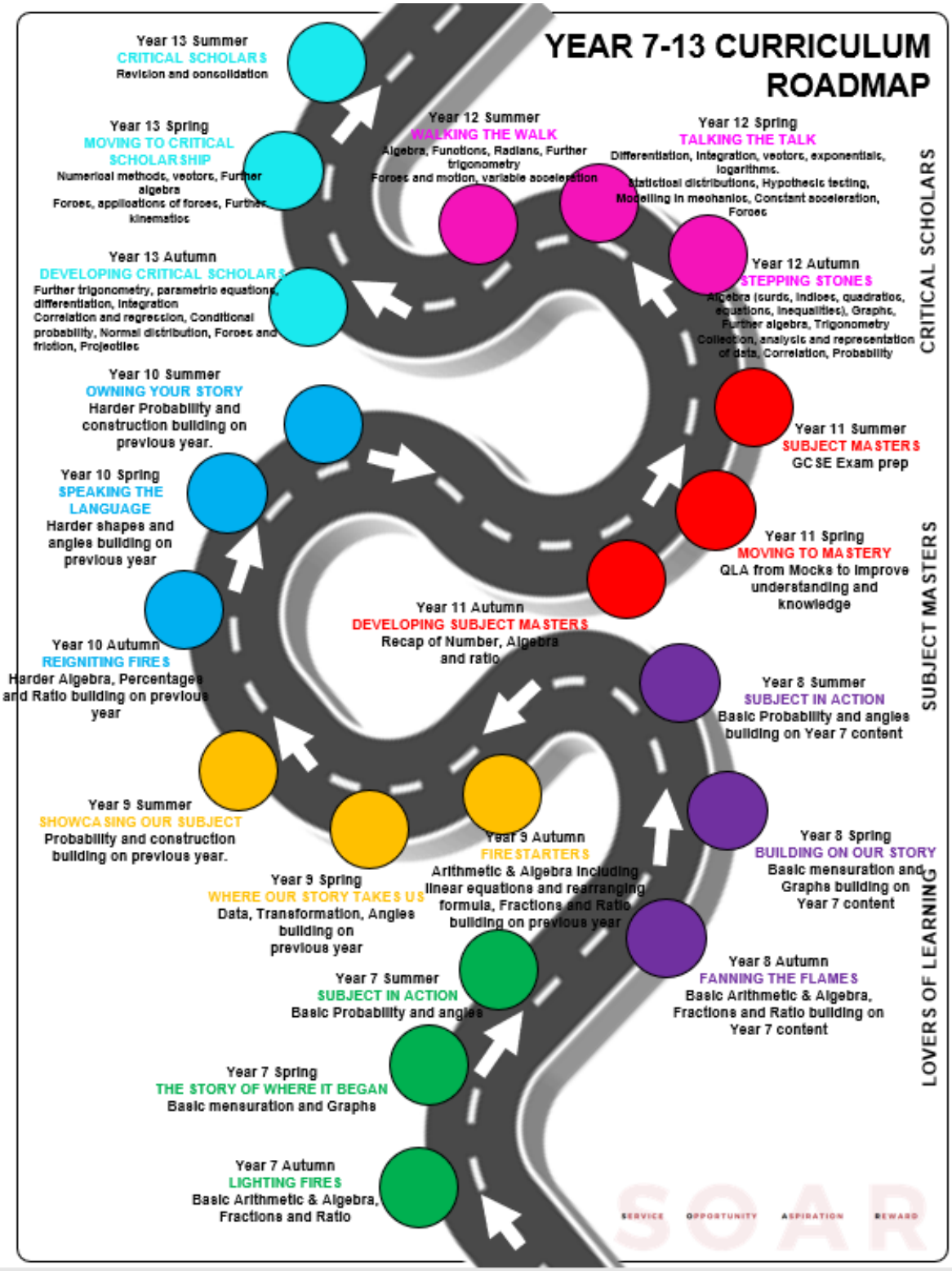
MATHS

Head of Department: Mr Jackson Okosun

SERVICE OPPORTUNITY ASPIRATION REWARD

SOAR

Maths Curriculum



SOAR
SERVICE OPPORTUNITY ASPIRATION REWARD

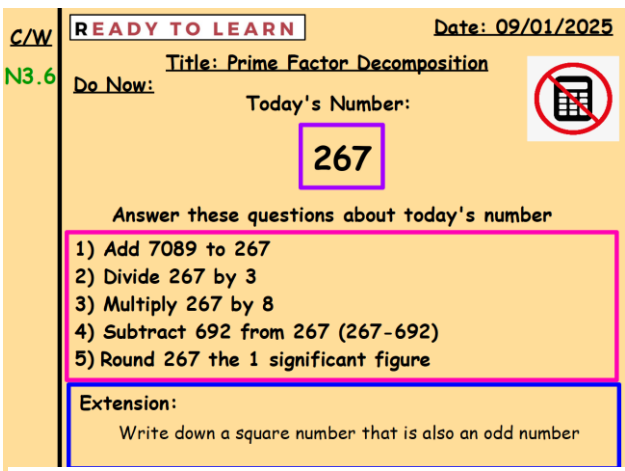
Curriculum Intent

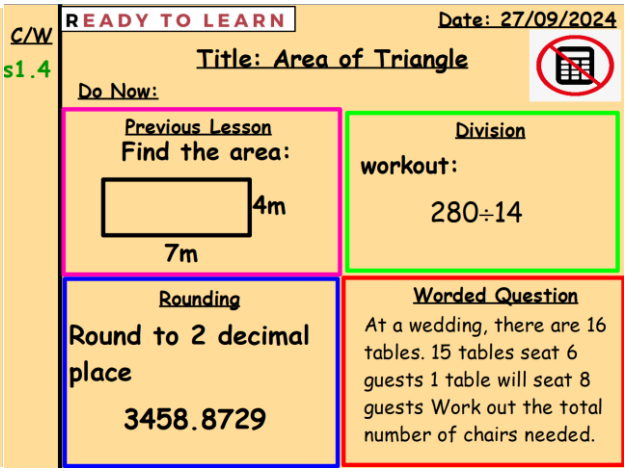
We **serve** our students with an adaptive curriculum that meets the needs of all. Our different subjects have carefully identified plans outlining, what they teach and why. This is shared with all students, staff and parents to empower our community in their learning journey and includes careful consideration of sequencing of knowledge and skills. Cardinal Pole is committed to providing **opportunities** for staff and students to become life-long lovers of learning through personalised feedback, opportunities for reflection and progression. We are a community of **aspirant** learners where teachers are experts and students are critical scholars. This is achieved through absolute clarity of expectations and constant re-evaluation of needs through a shared language. We **reward** our community of learners by celebrating the successes, progress and achievements of all.

How do all Maths lessons start? (Ready to Learn)

All lessons at Cardinal Pole start with a 'Ready to Learn' activity. The purpose of this is to support retrieval and prepares students for the lesson with recalling relevant knowledge. This activity is printed for students and handed out at the door. Students are expected to sit at their desk immediately and complete the task before sticking it in their books while the teacher welcomes the class and takes the register.

Ready to Learn activities in Maths look like this:





Reflections **DO NOW**

1) Expand $5a(b - 2c)$

2) Expand and simplify $2(x - 3) + x(3 - y)$

3) What is the order of rotational symmetry of:

