



Spring Learning Journey for Maths

Year 7H Unit 1 Analysing and Displaying Data



How does this unit link to prior learning?

Pictograms and bar charts

- Pupils interpret and draw simple bar charts and pictograms.

Interpreting data

- Reading information from charts and answering questions like “how many more?”

Tally charts and frequency tables

- Counting results using tally marks and organising data.

Averages (mean, median, mode introduced informally)

- Pupils may find simple averages or “typical values.”

Range (informal understanding)

- Finding the difference between highest and lowest values in simple contexts.

Sorting and classifying data

- Grouping objects or numbers into categories.

Using scales on graphs

- Understanding intervals on axes in simple graphs.

Prior Knowledge Check

- What type of graphs have you heard of?
- Why do you use graphs?
- Calculate without a calculator:
 - $6 + 3 + 7 + 5 + 5$
 - $35 \div 7$
- What is a quarter of 8?

What will you be learning about?

- Interpret and construct tables, charts and diagrams.
- Interpret, analyse and compare the distributions of data sets.

How does this link to the wider curriculum?

- The five British values are embedded in maths lessons through collaborative problem-solving, mutually respecting discussions of different methods, following classroom rules, making independent choices and appreciating diverse perspectives and contributions.

We will develop our learning each week by focusing on:

1. Data Collection Identify sources of primary and secondary data. Choose a suitable sample size. Understand how to reduce bias in sampling and questionnaires. Identify a random sample.	RAG	2. Two-Way Tables Draw and interpret two-way tables.	RAG
3. Bar Charts Draw and interpret dual bar charts. Draw and interpret compound bar charts.		4. Averages and Range Calculate mean, median, mode and range from a list.	
5. Choosing the best average Know which type of average is best to use in different circumstances.		6. Comparing data sets Compare sets of data using averages and range.	

7. Consolidation Consolidation on all work covered so far on the topic. Long periods of deliberate practice. Should contain exam questions.		8. Grouped Data Group discrete and continuous data. Draw and interpret grouped frequency diagrams.				
9. Misleading Graphs Recognise and know when a graph is misleading.		10. Pie Charts Draw and interpret pie charts.				
11. Scatter Graphs Draw and interpret scatter graphs. Describe the correlation between two data sets. Draw a line of best fit and use it to estimate values.		12. Revision Lesson • Select topics you feel the class need to revise. • Classroom based or Mathswatch.				
13. Assessment Lesson • Do 10-minute top up and go through answers together, students self-assess. • Open book assessment done in silence.		14. Feedback Lesson • Student to highlight their traffic light sheet. • Teacher to go through test and students to self-assess in green. • Students to complete the NOW section of the WOW-HOW-NOW sheet.				
Key Vocabulary						
Mean	Median	Mode	Represent	Interpret	Data	Frequency
Range	Tally	Statistics	Graph	Table	Discrete	Continuous

How will this help you in the future?	
KS4	Beyond LHS
Interpreting graphs and charts Links to interpreting more complex graphs such as cumulative frequency graphs, box plots, and scatter graphs. Averages and range Links to comparing distributions using averages and measures of spread, including grouped data and estimated mean. Representing data Links to choosing and drawing appropriate statistical diagrams, including histograms and cumulative frequency graphs. Types of data (discrete and continuous) Links to selecting appropriate graph types based on data type, such as histograms for continuous data. Data analysis and interpretation Links to drawing conclusions, identifying trends, and justifying decisions using statistical evidence.	Interpreting graphs and charts Links to analysing complex data sets in higher-level statistics, including research studies and real-world data modelling. Averages and range Links to using statistical measures in advanced contexts such as sampling, inference, and data modelling in higher education and careers. Representing data Links to selecting and using advanced statistical representations in fields such as science, economics, and social research. Data analysis and interpretation Links to critical analysis of data in real-world contexts, including research, business decision-making, and scientific investigation.



Spring Learning Journey for Maths

Year 7H Unit 2 Number



How does this unit link to prior learning?

- **Place Value**
Builds on reading, writing, ordering, and comparing whole numbers and decimals.
- **The Four Operations**
Builds on addition, subtraction, multiplication, and division using mental and written methods.
- **Negative Numbers**
Builds on counting forwards and backwards through zero and using negative numbers in context.
- **Factors and Multiples**
Builds on identifying multiples, factors, prime numbers, and common factors.
- **Rounding and Estimation**
Builds on rounding numbers and checking whether answers are reasonable.
- **Problem Solving**
Builds on applying number skills in a range of real-life and mathematical contexts.

