Mathematics Year 10 Learning Journey

$$\frac{x^a}{x^b} = x^{a-b}$$

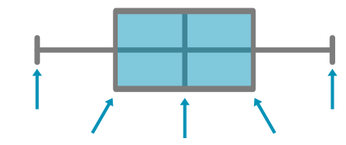
Indices
- Index laws with positive indices
- Index laws with negative indices
- Fractional indices (H)

Recurring Decimals (Higher only)
- Converting fractions to recurring decimals
- Converting recurring decimals to fractions

Brackets
- Expanding binomials
- Factorising quadratics
- Triple brackets (H)
- Completing the square (H)

Statistical Diagrams
- Grouped data & stem & leaf diagrams (F)
- Cumulative frequency & box plots (H)

Rounding
- Finding error intervals
- Finding error intervals for truncated values
- Calculating with bounds (H)

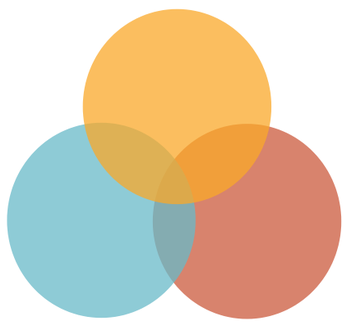


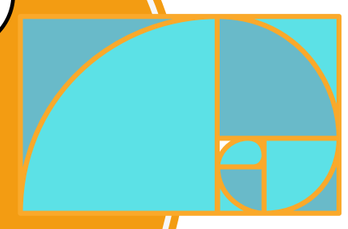
Transformations
- Combining transformations including translation, reflection, rotation & enlargement

Proportion
- Direct proportion equations
- Inverse proportion equations
- Graphs

Handling Data
- Sampling & bias

Sequences
- Position-to-term rules for arithmetic sequences
- Sequences of patterns





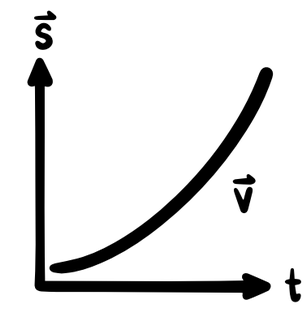
Tree Diagrams
- For independent events
- For dependent events

Compound Measures
- Calculating with density
- Calculating with pressure

Ratio
- Combining ratio
- Algebra & ratio
- Changing ratio

Graphs
- Calculating acceleration
- Plotting velocity-time graphs
- Cubic & reciprocal graphs

Set Notation
- Venn Diagrams
- Using set notation

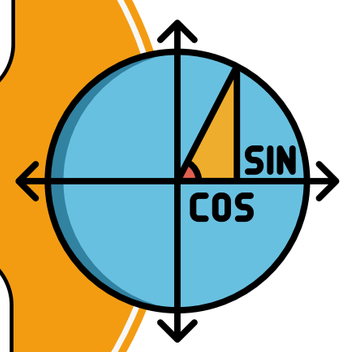


Real-life Graphs
- Plotting and interpreting real-life graphs
- Finding equations of real life graphs

Linear Graphs
- Equations of parallel lines
- Finding the equation given a gradient and a point
- Given two points

Constructions
- Constructing bisectors
- Constructing loci

Trigonometry
- Sine, Cosine & Tangent
- Finding unknown sides
- Finding unknown angles



Year 10

Percentages
- Repeated percentage change
- Growth & Decay

Surface Area & Volume
- Surface Area of pyramids, cones & spheres
- Volume of pyramids, cones & spheres

Simultaneous Equations
- Solving using elimination
- Solving using substitution
- Solving graphically

Formulae
- Rearranging the formula
- Changing the subject when it appears more than once

Year 10 Overview

Year 10 opens with a baseline assessment to identify any gaps that students may have from KS3. The first year of KS4 focuses on building on the strong KS3 foundations. All students follow the same curriculum, revisiting and elaborating on previous mathematical knowledge, making connections across concepts and applying learned skills in different contexts. In the summer term, students are streamed into Higher and Foundation tiers and so follow slightly different schemes of learning.

"Without mathematics, there's nothing you can do. Everything around you is mathematics. Everything around you is numbers." **Shakuntala Devi**