



YEAR 11 Spring TERM 2

'An ambitious curriculum that meets the needs of all'

Medium Term Planning – Units 10 & 11

Transforming & constructing Listing and Describing

UNIT 10: *Transforming and constructing* **F & H (8 hours)**

Previously met: Y10 enlargement, Y9 rotation and translation, KS3 reflection, Y9 loci (H) and construction

To be able to:

- transform shapes using translation, reflection, rotation and enlargement
- **enlarge with a negative scale factor**
- Perform standard constructions using ruler and compasses or ruler and protractor
- solve loci problems
- **draw, understand and use the trigonometric graphs**
- **perform graph transformations using function notation**

Links and interleaving

Enlargement, similar triangles, similar shapes, solving equations, rearranging formulae, ratio tables, fractions, probability, completing the square, roots, functions, graph sketching

UNIT 11 : *Listing and describing* **F & H (8 hours)**

Previously met: Y10 Probability, Y9 plan and elevations

To be able to:

- List outcomes and understand associated probability
- **Understand and apply the product rule for counting outcomes**
- Construct sample space diagrams and understand associated probability
- Construct and use tree diagrams
- Draw and use Venn diagrams
- Understand 3-D representation; plans and elevations
- Use data to compare distributions

Links and interleaving

Sets, HCF, LCM, fractions, volume, surface area, box plots, histograms, frequency diagrams, averages, range, prime decomposition, fractions, sets, isometric drawing, volume and surface area, averages, box plots

Curriculum Intent

Skills/Assessment
Objective Links

Spiritual, moral,
social, and
cultural
development

SMSC: Making choices, looking for patterns which may reflect the natural world, supporting and collaborating with each other, realisation that mathematics is an international language and making cultural links as we explore the history of mathematics.

	<p>PSHE/British Values: Working collaboratively, being respectful during discussion and valuing contributions made by others</p> <p>Skills Builder: Key skills in numeracy used in all topic areas.</p>
Numeracy	Focus on key skills.
Literacy	<p>Vocabulary Tier 2: Command words displayed in the classroom and italicized/bold font used in shared resources/presentations. These are a constant focus in discussion and questioning,</p> <p>Vocabulary Tier 3: Title slide in all shared resource presentations show the key vocabulary for each topic.</p> <p>Reading: Underlining command words,</p> <p>Writing: Modelling solutions</p> <p>Oracy: Think, pair, share, discussion, verbal feedback (peer to peer), questioning, student modelling</p>
Becoming future ready	<p>Personal Skills: As a Mathematics student you will learn many skills: you will gain opportunities to listen to others supportively and to use questioning to develop your own understanding, you will learn how to cope with challenging questions and how to build up your resilience, you will get the chance to work on your own and with others. You will develop problem solving skills and you will learn how to break a problem down into smaller more manageable steps. You will learn how to collaborate with others when solving problems and you will learn how to articulate your solution to a problem.</p> <p>Employability: Mathematical skills are invaluable in the workplace. There are many transferable skills which are much valued by employers. Specific career paths for each topic are discussed at the beginning of each unit of work.</p>
Adaptation	<ul style="list-style-type: none"> • By progressive questioning: exploring pupils' understanding through interactive dialogue. • By outcome: different learners will produce different outcomes. • By resource: worksheets are clearly presented and accessible. • By intervention: by providing different levels of supervision and support. • By grouping/setting: according to prior attainment, gender, social preference, preferred learning style. • By offering optional activities: In class or as homework, to extend learning.
QFT/SEND Provision	
Implementation Curriculum Delivery	<p><u>Unit 10 Transforming and constructing.</u></p> <p>Pre-requisites</p> <ul style="list-style-type: none"> • Reflection • Rotation • Angles and directions • Vectors • Scale factors • Enlargements <p>Foundation Tier (up to Grade 5)</p> <ul style="list-style-type: none"> • Describe and perform transformation of shapes. • Standard construction (Y9) • Loci (Y9) <p>Additional content for Higher Tier (up to Grade 9)</p> <ul style="list-style-type: none"> • Negative enlargements of shapes • Invariant points and lines. • Trigonometric graphs. • Graph transformations. • Proof for congruent triangles. <p><u>Unit 11 Listing and Describing</u></p> <p>Pre-requisites</p> <ul style="list-style-type: none"> • Vectors • Two-way tables • Sample space diagrams
Learning Outcomes (Knowledge)	

	<p>Foundation Tier (up to Grade 5)</p> <ul style="list-style-type: none"> • Probability (tree diagrams and Venn diagrams) • Scatter graphs. • Comparing distributions • Plans and elevations. <p>Additional content for Higher Tier (up to Grade 9)</p> <ul style="list-style-type: none"> • Product rule for counting. • Box plots to compare distributions.
Current learning to be developed in the future within:	A Level mathematics: Transformations, trigonometry, probability
Assessment	Refer to assessment maps for formative and summative assessment opportunities.
Impact	Attainment and Progress – Refer to assessment results / data review documentation.