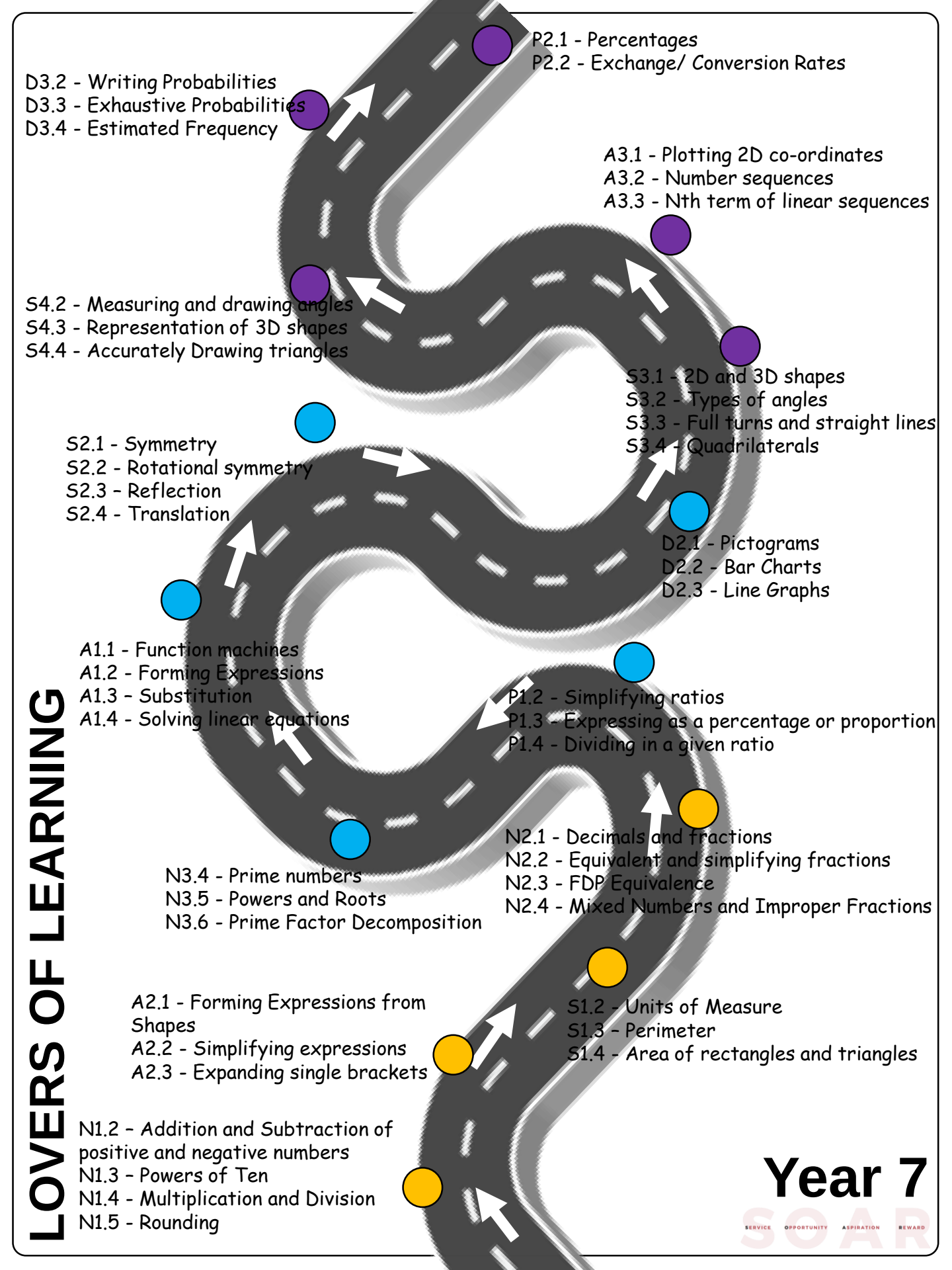
   a) a square?

   b) a rectangle?

   c) an equilateral triangle?

   d) an isosceles triangle?

LOVERS OF LEARNING



P2.1 - Percentages
P2.2 - Exchange/ Conversion Rates

D3.2 - Writing Probabilities
D3.3 - Exhaustive Probabilities
D3.4 - Estimated Frequency

A3.1 - Plotting 2D co-ordinates
A3.2 - Number sequences
A3.3 - Nth term of linear sequences

S4.2 - Measuring and drawing angles
S4.3 - Representation of 3D shapes
S4.4 - Accurately Drawing triangles

S3.1 - 2D and 3D shapes
S3.2 - Types of angles
S3.3 - Full turns and straight lines
S3.4 - Quadrilaterals

S2.1 - Symmetry
S2.2 - Rotational symmetry
S2.3 – Reflection
S2.4 - Translation

D2.1 - Pictograms
D2.2 - Bar Charts
D2.3 - Line Graphs

A1.1 - Function machines
A1.2 - Forming Expressions
A1.3 – Substitution
A1.4 - Solving linear equations

P1.2 - Simplifying ratios
P1.3 - Expressing as a percentage or proportion
P1.4 - Dividing in a given ratio

N3.4 - Prime numbers
N3.5 - Powers and Roots
N3.6 - Prime Factor Decomposition

N2.1 - Decimals and fractions
N2.2 - Equivalent and simplifying fractions
N2.3 - FDP Equivalence
N2.4 - Mixed Numbers and Improper Fractions

A2.1 - Forming Expressions from Shapes
A2.2 - Simplifying expressions
A2.3 - Expanding single brackets

S1.2 - Units of Measure
S1.3 – Perimeter
S1.4 - Area of rectangles and triangles

N1.2 – Addition and Subtraction of positive and negative numbers
N1.3 – Powers of Ten
N1.4 - Multiplication and Division
N1.5 - Rounding

Year 7

SERVICE OPPORTUNITY ASPIRATION REWARD

How is your progress measured in class in Maths in Autumn Term?

