TBSHS Year 7 Mathematics – Spring Term

Progression Pathway	Content and Concepts (depth of understanding and application)	Skills Development
7 – 9	Pupils working on this path way will have shown they are able to complete the prior skills and are expected to be able to: • Solve problems involving terminating and recurring decimals including compound measure problems e.g. speed, distance, time • Apply knowledge of adding and subtracting numerical fractions to discover how to add and subtract simple algebraic fractions • Use knowledge of inverse operations to find the original amount when it has been increased or decreased by a given fraction • Apply knowledge of fractions to solve tangrams involving fractions • Factorise quadratic expressions where the coefficient of x is greater than 1 • Multiply out two linear expressions • Identify, and express algebraically , the rule for the next term or the n_{th} term of a sequence where the rule is quadratic	Pupils use developed knowledge with confidence and skill, combined with careful planning, to ensure accurate working with fully justified answers. They are able to confidently assess and adapt different methods to solve more challenging problems. Pupils consider the significance of errors in methods, and working out, and actively try to minimise these. They are able to confidently self-assess all work and propose solutions to solve any errors identified.
6 – 8	Pupils working on this path way will have shown they are able to complete the prior skills and are expected to be able to: • Understand and solve worded problems involving multiplying and dividing fractions including top heavy fractions and mixed numbers • Apply the method of calculating fractions of amounts into real world problems e.g. cost comparison • Identify terminating and recurring decimals and their equivalent simplified fraction form • Describe, in words, the rule for the next term or the n_{th} term of a sequence where the rule is quadratic • Factorise quadratic expressions where the coefficient of x is 1 • Expand and simplify single and double brackets where powers are created • Substitute positive and negative decimals into expressions involving powers and roots and find their value • Construct, express in symbolic form, and utilise more complex formulae involving powers and roots to solve problems	Pupils use developed knowledge with confidence and skill, combined with careful planning, to ensure accurate working with fully justified answers. They are able to confidently assess and adapt different methods to solve more challenging problems. When solving problems pupils consider the significance of errors in their methods, and working out, and actively try to minimise these. They are able to confidently self-assess all work and propose solutions to solve any errors identified.
5 – 7	Pupils working on this path way will have shown they are able to complete the prior skills and are expected to be able to: • Add and subtract mixed numbers and top heavy fractions • Multiply and divide mixed numbers and top heavy fractions • Understand and solve worded problems involving multiplying and dividing simple fractions • Find and calculate fractions of amounts using mental methods • Order mixed numbers, top heavy fractions and decimals • Identify common recurring decimals • Explore number sequences to find, and describe algebraically, the rule for the next term or the n_{th} term of a sequence where the rule is linear • Collect like terms where powers are present • Expand and simplify simple single and double brackets • Factorise expressions including terms with numbers and powers • Substitute positive and negative integers into expressions involving powers and roots and find their values • Construct, and express in symbolic form, more complex formulae involving all four operations to solve problems	Pupils are able to work independently on topics involving multi-step approaches. They can confidently identify errors in their own work, and that of peers, and suggest a possible solution to improve. They are able to link some steps in methods to wider theories.
4 – 6	Pupils working on this path way will have shown they are able to complete the prior skills and are expected to be able to: • Simplify fractions to their lowest form by cancelling common factors • Add and subtract fractions with different denominators • Multiply and divide simple fractions • Order simple fractions and decimals • Convert top heavy fractions and mixed numbers into decimals • Calculate fractional parts of quantities or measurements using a calculator • Construct, and express in symbolic form, simple formulae involving one or two operations • Use simple formulae involving one or two operations to solve problems • Solve problems using all four operations with decimals up to two decimal places • Collect like terms with different variables and numbers • Multiply and simplify variables and numbers that create powers • Divide variables and write them in their simplest form • Factorise an expression using a single bracket • Know the difference between an expression, equation and a formula • Substitute positive and negative integers into expressions involving brackets and find their values	Takes independent responsibility for working through problems. Is able to recall and explain how basic steps combine to solve problems. Still requires some support, on occasion, and can reflect to identify some of their own errors.
3 – 5	Pupils working on this path way will have shown they are able to complete the prior skills and are expected to be able to: • Change fractions into equivalent fractions • Convert simple fractions into decimals and vice versa • Begin to use simple formulae expressed in words • Recognise and describe number patterns, and relationships, including multiples, factors and	Pupils can solve problems as part of a group and complete multi-stage problems. They still require some scaffolding to support their understanding and application of core methods. They are able to identify some possible errors in their work and

	squares • Create simple expressions involving letters instead of numbers • Collect simple like terms with more than one variable • Substitute negative integers into simple expressions and find their value	possible challenges.
2 – 4	Pupils working on this path way will have shown they are able to complete the prior skills and are expected to be able to: • Find families of fractions that are equal from diagrams • Use simple fractions that are several parts of a whole • Recognise when simple fractions are equivalent • Apply the four operations in the correct order when solving whole number problems • Understand and use letters instead of numbers • Identify variables and terms in expressions • Collect like terms when there is one variable • Substitute positive integers into simple expressions and find their value	Pupils can solve problems when the steps are clearly broken down into their core components and explained in full to them with additional scaffolding. They are able to complete simple tasks but often require support to link methods and theories to practical questions.
1 – 3	Pupils working on this path way will have shown they are able to complete the prior skills and are expected to be able to: • Able to identify fractions from diagrams or words • Correctly count and order when solving problems involving up to 10 objects • Correctly add and subtract when solving problems involving up to 10 objects • Recognise simple sequences of numbers including odd and even numbers • Recognise what is meant by substitution and be able to express its meaning using words or diagrams	Pupils can understand basic concepts that are the foundation to simple methods. They are starting to work independently or following written instructions. They still need significant support and scaffolding to complete multi-stage techniques and problem solving.