



# YEAR 9 2023-2024 SUMMER TERM 2

'An ambitious curriculum that meets the needs of all'

## Medium Term Planning

### 15. Probability 16. Algebraic Representation

#### Curriculum Intent

#### UNIT 15: PROBABILITY, (7 lessons)

##### *Previously met:*

- Tables and probability (Year 8 Aut 1)
- Sets and Probability (Year 7 Sum 2)

To be able to:

- Find single event probabilities (R)
- Work with relative frequencies
- Calculate expected outcomes
- Calculate probabilities of independent events
- **Use tree diagrams (H)**
- **Use tree diagrams to solve 'without replacement' problems (H)**
- Use diagrams to work out probabilities

##### REMINDER – Strategies for teaching.

- Use a variety of fractions, decimals and percentages in worked examples

##### Links and interleaving

- FDP conversions
- Know the different types of numbers (primes, squares, multiples etc.)

#### Skills/Assessment Objective Links

#### UNIT 16: ALGEBRAIC REPRESENTATION, (7 lessons)

##### *Previously met:*

- Straight line Graphs (Year 9 Aut 1)
- The Cartesian Plane (Year 8 Aut 2)

To be able to:

- Draw and Interpret Quadratic Graphs
- Interpret other graphs, including reciprocal and piece-wise
- **Investigate graphs of simultaneous equations (H)**
- Represent inequalities

##### REMDINER – Strategies for teaching.

- Use tables of values to introduce the different types of graphs. These can be use throughout for weaker classes who need more support

##### Links and interleaving

- Solving simultaneous equations algebraically
- Straight line graphs

	<ul style="list-style-type: none"> <li>Coordinates</li> <li>Solving inequalities</li> <li>Representing inequalities on number lines</li> </ul> <p><b>CONSOLIDATION (10/11 lessons)</b></p> <p>This time can be used for the following:</p> <ul style="list-style-type: none"> <li>Catching up on any missed small steps.</li> <li>Working through any of the suggested extension tasks below.</li> <li>Working on any misconceptions which may have been identified with either the low stakes quizzes or the End of Year 9 Assessment using the QLA.</li> </ul>
<b>Spiritual, moral, social, and cultural development</b>	<p><b>SMSC:</b> 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> <p><b>PSHE/British Values:</b> Working collaboratively, being respectful during discussion and valuing contributions made by others</p> <p><b>Skills Builder: Key skills in numeracy used in all topic areas.</b></p>
<b>Numeracy</b>	<b>Focus on key skills.</b>
<b>Literacy</b>	<p><b>Vocabulary Tier 2:</b> 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><b>Vocabulary Tier 3:</b> Title slide in all shared resource presentations show the key vocabulary for each topic.</p> <p><b>Reading:</b> Underlining command words,</p> <p><b>Writing:</b> Modelling solutions</p> <p><b>Oracy:</b> Think, pair, share, discussion, verbal feedback (peer to peer), questioning, student modelling</p>
<b>Becoming future ready</b>	<p><b>Personal Skills:</b> 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><b>Employability:</b> 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>
<b>Adaptation</b>	<ul style="list-style-type: none"> <li>By progressive questioning: exploring pupils' understanding through interactive dialogue.</li> <li>By outcome: different learners will produce different outcomes.</li> <li>By resource: worksheets are clearly presented and accessible.</li> <li>By intervention: by providing different levels of supervision and support.</li> <li>By grouping/setting: according to prior attainment, gender, social preference, preferred learning style.</li> <li>By offering optional activities: In class or as homework, to extend learning.</li> </ul>
<b>QFT/SEND Provision</b>	
<b>Implementation Curriculum Delivery</b>	<p><b>Support (S), Core (C), Extension (E).</b></p> <p><b>Probability - small steps</b></p> <ul style="list-style-type: none"> <li>Single event probabilities (S)</li> <li>Relative frequencies (S)</li> <li>Expected outcomes (S/C)</li> <li>Independent events (C/E)</li> <li>Use tree diagrams (E)</li> <li>Use tree diagrams to solve 'without replacement' problems (E)</li> <li>Use diagrams to work out probabilities (C/E)</li> </ul>
<b>Learning Outcomes (Most Powerful Knowledge)</b>	

	<p><u>Extension tasks</u></p> <ul style="list-style-type: none"> <li>• Tree diagram problems involving algebra (creating and solving equations)</li> </ul> <p><b>Algebraic Representation - small steps</b></p> <ul style="list-style-type: none"> <li>• Draw and Interpret Quadratic Graphs (S)</li> <li>• Interpret other graphs, including reciprocal and piece-wise (S-cubics) (C/E-all)</li> <li>• <b>Investigate graphs of simultaneous equations (E)</b></li> <li>• Represent inequalities (C/E)</li> </ul>
Current learning to be developed in the future within:	<p><u>Probability</u></p> <ul style="list-style-type: none"> <li>• Probability (<b>Year 10, Spr 2</b>)</li> <li>• Collecting, Representing and Interpreting data (<b>Year 10 Sum 1</b>)</li> <li>• Listing and Describing (<b>Year 11, Spr 2</b>)</li> </ul> <p><u>Algebraic Representation</u></p> <ul style="list-style-type: none"> <li>• Representing solutions to equations and inequalities (<b>Year 10, Aut 1</b>)</li> <li>• Simultaneous Equations (<b>Year 10 Aut 1</b>)</li> <li>• Non-linear Graphs (<b>Year 11, Aut 2</b>)</li> <li>• Using Graphs (<b>Year 11, Aut 2</b>)</li> </ul>
Assessment	Refer to assessment maps for formative and summative assessment opportunities.
Impact	Attainment and Progress – Refer to assessment results / data review documentation.