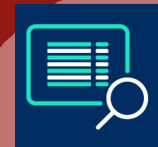


Year 11 Higher Overview

The yearly overview provides suggested timings for each block of learning, which can be adapted to suit different term dates or other requirements.



	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Ratio, proportion and rates of change Ratio and proportion		Geometry and measures Area and volume	Geometry and measures Similarity and congruence		Algebra Sequences and proof		Number Standard form	Geometry and measures Circle theorems		Probability Set notation and Venn diagrams	Geometry and measures Vectors
Spring	Algebra Functions and graphs		Algebra Equations and formulae			Ratio, proportion and rates of change Rates	Geometry and measures Angles, bearings and trigonometry		Geometry and measures Constructions and loci		Geometry and measures Transformations	
Summer	Revision and exams											

Year 11 Higher Autumn Half Term 1



Block 1 – Weeks 1 and 2

Ratio and proportion

- Solve problems with ratio, direct and inverse proportion
- Solve best buy problems
- Represent proportional relationships graphically
- Convert currencies
- Use equations of proportional relationships
- Interpret proportional graphs

Block 2 – Week 3

Area and volume

- Draw and interpret plans and elevations
- Calculate the volume and surface area of spheres and cones
- Calculate the volume of a pyramid
- Convert metric units of area and volume

Block 3 – Weeks 4 and 5

Similarity and congruence

- Identify similar and congruent triangles
- Use similarity to find unknown lengths and angles
- Use congruence conditions
- Use area and volume scale factors
- Apply geometric proof

Block 4 – Weeks 6 and 7

Sequences and proof

- Generate and describe sequences
- Find the n th term of a linear sequence
- Use algebraic arguments and proof
- Use examples and counterexamples

Notes/Links/Interleaving

- Revisit ratio and scale factor reasoning in geometry and measures
- Reinforce multiplicative thinking through ratio and proportion
- Choose when to use mental, written or calculator methods
- Reinforce rounding and metric unit conversions
- Connect similarity to transformations and proportional reasoning
- Encourage algebraic justification when proving results
- Use diagrams and representations to support geometric reasoning
- Students identify that two quantities are directly proportional by plotting a graph from experimental data in science

Extend steps

Ratio and proportion

- Complex direct proportion equations
- Inverse proportion equations

Area and volume

- Volume and surface area of a frustum

Sequences and proof

- Describe and continue sequences involving surds
- n th term of a quadratic sequence

Year 11 Higher Autumn Half Term 2



Block 5 – Week 8

Standard form

- Convert between ordinary and standard form
- Compare and order numbers in standard form
- Four operations with standard form
- Solve problems with standard form

Block 6 – Weeks 9 and 10

Circle theorems

- Use circle theorems to find unknown angles
- Apply angle facts in circles
- Solve problems involving tangents and chords
- Use geometric reasoning and proof

Block 7 – Week 11

Set notation and Venn diagrams

- Draw and interpret Venn diagrams
- Use set notation
- Calculate probabilities from Venn diagrams

Block 8 – Week 12

Vectors

- Add and subtract vectors
- Multiply vectors by scalars
- Simplify vector journeys

Notes/Links/Interleaving

- Link standard form to index laws and calculator fluency
- Connect circle theorems to earlier angle facts and geometric reasoning
- Reinforce rounding appropriately
- Reinforce FDP equivalence and fraction arithmetic when working with probability
- In science, students will use standard form to represent large quantities such as distances in the solar system, small quantities such as the size of an atom and calculations such as wave speeds

Extend steps

Circle theorems

- Circle theorem (alternate segment theorem)

Set notation and Venn diagrams

- Conditional probability (Venn diagrams and two-way tables)

Vectors

- Ratios with vectors
- Collinear points using vectors
- Geometric arguments and proofs using vectors

Year 11 Higher Spring Half Term 1



Block 1 – Weeks 1 and 2

Functions and graphs

- Understand and use function notation
- Work with composite and inverse functions
- Plot and interpret quadratic, cubic, reciprocal and exponential graphs
- Roots, intercepts and turning points
- Recognise and sketch graphs

Block 2 – Weeks 3, 4 and 5

Equations and formulae

- Solve equations and inequalities
- Form and solve equations and inequalities
- Solve simultaneous equations
- Solve problems with equations
- Understand and use iteration to solve equations

Block 3 – Week 6

Rates

- Calculate speed, distance and time
- Draw and interpret distance–time graphs
- Interpret velocity–time graphs
- Work with density, mass and volume
- Work with pressure, force and area
- Convert compound units

Notes/Links/Interleaving

- Revisit graph interpretation when exploring linear and non-linear functions and graphs
- Encourage links between graphical and algebraic methods
- Reinforce directed number fluency
- Link equations and formulae to earlier algebraic manipulation skills
- Use real-life contexts to deepen understanding of compound measures
- Allow students to use a calculator where appropriate
- Students will draw and interpret kinematic graphs in science

Extend steps

Functions and graphs

- Trigonometric graphs, Translation of the graph of a function, Reflection of the graph of a function, More complex transformations of the graph of a function

Equations and formulae

- Form and solve more complex equations and inequalities, Quadratic inequalities, Solve simultaneous equations (one linear, one non-linear), Solve a pair of simultaneous equations involving algebraic constants for a third unknown

Rates

- Velocity–time graphs

Year 11 Higher Spring Half Term 2



Block 4 – Weeks 7 and 8

Angles, bearings and trigonometry

- Use angle facts in parallel lines and shapes
- Understand and use bearings
- Solve problems with bearings
- Work with scale drawings using bearings
- Solve problems using Pythagoras' theorem, trigonometry and bearings

Block 5 – Weeks 9 and 10

Constructions and loci

- Use rulers, protractors and compasses accurately
- Accurately draw triangles and polygons
- Construct perpendicular and angle bisectors
- Interpret and construct loci
- Solve problems with loci

Block 6 – Weeks 11 and 12

Transformations

- Reflect, rotate, translate and enlarge shapes
- Describe transformations using mathematical notation
- Combine transformations

Notes/Links/Interleaving

- Build on angles, Pythagoras' theorem and trigonometry from KS3 and Year 10
- Link constructions and loci to earlier coordinate and shape work
- Encourage precision with notation and construction techniques
- Revisit coordinates, scale factors and similarity in transformation work
- Use diagrams and dynamic geometry software to support transformational understanding

Extend steps

Angles, bearings and trigonometry

- Solve problems with bearings using the sine and cosine rules

Transformations

- Invariant points