <ul style="list-style-type: none"> How to write questions for a questionnaire (1/2/3) How to collect data (1/2/3) How to use a two-way tables (1/2/3) How to construct statistical diagrams for discrete data. (1/2/3) | |
| 3 | | | 139-141 | <ul style="list-style-type: none"> How to construct stem and leaf diagrams (1/2/3) | <ul style="list-style-type: none"> How to construct stem and leaf diagrams (1/2/3) When to use range, mean, median and mode. (2/3) | <ul style="list-style-type: none"> How to construct stem and leaf diagrams (1/2/3) When to use range, mean, median and mode. (2/3) How to compare two sets of data (3) | |
| 3 | | | 229-231 | | | | |
| 5 | | | 237 | | | | |
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Summer term: second half

Year 8 Scheme of Work

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| Oral and mental starter: mental strategies, rapid recall, estimating, visual imagery, problem solving, explaining methods ... | | |
| <ul style="list-style-type: none"> Consolidate and extend mental methods of calculation, working with integers, decimals, fractions and percentages, square and square roots. | <ul style="list-style-type: none"> Recall of angle facts for angles in a straight line round a point, in a triangle and in a quadrilateral | <ul style="list-style-type: none"> Recall known fact including fraction decimals and percentage conversions |

Ask pupils to copy the Aims for this term into their exercise book

| Hours | Topic | Objectives: pupils will be taught to | NNS | 2G FOUNDATION | 2B INTERMEDIATE | 2R HIGHER |
|---|---------------|--|----------------------|--|---|--|
| 2 | | End of Year Test | | | | |
| 6 | Test | <ul style="list-style-type: none"> Use bearing to specify direction and location Review formula for finding a volume of a cuboids Calculate volumes and surface areas of cuboids and shapes made from cuboids | 232-233 | Logo | Logo | Logo Ex 15E (finding surface area only, using this exercise) |
| 6 | Handling Data | <ul style="list-style-type: none"> Know rough imperials and metric conversion in daily use Use of calculator using function keys effectively and efficiently for brackets, percentages and memory functions Consolidate understanding of the relationship between ratio and proportion Reduce a ratio to its simplest form, including ratio expressed in different units Divide a quantity into two or more parts in a given ratio Use unitary method to solve simple problems involving ratio and direct proportion. Create a household budget using previously collected data (HCC Yr 8) Construct linear functions arising from real life problems. Plot their corresponding graphs. Discuss and interpret real life graphs(1c) | 228-233 78-81 | Ex 9K Work could be based on SMP Booklet Ratio 1 and | Ex 12G-12H Work could be based on SMP Booklet Ratio 1 and 2 | Starter 3.12 Ex3I – 3K |
| 3 | Number | <ul style="list-style-type: none"> Use unitary method to solve simple problems involving ratio and direct proportion. Create a household budget using previously collected data (HCC Yr 8) Construct linear functions arising from real life problems. Plot their corresponding graphs. Discuss and interpret real life graphs(1c) | 174-177 | Ex11F | Ex 11F-11G | Ex12I-12J |
| 3 | Algebra | RATES OF CHANGE | 268-273 | Mode Ex 15A-15B Median Ex 15C Mean Ex15D Range Ex 15E Ex 12F | Starters 15.1, 15.4, 15.6 Mode Ex 15A-15B Median Ex 15C Mean Ex15D Range Ex 15E Ex 12C Ex 15F Ex 15G | Starters 16.3, 16.5 Ex 16A-16D |
| | CAME Task 23 | <ul style="list-style-type: none"> Calculate using a calculator the range, mode, median and mean Recognise when it is appropriate to use the range, mode, median and the mean | | Ex 15F –15G | Ex 12C Ex 15F Ex 15G | Starter 13.5 |
| | Shape & Space | <ul style="list-style-type: none"> Find the modal class for grouped data Calculate a mean given the mean of a smaller group of numbers Construct on paper and using ICT simple line graphs for time series. Interpret tables, graphs and diagrams for both discrete and continuous data and draw inferences that relate to the problem being discussed(1f) Compare two distributions using the range and one or more of mode median and mean. Discuss Maths in the Media (Citizenship skills 1h) Complete a survey using ICT as appropriate, justify the choice of what is presented orally and on paper, summarising the results of a statistical enquiry. | | Statistical Investigation | Statistical Investigation | Review any of Ch 13 Statistical Investigation |
| | | | | <p>NNS page numbers refer to the National Numeracy Scheme</p> <p>WORK REPEATED ↓↑</p> <p>Citizenship skills</p> | | |
| Get pupils to review work for this ½ term and set themselves a target | | | | | | |

