Bishop Heber High School

Subject	Year	Term
Mathematics (Higher)	**10**	**1**

Topic

Algebra, Fractions, Percentages and Ratio

Content (Intent)

Prior Learning (Topic): Place value, Four operations with integers, Understanding variables and letters in Maths

- Algebraic Manipulation
- Equations, inequalities and formulae
- Quadratic expressions and equations
- Percentages
- Ratio and scale
- Work with fractions
- Non-calculator methods

Future Learning (Topic) Problem solving

What Knowledge and Skills will be taught (Implementation)	How will your understanding be assessed & recorded (Impact)
• To simplify expressions by collecting like terms and using index laws. • To expand and factorise expressions using brackets. • To manipulate expressions involving powers and terms algebraically.	Ongoing Assessment • Q&A in plenary • Mini-whiteboards • Self and Peer assessment • One online homework per week • End of unit tests
• To solve equations and inequalities, including fractional and multi-step. • To represent inequality solutions accurately using number lines and set notation. • To manipulate formulae, even when the subject appears more than once.	
• To expand double and triple brackets involving quadratic terms. • To solve quadratic equations using various techniques (factorising, completing the square, quadratic formula). • To analyse quadratic graphs and structures to identify roots and turning points.	
• To calculate single and repeated percentage changes. • To express comparisons and changes using percentages or fractions. • To interpret interest (simple and compound) and original values in financial contexts.	Formal Assessment Formative assessment in December
• To share amounts in a given or algebraic ratio. • To connect ratios to fractions and scale diagrams. • To solve problems using compound or linked ratios.	
• To operate on simple and algebraic fractions (including complex cases). • To simplify and convert between fraction forms. • To solve equations involving algebraic fractions.	
• To apply BIDMAS and related operations efficiently. • To convert recurring decimals to fractions. • To solve multi-step calculations accurately by hand.	

How can parents help at home?

Help to learn 'need-to-know' formulas
Encourage use of SparxMaths [or MathsGenie]
Review previously taught topics regularly

Helpful further reading/discussion (including Reading and Vocabulary Lists)

Reading

Direct to the following websites;
Sparkmaths.com
www.mathsgenie.co.uk

Vocabulary Lists

Term
Expression
Simplify
Expand
Factorise
Index
Recurring
Equation
Inequality
Solve
Rearrange
Quadratic
Ratio
Scale
Product
Reciprocal
Inverse
Interest
Roots
Order
Quotient