YEAR 8 Maths

Summer 1

MAGHULL HIGH SCHOOL – CURRICULUM MAP

Unit:	Lesson Sequence	
	Angles in parallel lines and polygons 1. Basic angles rules and notation 2. Angles between parallel lines and a transversal 3. Alternate and corresponding angles 4. Alternate, corresponding and co-interior angles 5. Solve complex problems with angles in parallel lines 6. Properties of special quadrilaterals and their diagonals 7. Find sides and angles in special quadrilaterals 8. Exterior angles of a polygon 9. Interior angles of a polygon 10. Interior angles in a regular polygon 11. Prove simple geometric proofs (E)	**Tables and probability** 1. Probability vocabulary 2. The probability scale 3. Probability of a single event 4. Use the sum of probabilities being equal to 1 5. Probability experiments 6. Sample spaces for 1 or more events 7. Probabilities from sample space diagrams 8. Two-way tables 9. Probabilities from two-way tables 10. Frequency trees 11. Probabilities from frequency trees
Knowledge & Skills development	**Fluency** • Recall and apply angle facts such as corresponding, alternate, and co-interior angles in parallel lines • Use the angle sum of triangles (180°), quadrilaterals (360°), and polygons to find missing angles • Identify and name types of angles (acute, obtuse, reflex, etc.) quickly and accurately • Recognise properties of regular and irregular polygons **Reasoning** • Justify why angles are equal or supplementary using known angle rules • Explain how angle sums are calculated in polygons using the formula $(n-2) \times 180°$ • Identify and describe patterns in angles within regular polygons • Use logical steps to show how one angle leads to another in a geometric diagram **Problem-Solving** • Work through multi-step problems involving angles in composite shapes • Apply angle rules to solve unfamiliar problems or real-life contexts such as architecture or design	**Fluency** • Accurately read and interpret data from frequency tables, two-way tables, and Venn diagrams • Calculate basic probabilities, including simple events and complementary probabilities • Convert raw data or frequencies into probabilities quickly and correctly **Reasoning** • Compare and explain why some events are more or less likely than others • Identify patterns or relationships within tables that affect probability calculations • Justify conclusions about probability based on data and logical thinking **Problem-Solving** • Solve problems involving missing data or incomplete tables by using probability rules • Combine information from different parts of tables to find overall probabilities • Apply probability concepts to real-life situations, such as interpreting survey results or analysing games of chance

	• Combine knowledge of parallel lines and polygons to solve complex angle problems • Check solutions for accuracy and consistency using reasoning and known facts	• Evaluate whether answers are reasonable in the context of the problem
Assessment / Feedback Opportunities	**Formative Assessment** Assessment for learning is integrated throughout each small step with suggested questions, activities and checks for understanding that are adapted for the setting.	**Summative assessment** Summative assessment includes end of block assessments and mark schemes as well as interleaved end of term assessments and mark schemes.
Key Vocabulary	Angle, vertex, acute, right angle, obtuse, straight angle, reflex, complementary angles, supplementary angles, adjacent angles, vertically opposite angles), interior angles, exterior angles, polygon, regular, irregular, triangle, quadrilateral, pentagon, hexagon, heptagon, octagon, decagon, sum, diagonal, parallel lines, transversal, angle at a point, angle on a straight line	Probability, experiment, outcome, event, sample space, certain, impossible, likely, unlikely, equally likely, fair, random, frequency, relative frequency, theoretical probability, experimental probability, complement, independent events, dependent events, mutually exclusive, tree diagram, Venn diagram, probability scale
Personal Development (Including British Values, RSE, Citizenship)	In studying probability students will develop a sense of the idea of comparing chance and risk which will help with these areas of PSHE L27. strategies to critically assess bias, reliability and accuracy in digital content L15. to assess and manage risk in relation to financial decisions that young people might make R14. the opportunities and potential risks of establishing and conducting relationships online, and strategies to manage the risks They will also encounter games of chance and develop an understanding behind the concepts behind PSHE NC H25. to understand and build resilience to thinking errors associated with gambling (e.g. 'gambler's fallacy') the range of gambling-related harms, and how to access support for themselves or others	
Career Opportunities	Career opportunities linked to angles in parallel lines and polygons include architect, engineer, and surveyor, as these professionals use geometric principles to design structures, analyse forces, and measure land accurately. For tables and probability, careers such as statistician, insurance underwriter, and market researcher rely on organizing data and assessing likelihoods to make informed predictions and decisions. Both areas are essential for solving practical problems and interpreting information in various fields.	