Autumn:	
Feedback Quiz	**In class:** End of unit Feedback quizzes every 2 weeks Data in tracker as: Red (1 to 4 marks) Amber (5 to 8 marks) Green (9 to 12 marks)

Emerging	Achieving	Excelling
• I can add and subtract positive and negative numbers • I can form algebraic expressions • I can measure lines and use measurements • I can change a decimal to a fraction • I can simplify ratio	• I can multiply and divide positive and negative numbers • I can simplify expressions • I can find the perimeter of shapes such as rectangles and triangles • I can simplify fractions and find equivalent fractions • I can write a number as a percentage of another	• I can use powers and round numbers • I can expand brackets • I can find area of shapes such as rectangles and triangles • I can convert between Fraction/Decimal and Percentages • I can divide ratio into a given quantity

Maths

Autumn Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N1.2	Addition / Subtraction Use the column method: line up your digits, start working from the right, carry or borrow as needed	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
N1.3	Multiply/Dividing by Powers of Ten Put your number into columns, for each power of ten move the digits one column to the left (or to the right if dividing)	
N1.4	Multiplication / Division Use the column method to multiply (and remember the place holders), use the bus stop method to divide	
N1.5	Rounding Look at the digit after the place you're rounding to — 5 or more, round up; 4 or less, round down	
A2.1	Forming Expressions Use algebra to show the problem. Letters are used when we have an unknown	
A2.2	Simplifying expressions Group like terms by matching letters. Always include the sign to the left of each term when simplifying.	
A2.3	Expanding brackets Multiply everything outside of the brackets with everything inside of the brackets	
S1.2	Units of measure Learn which units go with which types of measurement (e.g., litres for volume, grams for mass)	
S1.3	Perimeter Perimeter is the total distance around a shape. To find it we add all the side lengths	
S1.4	Area of rectangles: multiply the length by the width to find the area. Area of Triangles: multiply the base by the height, then divide by 2 to find the area.	

Maths

Autumn Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N2.1	Decimals and fractions Numbers **less than 1** can be written as **fractions** (like ½, ¾) or **decimals** (like 0.5, 0.75) — they represent the **same value**	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
N2.2	Equivalent and simplifying fractions Multiply or divide the top and bottom by the same number to find equivalents. To simplify, divide by the highest common factor (HCF) of both numbers.	
N2.3	FDP equivalence Know key facts like ½ = 0.5 = 50%, and build from there. To convert between forms: Decimal → %: multiply by 100 % → Fraction: write over 100 and simplify	
N2.4	Mixed numbers and improper fractions Mixed → Improper: Multiply the whole number by the denominator, then add the numerator. Improper → Mixed: Divide the numerator by the denominator.	
P1.2	Simplifying ratios Divide all parts of the ratio by the same number (the highest common factor). Make sure the final ratio is in simplest form, just like simplifying fractions.	
P1.3	Expressing as a percentage To turn part of a ratio into a percentage, do: (Part ÷ Total) × 100. To express it as a proportion, write it as a fraction of the whole (e.g. 2 out of 5 = 2/5).	
P1.4	Dividing into given ratio Add the parts of the ratio to get the total number of parts. Then divide the total amount by that number and multiply by each part.	
N2.1	Decimals and fractions Numbers **less than 1** can be written as **fractions** (like ½, ¾) or **decimals** (like 0.5, 0.75) — they represent the **same value**	

Maths

Autumn Term 2 Golden Nuggets and Work Hard

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Maths

Autumn Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
P1.3	Expressing as a percentage To turn part of a ratio into a percentage, do: (Part ÷ Total) × 100. To express it as a proportion, write it as a fraction of the whole (e.g. 2 out of 5 = 2/5).	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
P1.4	Dividing into given ratio Add the parts of the ratio to get the total number of parts. Then divide the total amount by that number and multiply by each part.	