Prior Knowledge Check

- 1) 37×4
- 2) $346 + 757$
- 3) $342 \div 6$
- 4) Put the following numbers in ascending order
 $4 \quad -7 \quad 2 \quad -9 \quad -11 \quad 0$

What will you be learning about?

- Be able to find factors, multiples, prime and negative numbers, squares, cubes and roots and use them to solve problems.
- Use long multiplication and division.

How does this link to the wider curriculum?

- The five British values are embedded in maths lessons through collaborative problem-solving, mutually respecting discussions of different methods, following classroom rules, making independent choices and appreciating diverse perspectives and contributions.

We will develop our learning each week by focusing on:

Lesson 1: Factors, Multiples and Primes • Understand the different between multiples, factors and prime. • Find all the factor pairs of any whole number • Find the HCF and LCM of two numbers.	RAG	Lesson 2: Adding and Subtracting Negative Numbers • To be able to add and subtract negative numbers.	RAG
Lesson 3: Multiplying and Dividing Negative Numbers • To be able to multiply and divide negative numbers.		Lesson 4: Multiplying Integers • Use mental and written strategies for multiplication.	
Lesson 5: Dividing Integers • Divide a 3-digit number by a single or 2-digit number.		Lesson 6: Consolidation • Consolidation on all work covered so far on the topic. • Long periods of deliberate practice. • Should contain exam questions.	

Lesson 7: Squares and Roots • Use index notation for squares and square roots. • Calculate with squares and square roots.				Lesson 8: More Powers and Roots • Carry our calculations involving squares, cubes, square roots and cube roots. • Solved word problems using square and cube roots.			
Lesson 9: Estimations • Estimate answers to complex calculations. • Carry out calculations involving brackets.				Lesson 10: Revision Lesson • Select topics you feel the class need to revise. • Classroom based or Mathswatch.			
Lesson 11: Assessment Lesson • Do 10-minute top up and go through answers together, students self-assess. • Open book assessment done in silence.				Lesson 12: Feedback Lesson • Student to highlight their traffic light sheet. • Teacher to go through test and students to self-assess in green. • Students to complete the NOW section of the WOW-HOW-NOW sheet.			
Key Vocabulary							
Add	Subtract	Multiply	Divide	Negative	Positive	Estimate	
Round	Multiples	Factors	Prime	Power	Root	Inverse	

How will this help you in the future?	
KS4 Place Value Links to working with standard form, estimation, and calculations involving very large and very small numbers. The Four Operations Links to more complex calculations involving algebra, ratio, and problem-solving in a variety of contexts. Negative Numbers Links to solving algebraic equations, interpreting graphs, and working with coordinates and transformations. Factors and Multiples Links to algebraic factorisation, simplifying expressions, and solving problems involving HCF and LCM. Rounding and Estimation Links to checking the accuracy of calculations, bounds, and making sensible approximations. Problem Solving Links to applying mathematical reasoning, selecting efficient methods, and solving multi-step problems across all areas of mathematics.	Beyond LHS Place Value Links to scientific calculations, engineering, computing, and working with large data sets. The Four Operations Links to everyday financial calculations, budgeting, business, and technical problem-solving. Negative Numbers Links to interpreting temperatures, financial gains and losses, and data analysis in science and geography. Factors and Multiples Links to advanced mathematics, computing algorithms, engineering, and logical reasoning. Rounding and Estimation Links to making informed decisions, checking accuracy, and working efficiently in a wide range of careers. Problem Solving Links to critical thinking, decision-making, and tackling complex problems in education, employment, and everyday life.



Spring Learning Journey for Maths

Year 7H Unit 3 Expressions and Equations



How does this unit link to prior learning?

- **Use simple formulae.**
Link to lesson 3: Using formulae
- **Find missing numbers in calculations.**
Link to lesson 8 and 9: Solving equations
- **Use symbols and letters to represent unknown values.**
Links to all lessons
- **Understand the equals sign as meaning "the same as," not simply "the answer is."**
Link to lesson 8, 9 and 10: Solving equations

Prior Knowledge Check

1) Calculate the following:

a) $-4 + 8$

b) $-7 - 3$

c) -6×4

d) -3×-7

2) If $x = 5$, what is $x - 4$?

3) Simplify:

a) $5x + 4x$ _____

b) $10y - 6y$ _____

4) Filling in the missing numbers to make the calculations correct:

a) $4 \times \underline{\quad} = 28$ b) $21 \div \underline{\quad} = 3$ c) $10 - \underline{\quad} = 4$

5) Here is a square with perimeter 48cm.

a) Find the side length of the square.



