



# YEAR 9 2023-2024 SPRING TERM 1

'An ambitious curriculum that meets the needs of all'

## Medium Term Planning

### 7. Using Percentages 8. Maths and Money 9. Angles and Deduction

#### Curriculum Intent

#### UNIT 7: USING PERCENTAGES, (7 lessons)

##### *Previously met:*

- Fractions and percentages (Year 8, Spr 1)
- Standard Index Form (Year 8, Spr 2)

To be able to:

- Use the equivalence of fractions, decimals and percentages (R)
- Calculate percentage increase decrease (R)
- Express a change as a percentage (R)
- Solve 'reverse' percentage problems
- Recognise and solve percentage problems (non-calculator)
- Recognise and solve percentage problems (calculator) (R)
- **Solve problems with repeated percentage change (H)**

##### REMDINER – Strategies for teaching.

- Ratio tables for breaking down percentages

##### Links and interleaving

- Links with fractions and decimals
- Multiplication and division, including powers of 10
- Real-life mathematics- sales, banking

#### Skills/Assessment Objective Links

#### UNIT 8: MATHS AND MONEY, (7 lessons)

##### *Previously met:*

- This is new content, however the skills required have been met before (percentages/proportion)
- Solve financial maths problems (Year 7 Spr 1)

To be able to:

- Solve problems with bills and bank statements
- Calculate simple interest
- Calculate compound interest
- Solve problems with VAT
- Calculate wages and taxes
- Solve problems with exchange rates
- Solve unit pricing problems

##### REMDINER – Strategies for teaching.

- Ratio tables building up/ breaking down percentages and prices

##### Links and interleaving

- Percentages
- Real-life mathematics- best buys, banking and savings etc.

## UNIT 9: DEDUCTION, (7 lessons)

### *Previously met:*

- Angles in Parallel Lines (Year 8 Sum 1).
- Construction (Year 9 Aut 2)

To be able to:

- Angles in parallel lines (R)
- Solving angle problems (using chains of reasoning)
- Angles problems with algebra
- Conjecture with angles
- Conjecture with shapes
- **Link constructions and geometrical reasoning (H)**

### Links and interleaving

- Using a compass, ruler, protractor
- Simplifying expressions
- Creating and solving equations

	<ul style="list-style-type: none"> <li>• Percentages</li> <li>• Real-life mathematics- best buys, banking and savings etc.</li> </ul> <h2>UNIT 9: DEDUCTION, (7 lessons)</h2> <h3><i>Previously met:</i></h3> <ul style="list-style-type: none"> <li>• Angles in Parallel Lines (Year 8 Sum 1).</li> <li>• Construction (Year 9 Aut 2)</li> </ul> <p>To be able to:</p> <ul style="list-style-type: none"> <li>• Angles in parallel lines (R)</li> <li>• Solving angle problems (using chains of reasoning)</li> <li>• Angles problems with algebra</li> <li>• Conjecture with angles</li> <li>• Conjecture with shapes</li> <li>• <b>Link constructions and geometrical reasoning (H)</b></li> </ul> <h3><u>Links and interleaving</u></h3> <ul style="list-style-type: none"> <li>• Using a compass, ruler, protractor</li> <li>• Simplifying expressions</li> <li>• Creating and solving equations</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:</b> Key skills in numeracy used in all topic areas.</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>	
<b>QFT/SEND Provision</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> </ul>

	<ul style="list-style-type: none"> <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>Implementation Curriculum Delivery</b>	<p><b>Support (S), Core (C), Extension (E).</b></p> <p><b>Using Percentages – small steps</b></p> <ul style="list-style-type: none"> <li>• Use the equivalence of fractions, decimals and percentages (S)</li> <li>• Calculate percentage increase decrease (S/C)</li> <li>• Express a change as a percentage (S/C)</li> <li>• Solve ‘reverse’ percentage problems (C/E)</li> <li>• Recognise and solve percentage problems (non-calculator) (C/E)</li> <li>• Recognise and solve percentage problems (calculator) (C/E)</li> <li>• Solve problems with repeated percentage change (E)</li> </ul> <p><u>Extension tasks – These could be interleaved within the core knowledge.</u></p> <ul style="list-style-type: none"> <li>• Growth and decay- will be covered Y10 Spr 2</li> <li>• Iteration- will be covered Y10 Spr 2</li> </ul> <p><b>Maths and Money – small steps</b></p> <ul style="list-style-type: none"> <li>• Solve problems with bills and bank statements (S/C)</li> <li>• Calculate simple interest (S/C)</li> <li>• Calculate compound interest (C/E)</li> <li>• Solve problems with VAT (C/E)</li> <li>• Calculate wages and taxes (C/E)</li> <li>• Solve problems with exchange rates (E)</li> <li>• Solve unit pricing problems (C/E)</li> </ul> <p><u>Extension tasks</u></p> <ul style="list-style-type: none"> <li>• Iteration- will be covered Y10 Spr 2</li> </ul> <p><b>Deduction - small steps</b></p> <ul style="list-style-type: none"> <li>• Angles in parallel lines (S)</li> <li>• Solving angle problems (using chains of reasoning) (S/C)</li> <li>• Angles problems with algebra (C/E)</li> <li>• Conjecture with angles (C/E)</li> <li>• Conjecture with shapes (C/E)</li> <li>• Link constructions and geometrical reasoning (E)</li> </ul> <p><u>Extension tasks</u></p> <ul style="list-style-type: none"> <li>• Angles and bearings- will be covered Y10 Spr 1</li> </ul>
<b>Learning Outcomes (Most Powerful Knowledge)</b>	
<b>Current learning to be developed in the future within:</b>	<p><b>Using Percentages</b></p> <ul style="list-style-type: none"> <li>• Percentages and Interest <b>(Year 10, Spr 2)</b></li> <li>• Multiplicative Reasoning <b>(Year 11, Aut 2)</b></li> <li>• </li> </ul> <p><b>Maths and Money</b></p> <ul style="list-style-type: none"> <li>• Non Calculator Methods <b>(Year 10, Sum 1)</b></li> <li>• Multiplicative Reasoning <b>(Year 11, Aut 2)</b></li> </ul> <p><b>Deduction</b></p> <ul style="list-style-type: none"> <li>• Angles and Bearing <b>(Year 10, Aut 2)</b></li> <li>• Geometric Reasoning <b>(Year 11, Spr 1)</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.