How is your progress measured in class in Maths in **Spring** Term?

Spring:	
Feedback Quiz	**In class:** End of unit Feedback quizzes every 2 weeks Data in tracker as: Red (1 to 4 marks) Amber (5 to 8 marks) Green (9 to 12 marks)

Emerging	**Achieving**	**Excelling**
• I can identify prime numbers • I can use function machines • I can identify lines of symmetry • I can represent data on pictograms • I can identify 2D and 3D shapes	• I can calculate using powers and roots • I can form expressions and substitute into expressions • I can find rotational symmetry • I can represent data on bar charts • I can identify types of angles and quadrilaterals	• I can find the product of prime factors • I can solve linear equations • I can reflect and translate shapes • I can represent data on line graphs • I can find missing angles in a full turn and on straight lines

Maths

Spring Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N3.4	Prime numbers A prime has exactly 2 factors: 1 and itself. Learn the first few: 2, 3, 5, 7, 11, 13, 17... (Remember: 2 is the only even prime!)	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
N3.5	Powers and roots Power (exponent): multiply a number by itself repeatedly (e.g. 3^4 = 3×3×3×3) Root: opposite of a power (e.g. √25 = 5) Use square and cube roots often in reverse operations.	
N3.6	Prime factor decomposition Break the number down into prime factors using a factor tree. e.g. 60 = 2 × 2 × 3 × 5	
A1.1	Function machines Follow each step in the correct order — like a recipe! To reverse a function machine, do the opposite operation in the opposite order. Use the inverse operations to work backwards.	
A1.2	Forming expressions Turn word problems into algebra by replacing known values with variables. Use +, –, ×, ÷ to build expressions. Look out for keywords like "double," "difference," or "total."	
A1.3	Substitution Replace each letter with the number it stands for — brackets help! Follow BIDMAS (order of operations) when calculating. Double-check signs with negative numbers.	
A1.4	Solving linear equations Use inverse operations to undo what's being done to the variable. Keep the equation balanced by doing the same thing to both sides. Start with the term furthest from the variable.	
S2.1	Symmetry A shape has line symmetry if it can be folded in half with both sides matching. Count how many mirror lines there are — horizontal, vertical, or diagonal.	

Maths

Spring Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
S2.2	Rotational symmetry Rotate the shape around its centre — how many times does it look the same in one full turn (360°)? The number of times = the order of rotational symmetry.	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
S2.3	Reflection Flip the shape across the mirror line. Each point stays the same distance from the line — just on the opposite side.	
S2.4	Translation Slide the shape without turning or flipping it. Use a column vector (with x above y) where x = left/right and y = up/down	

Maths

Spring Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
D2.1	Pictograms Use pictures to represent data — each symbol = a key value. Check the key carefully, especially when symbols represent half units.	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
D2.2	Bar charts Each bar's height = frequency. Keep equal bar widths and spaces, and label both axes clearly.	
D2.3	Line graphs Used to show change over time or trends. Plot points carefully and join with straight lines — not curves!	
S3.1	2d and 3d shapes 2D: flat shapes like squares, triangles, circles 3D: solid shapes like cubes, spheres, cylinders Know names, properties (faces, edges, vertices), and nets.	
S3.2	Types of angles Acute: < 90° Right angle: = 90° Obtuse: > 90° but < 180° Reflex: >180° but <360°	
D2.1	Pictograms Use pictures to represent data — each symbol = a key value. Check the key carefully, especially when symbols represent half units.	
S3.3.	Full turns and straight lines Straight line: angles add to 180° Full turn: 360° Use this to solve missing angle problems.	
S3.4	Quadrilaterals Know the properties of each: Square, rectangle, rhombus, trapezium, kite, parallelogram Look at sides (equal/parallel), angles (right/opposite), and symmetry.	
A3.1	Plotting 2d co-ordinates Use (x, y) format. Go across (x) then up/down (y). Always label your axes and scale clearly.	

Maths

Spring Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
A3.2	Number sequences Look for the pattern or rule — often add, subtract, multiply, or divide. Check if it's linear (constant difference) or non-linear (changing pattern)	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
a3.3	Nth term Use: nth term=difference×n+0th term Check your rule by substituting values of n=1,2,3...	