Perimeter =
48cm

b) Hence or otherwise, find the area of the square.

What will you be learning about?

- Identify and manipulate algebraic expressions, equations, functions and formulae.
- Solve one-step equations.
- Write and solve two-step equations.
- Solve equations where the unknown appears on both sides.

How does this link to the wider curriculum?

- The five British values are embedded in maths lessons through collaborative problem-solving, mutually respecting discussions of different methods, following classroom rules, making independent choices and appreciating diverse perspectives and contributions.

We will develop our learning each week by focusing on:

1. Simplifying algebraic expressions	RAG	2. Writing algebraic expressions	RAG
• Simplifying expressions by collecting like terms • Simplify expressions that have been multiplied and divided		• Construct expressions using the four operations	
3. Using formulae • Substitute values into formulae		4. Writing formulae • Derive formulae from a given description	

5. Brackets and powers - Expand expressions involving brackets - Substitute values into expressions involving brackets		6. Factoring expressions Factorise linear algebraic expressions				
7. Consolidation - Consolidation on all work covered so far on the topic. - Long periods of deliberate practice. - Should contain exam questions		8. Solving one-step equations - Write and solve simple equations. - Solve problems using equations.				
9. Solving two-step equations - Write and solve two-step equations. - Write and solve equations that have brackets.		10. More complex equations Write and solve equations with letters on both sides.				
11. Trial and improvement - Solve equations that include x^2 and x^3 - Use trial and improvement to find solutions to 1 decimal place.		12. Revision Lesson - Select topics you feel the class need to revise. - Classroom based or Mathswatch.				
13. Assessment Lesson - Do 10-minute top up and go through answers together, students self-assess. - Open book assessment done in silence.		14. Feedback Lesson - Student to highlight their traffic light sheet. - Teacher to go through test and students to self-assess in green. - Students to complete the NOW section of the WOW-HOW-NOW sheet.				
Key Vocabulary						
Equations	Inverse	Opposite	Operation	Term	Solve	Unknown
Simplify	Algebra	Substitute	Variable	Brackets	Term	Expressions

How will this help you in the future?	
KS4 - Build confidence with algebra. - Help solve more complex equations at GCSE. - Support simplifying, expanding, and factorising expressions. - Develop skills for drawing and interpreting graphs. - Help with using and rearranging formulae. - Support work on sequences and patterns. - Are used in geometry, trigonometry, probability, and statistics. - Improve problem-solving and reasoning skills. - Provide the foundation for many KS4 maths topics. - Make GCSE mathematics easier to understand and apply.	Beyond LHS - Support studying A-level Mathematics and Further Mathematics, Physics and Chemistry. - Help solve real-life problems involving formulas and calculations. - Develop logical and analytical thinking skills. - Support courses in engineering, computing, economics, and finance. - Help with interpreting data and making predictions. - Are used in many careers, including science, technology, engineering, and business. - Improve confidence in problem-solving and decision-making. - Help understand how mathematics is used in everyday life and the workplace.

5. Adding and Subtracting Fractions - Convert between improper and mixed numbers - Add and subtract fractions and mixed numbers		6. Multiplying and Dividing Fractions Multiply and divide fractions and mixed numbers				
7. Consolidation lesson - Consolidation on all work covered so far on the topic. - Long periods of deliberate practice. - Should contain exam questions		8. Rounding Decimals Rounding to decimal places.				
9. Adding and Subtracting Decimals Add and subtract decimals		10. Multiplying Decimals Multiply a decimal by an integer; use place value to multiply decimals.				
11. Dividing Decimals Divide a decimal by a whole number; divide a number by a decimal.		12. Working with Percentages without a Calculator Calculate percentages with and without a calculator; percentage increases/decreases; reverse percentage problems.				
13. Working with Percentages with a calculator Calculate percentages with and without a calculator; percentage increases/decreases; reverse percentage problems.		14. Revision Lesson - Select topics you feel the class need to revise. - Classroom based or Mathswatch.				
15. Assessment Lesson - Do 10-minute top up and go through answers together, students self-assess. - Open book assessment done in silence.		16. Feedback Lesson - Student to highlight their traffic light sheet. - Teacher to go through test and students to self-assess in green. - Students to complete the NOW section of the WOW-HOW-NOW sheet.				
Key Vocabulary						
Fractions	Decimal	Percentage	Numerator	Denominator	Equivalent	Cancel
Simplify	Improper	Mixed	Express	Compare	Order	Place Value

