**Curriculum Overview for Mathematics**

**Year 7**

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| **Half Term 1:**  **Mathematics Fundamentals**  **Declarative knowledge:**  Know the place value grid names  Know when to round up and when to round down  Know when to round  Know that multiplication is commutative  Know what a factor is  Know what a multiple is  Know what a prime number is  Know what a common factor is  Know what a common multiple is  Know that Pi is an irrational number  Know some occasions when Pi is used in Maths  Know what an index is  Know the order of operations  Know the vocabulary of algebra: term, expression, equation, formula, substitute, simplify    **Procedural knowledge:**  Round to a given degree of accuracy  Partition numbers  Use the formal written method and gird method to multiply numbers  Use the formal short-division method to divide numbers  Calculate with the order of operations  Find factors of a number in factor pairs  Find multiples of a number  Identify whether a number is prime or composite  Calculate with Pi  Use a calculator  Simplify algebraic expressions  Solve simple algebraic equations  Substitute into formulae  Construct and interpret scatter graphs  Draw lines of best fit on scatter graphs  Categorise scatter graphs into positive, negative and no correlation    **Contextual knowledge:**  Find the Highest Common Factor (HCF) of multiple numbers  Find the Lowest Common Multiple (LCM) of multiple numbers  Solve reasoning and problem-solving questions in a rounding context  Solve reasoning and problem-solving questions in a multiplication and division context and the order of operations  Solve reasoning and problem-solving questions in an algebraic context  Solve reasoning and problem-solving questions involving data representations | Books | Modelling reading of questions by the class teacher – teaching like a Mathematician  Two key words at the start of each lesson defined  Expectation of Mathematical vocabulary used in lessons |
| Speech | Focus digit, Decider digit, Product, Divisor, Units, Commutativity, Multiplication, Division, Operation, Index, Term, Expression, Equation, Formula, Substitute, Simplify, Notation, Factor, Multiple, Prime number, Composite number, Input, Output, Pi (π), Ratio, Scatter graph, Line of best fit, Positive correlation, Negative correlation, No correlation |
| Checklist RTL | Baseline assessment will be completed to support setting at the end of the unit. This will incorporate learning from the Mathematics Fundamentals unit and Key Stage 2 learning. |
| Home | Dr Frost Maths – practising skills using DrFrost.org (a unique username and password will be provided by the school)  We expect Year 7 pupils to spend 30 minutes on homework for Maths per week. |

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| **Half Term 2:**  **Standard Form and converting measures**  **Declarative knowledge:**  Know what standard index form is  Know when to use standard index form  Know the template of writing in standard index form is multiplying a number by 10 to the power of an integer  Know what imperial measures are  Know what metric measures are    **Procedural knowledge:**  Convert large numbers into standard form  Convert small numbers into standard form  Convert between metric units of measurement  **Contextual knowledge:**  Convert from ‘almost standard form’ to standard form  Compare numbers in standard form  Add and subtract in standard form  Multiply and divide in standard form  Apply knowledge to questions in context | Books | Modelling reading of questions by the class teacher – teaching like a Mathematician  Two key words at the start of each lesson defined  Expectation of Mathematical vocabulary used in lessons |
| Speech | Standard form, standard index form, index, exponent, power, power of 10, unit, decimal, scientific form, tera, giga, mega, kilo, milli, micro, nano, pico. |
| Checklist RTL | End of unit exam completed for Standard Form.  Reteaching and relearning opportunities will be delivered to each class dependent on the performance of each class. |
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| **Half Term 2:**  **Directed Number**  **Declarative Knowledge:**  Label a number line with integers  Know what a zero pair is  **Procedural Knowledge:**  Represent zero pairs using a variety of methods  Add and subtract with negative numbers  Multiply and divide with negative numbers  Use a scientific calculator to calculate with negative numbers  **Conditional Knowledge:**  Use the order of operations when calculating with powers/roots and negative numbers | Books | Modelling reading of questions by the class teacher – teaching like a Mathematician  Two key words at the start of each lesson defined  Expectation of Mathematical vocabulary used in lessons |
| Speech | Zero pair, positive, negative, number line, direction, sign, greater than, less than, addition, subtraction, multiplication, division, credit, debit. |
| Checklist RTL | End of unit exam completed for Directed Number.  Reteaching and relearning opportunities will be delivered to each class dependent on the performance of each class. |
| Home | Dr Frost Maths – practising skills using DrFrost.org (a unique username and password will be provided by the school)  We expect Year 7 pupils to spend 30 minutes on homework for Maths per week. |