How is your progress measured in class in Maths in **Summer** Term?

Summer:	
Feedback Quiz	**In class:** End of unit Feedback quizzes every 2 weeks Data in tracker as: Red (1 to 4 marks) Amber (5 to 8 marks) Green (9 to 12 marks)

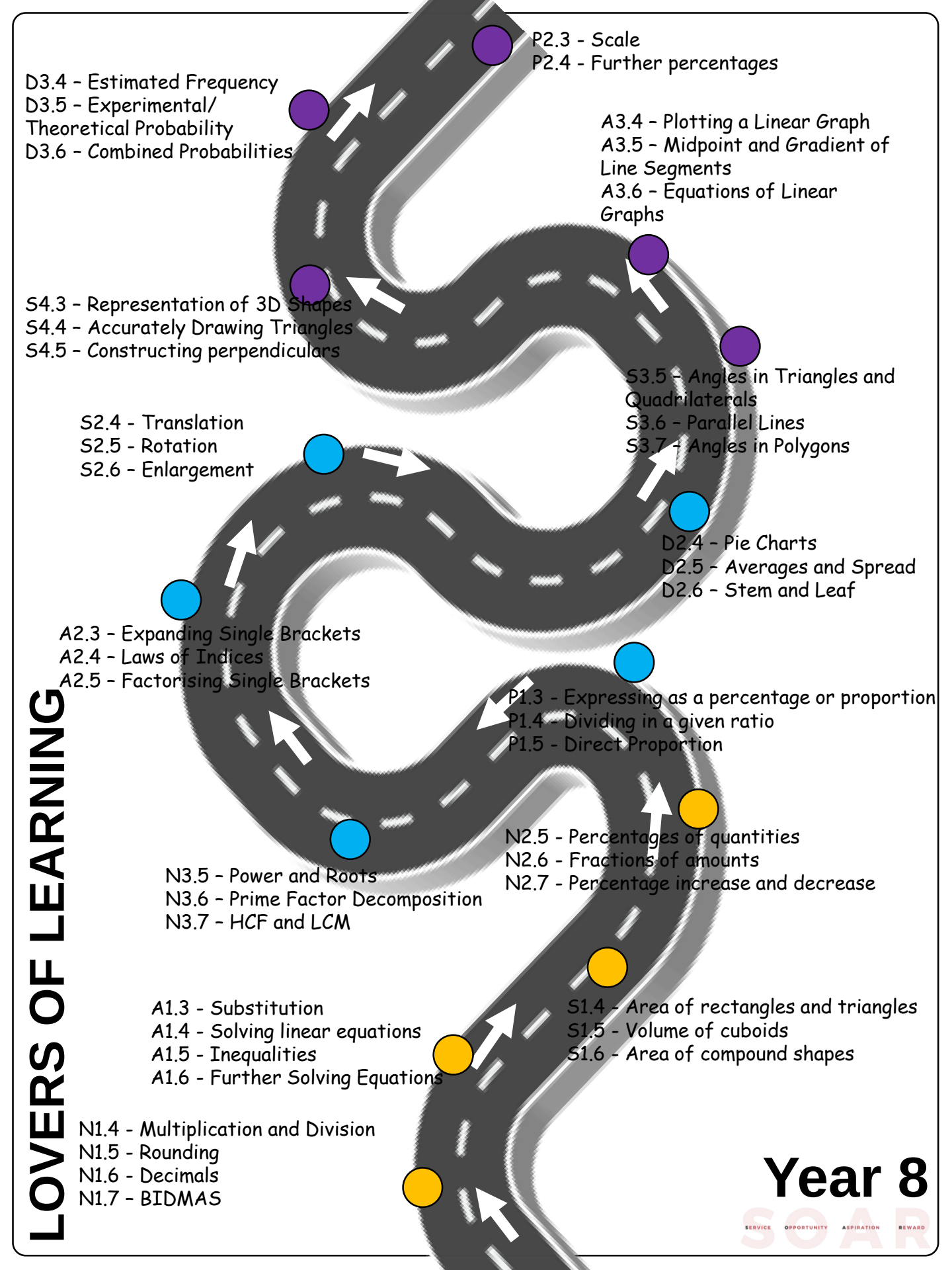
Emerging	Achieving	Excelling
• I can measure and draw angles • I can find probability of an outcome • I can use my knowledge of what percent means	• I can sketch 3D shapes and find their nets • I can find the probability of an event. • I can convert currency using exchange rates	• I can accurately draw triangles • I can find the estimated frequency of an event • I can convert currency using exchange rates