How will this help you in the future?	
KS4 Fractions of Amounts → Supports GCSE ratio, proportion, percentages, scale factors, and compound measures. FDP Conversion → Essential for switching between fractions, decimals, and percentages across GCSE topics and real-life contexts. Adding & Subtracting Fractions → Needed for algebraic fractions, equations, probability, and evaluating expressions. Multiplying & Dividing Fractions → Underpins algebraic fractions, scaling, ratio, compound measures, and geometry.	Beyond LHS Everyday Money Skills → Fractions and percentages support budgeting, discounts, interest rates, and comparing deals. Cooking & Home Life → Used for measuring, scaling recipes, and sharing portions accurately. DIY & Trades → Essential for measurements, ratios, and scaling in construction and design. Healthcare. Science & Technology → Applied in dosages, data analysis, and technical calculations. Problem Solving → Develops reasoning, logical thinking, and decision-making skills.



Spring Learning Journey for Maths

Year 7H Unit 5 Angles and Shapes



How does this unit link to prior learning?

- **Angles around a point add to 360 degrees**
Link to Lesson 1: Angles and parallel lines
- **Angles on a straight line add to 180 degrees**
Link to lesson 1: Angles and parallel lines
- **Name types of triangles**
Link to lesson 2: Angles in triangles
- **Name types of angles**
Link to all lessons
- **Name types of quadrilaterals**
Link to lesson 4: Angles in quadrilaterals
- **Lines of symmetry in a rectangle**
Link to lesson 4: Angles in a quadrilaterals

Prior Knowledge Check

- 1) Complete the sentences:
 - a) Angles around a point add up to _____°
 - b) Angles on a straight line add up to _____°
- 2) Name and sketch the four types of triangles:
- 3) Complete the sentences:
 - a) An _____ angle is less than 90°
 - b) An _____ angle is between 90° and 180°
 - c) A _____ angle is over 180°
- 4) Name and sketch types of quadrilaterals:
- 5) How many lines of symmetry does a rectangle have?

What will you be learning about?

- Know and apply angle properties of lines and shapes.
- Use congruence and similarity properties.
- Solve problems using coordinate axes.

How does this link to the wider curriculum?

- The five British values are embedded in maths lessons through collaborative problem-solving, mutually respecting discussions of different methods, following classroom rules, making independent choices and appreciating diverse perspectives and contributions.

We will develop our learning each week by focusing on:

Lesson 1: Angles and Parallel Lines 1	RAG	Lesson 2: Angles and Parallel Lines 2	RAG
• Work out unknown angles when two or more lines meet or cross at a point. • Work out unknown angles involving parallel lines.		• Work out unknown angles when two or more lines meet or cross at a point. • Work out unknown angles involving parallel lines.	
Lesson 3: Angles in Triangles		Lesson 4: Angles in Quadrilaterals	
• Describe the line and rotational symmetry of triangles. • Understand how to prove that a result is true. • Use properties of a triangle to work out unknown angles. • Use the properties of isosceles and equilateral triangles to solve problems.		• Describe the line and rotational symmetry of quadrilaterals. • Describe the properties of quadrilaterals. • Solve problems involving quadrilaterals.	

Lesson 5: Consolidation lesson - Consolidation on all work covered so far on the topic. - Long periods of deliberate practice. - Should contain exam questions		Lesson 6: Polygons 1 Work out the interior and exterior angles of a polygon.				
Lesson 7: Polygons 2 Work out the interior and exterior angles of a polygon.		Lesson 8: Revision Lesson - Select topics you feel the class need to revise. - Classroom based or Mathswatch.				
Lesson 9: Assessment Lesson (non-calculator) - Do 10-minute top up and go through answers together, students self-assess. - Open book assessment done in silence.		Lesson 10: Feedback Lesson - Student to highlight their traffic light sheet. - Teacher to go through test and students to self-assess in green. - Students to complete the NOW section of the WOW-HOW-NOW sheet.				
Key Vocabulary						
Opposite	Parallel	Angle	Perpendicular	Degree	Diagonal	Quadrilateral
Interior	Exterior	Polygon	Horizontal	Vertical	Diagonal	Proof

