

Year 11 Foundation 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 Work with circles		Probability Set notation and Venn diagrams
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 Foundation Autumn Half Term 1



Block 1 – Weeks 1 and 2

Ratio and proportion

- Solve problems with ratio
- Solve problems with direct and inverse proportion
- Solve best buy problems
- Use conversion graphs
- Represent proportional relationships graphically
- Convert currencies

Block 2 – Weeks 3 and 4

Area and volume

- Use isometric paper
- Draw and interpret plans and elevations
- Calculate the volume cylinders, spheres, cones and pyramids

Block 3 – Weeks 5 and 6

Similarity and congruence

- Identify similar and congruent triangles
- Use similarity to find unknown lengths and angles
- Solve problems with similar shapes
- Use congruence conditions

Notes/Links/Interleaving

- Revisit ratio and scale factor reasoning in geometric contexts
- 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
- Use diagrams and models to support spatial reasoning
- Encourage justification when solving geometric problems
- Students identify that two quantities are directly proportional by plotting a graph from experimental data in science

Extend steps

Ratio and proportion

- Direct proportion equations, Direct and inverse proportion graphs

Area and volume

- Surface area of a cylinder, Surface area of a pyramid, Surface area of a cone
- Convert metric units of area, Convert metric units of volume

Similarity and congruence

- Prove a pair of triangles are similar, Prove a pair of triangles are congruent

Year 11 Foundation Autumn Half Term 2



Block 4 – Weeks 7 and 8

Sequences and proof

- Explore linear and non-linear sequences
- Generate and describe sequences
- Find the n th terms of a linear sequence

Block 5 – Week 9

Standard form

- Convert between ordinary and standard form
- Compare and order numbers in standard form

Block 6 – Weeks 10 and 11

Work with circles

- Calculate the circumference and area of a circle
- Calculate the area and perimeter of fractional parts of a circle
- Solve problems with compound shapes involving circles

Block 7 – Week 12

Set notation and Venn diagrams

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

Notes/Links/Interleaving

- Reinforce algebraic thinking through sequences and proof
- Encourage students to explain patterns and generalisations
- Link standard form to index laws and calculator fluency
- Reinforce exact values and 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

Sequences and proof

- Represent numbers algebraically
- Arguments and counterexamples

Standard form

- Multiply and divide numbers in standard form
- Add and subtract numbers in standard form

Work with circles

- Area of a sector
- Arc length and perimeter

Year 11 Foundation Spring Half Term 1



Block 1 – Weeks 1 and 2

Functions and graphs

- Use and interpret function machines
- Plot and interpret quadratic, cubic and reciprocal graphs
- Interpret roots and turning points
- Solve equations graphically
- Recognise and sketch graphs

Block 2 – Weeks 3 and 4

Equations and formulae

- Solve equations and inequalities
- Form and solve equations
- Solve simultaneous equations
- Solve problems with equations

Block 3 – Weeks 5 and 6

Rates

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

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

Equations and formulae

- Form and solve equations with unknowns on both sides
- Form and solve inequalities
- Form and solve more complex equations and inequalities

Rates

- Convert compound units

Year 11 Foundation Spring Half Term 2



Block 4 – Weeks 7 and 8

Angles, bearings and trigonometry

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

Block 5 – Weeks 9 and 10

Constructions and loci

- Use rulers, protractors and compasses accurately
- Accurately draw triangles
- 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
- Work with line symmetry and rotational symmetry
- 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 angles and algebra
- Calculate bearings using angle rules
- Solve problems with bearings using Pythagoras and trigonometry

Constructions and loci

- Accurately draw polygons

Transformations

- Find the result of a series of transformations