Maths

Summer Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
S4.2	Measuring and drawing angles Use a protractor: Line up the base, read from the correct scale (inside/outside) Label your angle and draw neatly	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
S4.3	Representation of 3d shapes Focus on **what makes each shape special** — like flat or curved surfaces, identical faces, or pointed tops. Draw these accurately using measurements provided	
S4.4	Accurately drawing triangles Use a ruler and protractor or compasses. Follow given lengths and angles carefully. Check triangle types: SAS, ASA, SSS.	
D3.2	Writing probabilities Write as a fraction, decimal, or percentage. Use: Probability=favourable outcomes/total Make sure your values are between 0 and 1.	
D3.3	Exhaustive probabilities All possible outcomes together = 1. If events are exhaustive, their probabilities must add to 1.	
D3.4	Estimated frequency Estimated Frequency=Probability×Number of trials Use this to predict outcomes based on probability and frequency.	
P2.1	Percentages Find a percentage by: Percentage=Part/Whole×100% Use multipliers for increase /decrease (e.g. ×1.2 for +20%)	
P2.2	Exchange/conversion rates Use the rate as a multiplier: To convert: multiply the home currency by the rate To go back: divide the foreign currency by the rate	

LOVERS OF LEARNING



P2.3 - Scale
P2.4 - Further percentages

D3.4 – Estimated Frequency
D3.5 – Experimental/ Theoretical Probability
D3.6 – Combined Probabilities

A3.4 – Plotting a Linear Graph
A3.5 – Midpoint and Gradient of Line Segments
A3.6 – Equations of Linear Graphs

S4.3 – Representation of 3D Shapes
S4.4 – Accurately Drawing Triangles
S4.5 – Constructing perpendiculars

S3.5 – Angles in Triangles and Quadrilaterals
S3.6 – Parallel Lines
S3.7 – Angles in Polygons

S2.4 - Translation
S2.5 - Rotation
S2.6 – Enlargement

D2.4 – Pie Charts
D2.5 – Averages and Spread
D2.6 – Stem and Leaf

A2.3 – Expanding Single Brackets
A2.4 – Laws of Indices
A2.5 – Factorising Single Brackets

P1.3 - Expressing as a percentage or proportion
P1.4 – Dividing in a given ratio
P1.5 - Direct Proportion

N2.5 - Percentages of quantities
N2.6 - Fractions of amounts
N2.7 - Percentage increase and decrease

N3.5 – Power and Roots
N3.6 – Prime Factor Decomposition
N3.7 – HCF and LCM

A1.3 - Substitution
A1.4 - Solving linear equations
A1.5 - Inequalities
A1.6 - Further Solving Equations

S1.4 - Area of rectangles and triangles
S1.5 - Volume of cuboids
S1.6 - Area of compound shapes

N1.4 - Multiplication and Division
N1.5 - Rounding
N1.6 - Decimals
N1.7 – BIDMAS

Year 8

SOAR
SERVICE OPPORTUNITY ASPIRATION REWARD

How is your progress measured in class in Maths in **Autumn** Term?

Autumn:	
Feedback Quiz	**In class:** End of unit Feedback quizzes every 2 weeks Data in tracker as: Red (1 to 4 marks) Amber (5 to 8 marks) Green (9 to 12 marks)

Emerging	Achieving	Excelling
• I can multiply and divide positive and negative numbers	• I can use powers, round numbers and use BIDMAS	• I can do the 4 operations with decimals
• I can substitute into expressions	• I can solve linear equations	• I can solve and represent inequalities
• I can find area of shapes such as rectangles and triangles	• I can find the volume of cuboids	• I can find the area of compound shapes
• I can find percentage of a quantity	• I can find fraction of an amount	• I can find the percentage increase and decrease of a number
• I can express a number as a percentage of another	• I can divide ratio into a given quantity	• I can use direct proportion to help with recipes