How will this help you in the future?	
KS4 Angles and Parallel Lines - You will need to find missing angles using angle facts and parallel line rules. - These questions appear regularly on both Foundation and Higher papers. - Builds essential geometry and problem-solving skills. Angles in Triangles - Helps you find unknown angles using triangle properties. - Understanding isosceles and equilateral triangles is a key GCSE skill. - Introduces mathematical reasoning and proof. Angles in Quadrilaterals - You will need to use angle rules and properties of quadrilaterals to solve problems. - Commonly tested in geometry questions. - Links to shape, symmetry, and angle topics across the GCSE course. Polygons - You will need to calculate interior and exterior angles of polygons. - A frequent topic in GCSE geometry exams. - Builds on angle knowledge from triangles and quadrilaterals.	Beyond LHS Angles and Parallel Lines - Used in construction, engineering, and architecture when designing structures. - Helps with reading plans, diagrams, and technical drawings accurately. - Develops logical thinking and problem-solving skills. Angles in Triangles - Important in surveying, construction, and design. - Used to calculate distances, heights, and measurements. - Symmetry is useful in art, design, and manufacturing. Angles in Quadrilaterals - Helps when designing buildings, rooms, roads, and other structures. - Useful in engineering, architecture, and product design. - Supports spatial awareness and accuracy in technical work. Polygons - Used in architecture, engineering, computer graphics, and design. - Helps with creating and analysing shapes in real-world projects. - Important for careers involving modelling and technical drawing.



Summer Learning Journey for Maths

Year 7H Unit 6 Multiplicative Reasoning



How does this unit link to prior learning?

- **Multiplication and division**
Links to all lessons
- **Factors and multiples**
Links to all lessons
- **Multiplying and dividing by powers of 10**
Link to lesson 1: Converting units
- **Familiarity with metric units of measure**
Link to lesson 1: Converting units
- **Understanding scaling in length, mass and capacity**
Link to lesson 1: Converting units
- **Sharing quantities equally**
Link to lesson 3: Sharing in a ratio

Prior Knowledge Check

1. What is 6×14 ?
What is $64 \div 4$?
2. What are the factors of 12?
What are the first 5 multiples of 12?
3. What is 35×1000 ?
What is $35 \div 100$?
4. How many centimetres are in 1 metre?
5. If a recipe uses 2 cups of flour and you double it, how many cups of flour do you need?
6. If 24 sweets are shared equally between 6 children, how many sweets does each child get?

What will you be learning about?

- To simplify and share in a ratio.
- To be able to solve problems both worded and not involving proportion.

How does this link to the wider curriculum?

- The five British values are embedded in maths lessons through collaborative problem-solving, mutually respecting discussions of different methods, following classroom rules, making independent choices and appreciating diverse perspectives and contributions.

We will develop our learning each week by focusing on:

1. Converting Units

- Convert between metric and imperial units.
- Use metric units.

RAG

2. Writing Ratios

- Write a ratio in its simplest form.
- Simplify a ratio expressed in fractions or decimals.

RAG

3. Sharing in a given ratio Share a quantity in 2 or more parts in a given ratio.				4. Consolidation lesson - Consolidation on all work covered so far on the topic. - Long periods of deliberate practice. - Should contain exam questions			
5. Proportion Understand the relationship between ratio and proportion.				6. Direct Proportional Reasoning Solve simple word problems involving ratio and direct proportion.			
7. Inverse Proportional Reasoning Solve simple word problems involving ratio and inverse proportion.				8. Unitary Method - Solve problems involving ratio and proportion using the unitary method. - Write ratios in the form 1 : n - Solve best buy problems.			
9. Revision Lesson - Select topics you feel the class need to revise. - Classroom based or Mathswatch.				10. Assessment Lesson - Do 10-minute top up and go through answers together, students self-assess. - Open book assessment done in silence.			
11. Feedback Lesson - Student to highlight their traffic light sheet. - Teacher to go through test and students to self-assess in green. - Students to complete the NOW section of the WOW-HOW-NOW sheet.							
Key Vocabulary							
Simplify	Common factor	Share	Ratio	Inverse	Directly	Proportional	

How will this help you in the future?	
KS4 - GCSE questions often <i>assume</i> fluency with ratio tables and multiplicative relationships rather than teaching them explicitly. - KS3 multiplicative reasoning introduces: percentage increase/decrease as multipliers (e.g. $\times 1.2$, $\times 0.85$), repeated multiplication. - Used heavily in: Compound interest, depreciation, reverse percentages, GCSE problem-solving questions involving financial contexts. - Multiplicative reasoning helps students recognise: linear relationships, constant rate of change, scaling on axes.	Beyond LHS - Multiplicative reasoning underpins everyday money decisions: - Understanding discounts (25% off $\neq$ subtracting 25) - Comparing deals (3 for £5 vs £1.80 each) - Interest, loans, and savings growth - Taxes, pay rises, inflation - Many jobs rely on multiplicative thinking, even if they aren't "maths jobs": Examples: - Construction: scale drawings, material quantities - Healthcare: medication dosages, body-weight ratios - Retail & business: profit margins, stock levels - IT & data: rates, percentages, growth - Trades: measurements, tolerances, conversions



Summer Learning Journey for Maths

Year 7H Unit 7 Sequences and Graphs



How does this unit link to prior learning?

