**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 downKnow when to roundKnow that multiplication is commutativeKnow what a factor isKnow what a multiple isKnow what a prime number isKnow what a common factor isKnow what a common multiple isKnow that Pi is an irrational numberKnow some occasions when Pi is used in MathsKnow what an index isKnow 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 numbersCalculate with the order of operations Find factors of a number in factor pairs Find multiples of a numberIdentify 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 graphsCategorise scatter graphs into positive, negative and no correlation **Contextual knowledge:** Find the Highest Common Factor (HCF) of multiple numbersFind the Lowest Common Multiple (LCM) of multiple numbersSolve 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 operationsSolve 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 isKnow when to use standard index formKnow the template of writing in standard index form is multiplying a number by 10 to the power of an integerKnow what imperial measures areKnow what metric measures are **Procedural knowledge:**Convert large numbers into standard formConvert small numbers into standard form Convert between metric units of measurement**Contextual knowledge:** Convert from ‘almost standard form’ to standard formCompare numbers in standard formAdd and subtract in standard form Multiply and divide in standard formApply 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 methodsAdd and subtract with negative numbersMultiply 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.  |
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