- **Number & Place Value** (Link to lesson 1 and 2)
Counting forwards/backwards, including negatives (Year 6)
Understanding place value up to 3 decimal places
- **Four Operations** (Link to lesson 1 and 2)
Secure addition, subtraction, multiplication, and division
Use of known facts to derive others
- **Algebra (Early)** (Link to lesson 1,2 and 3)
Using simple formulae
Generating and describing number sequences
- **Geometry – Position & Direction** (Link to lesson 5 and 6)
Coordinates in the first quadrant
Plotting and reading points on a grid
- **Statistics** (Link to lesson 5 and 6)
Reading scales on graphs
Interpreting information from charts

Prior Knowledge Check

1. What is the value of the digit 5 in the number 4.582?
2. What is $456 + 278$?
3. If $6 \times 8 = 48$, what is $48 \div 6$?
4. If a formula is $y=3x$, what is the value of y when $x=4$?
5. Write the next two numbers in the sequence: 5, 8, 11, 14, __, __.
6. What are the coordinates of point A if it is 3 across and 5 up on a grid?
For the point (4, 2), which number is the x-coordinate?
7. A bar chart shows 1 square = 10 students. If a bar has 4 squares, how many students does it represent?
8. A chart shows 12 children chose football and 8 chose tennis. How many more children chose football than tennis?

What will you be learning about?

- Find terms in a sequence and find the rule for a sequence.
- Plot straight line graphs using a variety of methods.

How does this link to the wider curriculum?

- The five British values are embedded in maths lessons through collaborative problem-solving, mutually respecting discussions of different methods, following classroom rules, making independent choices and appreciating diverse perspectives and contributions.

We will develop our learning each week by focusing on:

1. Sequences

- Work out the terms of an arithmetic sequence using the term-to-term rule.

RAG

2. The Nth Term

- Work out and use expressions for the n th term in an arithmetic sequence.

RAG

• Work out a given term in a simple arithmetic sequence.									
3. Pattern Sequences • Generate sequences and predict how they will continue. • Recognise geometric sequences and work out the term-to-term rule.		4. Consolidation lesson • Consolidation on all work covered so far on the topic. • Long periods of deliberate practice. • Should contain exam questions							
5. Coordinates and Line Segments • Use positive and negative coordinates. • Work out the midpoint of a line segment.		6. Graphs • Draw straight-line graphs. • Recognise straight-line graphs parallel to the axes. • Recognise graphs of $y = x$ and $y = -x$							
7. Revision Lesson • Select topics you feel the class need to revise. • Classroom based or Mathswatch.		8. Assessment Lesson • Do 10-minute top up and go through answers together, students self-assess. • Open book assessment done in silence.							
9. Feedback Lesson • Student to highlight their traffic light sheet. • Teacher to go through test and students to self-assess in green. • Students to complete the NOW section of the WOW-HOW-NOW sheet.									
Key Vocabulary									
Term	Nth	Rule	Proportion	Gradients	Plot	Gradient	Equation	Linear function	Midpoint

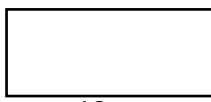
How will this help you in the future?	
KS4 - Writing the <i>n</i>th term of a sequence - Recognising linear vs non-linear sequences - Linking sequences to algebraic expressions - Quadratic sequences (second differences) - GCSE grade 7–9 sequence questions - Pattern spotting in algebraic proofs “Explain why” questions - Multi-mark reasoning questions in Edexcel GCSE papers - Linear graphs ($y = mx + c$) - Understanding <i>m</i> as rate of change - Interpreting real-life graphs (distance–time, conversion graphs)	Beyond LHS - Tracking savings or debt over time - Understanding pay rises or price increases - Interpreting fitness progress or training plans - Recognising patterns in data at work - Graphs show <i>how things change</i>, which is essential for: - Reading energy bills and usage charts - Interpreting medical data (e.g. heart rate, growth charts) - Understanding weather graphs - Analysing business performance - Many jobs rely on patterns and graphs - Examples: • Business & retail: sales trends, stock graphs • Healthcare: patient observations, dosage trends • Engineering & trades: time–cost relationships • IT & data roles: performance metrics • Sports & fitness: training load graphs



Summer Learning Journey for Maths

Year 7H Unit 8 Perimeter, Area and Volume



How does this unit link to prior learning?			
• Be able to multiply integers • Find the area of basic shapes • Draw nets			
Prior Knowledge Check			
1. Calculate: a) $16 \times 3 =$ b) $14 \times 2 =$ c) $6 \times 6 \times 6 =$ d) $8 \times 4 \times 5 =$			
2. Find the area: a)  4cm b)  3c			
3. Draw any net that would make a cube			
What will you be learning about?		How does this link to the wider curriculum?	
• Calculate the area of shapes including compound shapes • Calculate volume of cubes and cuboids • Calculate surface area of cubes and cuboids • Convert between units of measure.		• The five British values are embedded in maths lessons through collaborative problem-solving, mutually respecting discussions of different methods, following classroom rules, making independent choices and appreciating diverse perspectives and contributions.	
We will develop our learning each week by focusing on:			
1. Triangles, parallelograms and trapeziums • Calculate the area of triangles. • Calculate the area of parallelograms. • Calculate the area of trapeziums.	RAG	2. Perimeter and area of compound shapes • Calculate the perimeter of shapes made from rectangles and triangles. • Calculate the area of shapes made from rectangles and triangles.	RAG
3. Properties of 3D solids • Identify nets of different 3D shapes. • Know the properties of 3D shapes.		4. Consolidation lesson • Consolidation on all work covered so far on the topic. • Long periods of deliberate practice. • Should contain exam questions	
5. Surface area • Calculate the surface area of a cube. • Calculate the surface area of a cuboid.		6. Volume • Calculate the volume of a cube. • Calculate the volume of a cuboid. • Convert between different units of volume: cm^3, ml and litres.	

7. Measures of area and volume Convert between metric measures for area and volume.				8. Revision Lesson - Select topics you feel the class need to revise. - Classroom based or Mathswatch.					
9. Assessment Lesson - Do 10-minute top up and go through answers together, students self-assess. - Open book assessment done in silence.				10. Feedback Lesson - Student to highlight their traffic light sheet. - Teacher to go through test and students to self-assess in green. - Students to complete the NOW section of the WOW-HOW-NOW sheet.					
Key Vocabulary									
Area	Net	Volume	Area	Formula	Height	Base	Width	Length	Perpendicular

How will this help you in the future?	
KS4 Triangles, Parallelograms and Trapeziums - Area formulas are essential GCSE knowledge and appear regularly in exams. - Used in multi-step problems combining area with other topics. - Forms the foundation for compound area and problem solving. Perimeter and Area of Compound Shapes - A very common exam-style problem-solving topic. - Requires breaking shapes into simpler parts – a key GCSE skill. - Links to ratio, algebra, and geometry questions. Properties of 3D Solids - Helps with recognising 3D shapes and nets, which appear in exams. - Builds understanding for surface area and volume topics. - Important for spatial reasoning questions. Surface Area - A key GCSE topic, especially for cuboids and compound solids. - Often appears in problem-solving and real-life contexts. - Links to nets and 3D shape understanding. Measures of Area and Volume - Builds fluency in unit conversions, a key exam skill. - Links multiple topics together (area, volume, and units). - Supports higher-level problem solving.	Beyond LHS Triangles, Parallelograms and Trapeziums - Used in construction to calculate floor space and materials. - Important in architecture when designing spaces. - Helps in jobs like land surveying and landscaping. Perimeter and Area of Compound Shapes - Used in building and DIY to work out materials needed. - Important in floor planning and interior design. - Used in engineering when designing parts with complex shapes. Properties of 3D Solids - Used in packaging design (e.g. boxes and containers). - Important in product design and manufacturing. - Helps in engineering and architecture when visualising structures. Surface Area - Used to calculate materials needed (e.g. paint, wrapping, covering). - Important in construction and decorating. - Used in manufacturing and packaging industries. Measures of Area and Volume - Essential in STEM careers (science, technology, engineering, maths). - Used in construction and engineering projects. - Important in healthcare and science labs when measuring accurately.



Spring Learning Journey for Maths

Year 7H Unit 9 Probability

How does this unit link to prior learning?

- **Know simple fraction to decimal equivalent**
Link to lesson 1 on comparing probabilities
- **Perform calculations with decimals**
Link to lesson 1 on calculating probabilities
- **Add fractions with common denominators**
Link to lesson 12 on probability trees
- **Multiply decimal numbers**
Link to lesson 12 on probability trees

Prior Knowledge Check

- 1) Give the decimal equivalent to the following:
a) $\frac{1}{2}$ b) $\frac{1}{4}$
- 2) What is $1 - 0.45$?
- 3) What is $\frac{2}{7} + \frac{3}{7}$?
- 4) Work out 0.24×100

What will you be learning about?

- Be able to calculate probability relating to independent and mutually exclusive events.
- Know the difference between theoretical and experimental probabilities.
- Use tree diagrams to calculate repeated events.

How does this link to the wider curriculum?

- The five British values are embedded in maths lessons through collaborative problem-solving, mutually respecting discussions of different methods, following classroom rules, making independent choices and appreciating diverse perspectives and contributions.

We will develop our learning each week by focusing on:

Lesson 1: Calculating probabilities 1 (GCSE Statistics) • Calculate and compare probabilities.	RAG	Lesson 2: Calculating probabilities 2 (GCSE Statistics) • Decide if a game is fair.	RAG
Lesson 3: Mutually exclusive events 2 (GCSE Statistics) • Identify mutually exclusive outcomes and events. • Find the probabilities of mutually exclusive outcomes and events.		Lesson 4: Mutually exclusive events 2 (GCSE Statistics) • Find the probabilities of mutually exclusive outcomes and events. • Find the probability of an event not happening.	
Lesson 5: Estimating Probability 1 • Calculate the relative frequency of a value. • Use relative frequency to make estimates.		Lesson 6: Estimating Probability 2 • Use relative frequency to estimate the probability of an event. • Use estimated probability to calculate expected frequencies.	

Lesson 7: Consolidation - Consolidation on all work covered so far on the topic. - Long periods of deliberate practice. - Should contain exam questions			Lesson 8: Experimental probability (GCSE Statistics) - Carry out a probability experiment. - Estimate probability using data from an experiment. - Work out the expected results when an experiment is repeated.			
Lesson 9: Sample space diagrams (GCSE Statistics) - List all the possible outcomes of one or two events in sample space diagrams. - Calculate probabilities of repeated events.			Lesson 10: Venn diagrams (GCSE Statistics) - List all the possible outcomes of one or two events in Venn diagrams. - Calculate probabilities of repeated events.			
Lesson 11: Venn diagrams 2 (GCSE Statistics) - List all the possible outcomes of one or two events in Venn diagrams. - Calculate probabilities of repeated events.			Lesson 12: Tree diagrams (GCSE Statistics) Use tree diagrams to find the probabilities of two or more events.			
Lesson 13: Revision - Select topics you feel the class need to revise. - Classroom based or Mathswatch.			Lesson 14: Assessment - Do 10-minute top up and go through answers together, students self-assess. - Open book assessment done in silence.			
Lesson 15: Feedback - Student to highlight their traffic light sheet. - Teacher to go through test and students to self-assess in green. - Students to complete the NOW section of the WOW-HOW-NOW sheet.						
Key vocabulary						
Impossible	Equivalent	Possible	Theoretical	Biased	Event	Decimal
Experiment	Fraction	Likely	Outcome	Likelihood	Frequency	Independent

How will this help you in the future?	
KS4 Builds core GCSE foundations by introducing key probability concepts and vocabulary early, making later topics more accessible. Develops reasoning skills through tasks like comparing probabilities and deciding fairness, supporting GCSE-style explanations. Strengthens use of diagrams (Venn, tree, sample space), helping pupils choose efficient methods in exams. Links theory to real-life data through experimental and estimated probability, improving interpretation skills. Improves exam readiness via consolidation, deliberate practice, and exposure to exam-style questions.	Beyond LHS - Supports everyday decision-making by helping pupils judge risk and likelihood (e.g. understanding chances in games, weather, or finance). - Builds critical thinking so students can question fairness, spot bias, and make informed choices in real-life situations. - Improves data interpretation skills through working with experiments and estimates, useful for interpreting statistics in the media. - Develops problem-solving skills using diagrams and structured methods, which transfer to many careers and real-world tasks. - Encourages logical thinking and prediction when analysing outcomes and patterns, supporting confident decision-making beyond school.