Maths

Autumn Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N1.4	Multiplication / Division Use the column method to multiply (and remember the place holders), use the bus stop method to divide	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
N1.5	Rounding Look at the digit after the place you're rounding to — 5 or more, round up; 4 or less, round down	
N1.6	Decimals Line up decimal points before doing any calculation. Fill empty spaces with zeros if needed. When multiplying or dividing, ignore the decimal at first — then count how many decimal places are needed in the final answer.	
N1.7	BIDMAS Follow the order: Brackets → Indices → Divide/Multiply → Add/Subtract. Always work from left to right for operations at the same level. Use brackets to show or change the order clearly.	
S1.4	**Area of Rectangles:** Multiply the length by the width to find the area. **Area of Triangles:** Multiply the base by the height, then divide by 2 to find the area.	
S1.5	Volume of cuboids Use Volume = length × width × height. Think of volume as counting how many unit cubes fill the space. Always include the correct unit (e.g., cm^3 or m^3).	
S1.6	Area of compound shapes Split the shape into rectangles or triangles. Work out each part's area and add them together. If there's a missing side, use what you know to figure it out.	
A1.3	Substitution Replace each letter with the number it stands for — brackets help! Follow BIDMAS (order of operations) when calculating. Double-check signs with negative numbers.	

Maths

Autumn Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
A1.4	Solving linear equations Use inverse operations to undo what's being done to the variable. Keep the equation balanced by doing the same thing to both sides. Start with the term furthest from the variable.	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
A1.5	Inequalities Solve like normal equations, but remember to flip the inequality sign if you multiply or divide by a negative! Draw number lines to show your answer clearly.	
A1.6	Further solving equations Tidy up both sides first (expand brackets and simplify). Then use your normal solving method. Watch out for variables on both sides — get them on the same side first!	

Maths

Autumn Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N2.5	Percentages of quantities Use 10%, 5%, 1% methods for non-calculator For calculator: multiply by the percentage as a decimal (e.g. 35% of 80 = 0.35 × 80)	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
N2.6	Fractions of amounts Divide the number by the bottom (denominator), then multiply by the top (numerator). E.g. ⅔ of 60 → 60 ÷ 3 = 20 → 20 × 2 = 40	
N2.7	Percentage increase and decrease Increase: Add the % to 100 and multiply Decrease: Subtract the % from 100 and multiply e.g. 20% increase = 1.20 × amount	
P1.3	Expressing as a percentage To turn part of a ratio into a percentage, do: (Part ÷ Total) × 100. To express it as a proportion, write it as a fraction of the whole (e.g. 2 out of 5 = 2/5).	
P1.4	Dividing into a given ratio Add the parts of the ratio to get the total number of parts. Then divide the total amount by that number, and multiply by each part. e.g. Split £60 in a 2:3 ratio → 2+3=5 parts → £60 ÷ 5 = £12 → 2×12 and 3×12.	
P1.5	Direct proportion Set up a proportion table or use scaling. If one value doubles, the other does too. Use unitary method: find the value for 1, then multiply to get what you need.	

How is your progress measured in class in Maths in **Spring** Term?

Spring:	
Feedback Quiz	**In class:** End of unit Feedback quizzes every 2 weeks Data in tracker as: Red (1 to 4 marks) Amber (5 to 8 marks) Green (9 to 12 marks)

Emerging	**Achieving**	**Excelling**
• I can calculate using powers and roots • I can expand brackets • I can translate a shape • I can represent data on pie charts • I can find the angles in a triangle and quadrilateral	• I can find the product of prime factors • I can use the laws of indices • I can rotate a shape • I can find the averages of a set of data • I can find the missing angles in parallel lines	• I can find the HCF and LCM • I can factorise brackets • I can enlarge shapes • I can represent data on stem and leaf • I can find missing angles in a polygon

Maths

Spring Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N3.5	Powers and roots Power (exponent): multiply a number by itself repeatedly (e.g. 3^4 = 3×3×3×3 Root: opposite of a power (e.g. √25 = 5) Use square and cube roots often in reverse operations.	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
N3.6	Prime factor decomposition Break the number down into prime factors using a factor tree. E.g. 60 = 2 × 2 × 3 × 5 = 2^2 × 3 x 5	
N3.7	HCF and LCM HCF (Highest Common Factor) = the biggest number that goes into both numbers LCM (Lowest Common Multiple) = the smallest number they both appear in when you list their times tables Use lists or a Venn diagram with prime factors to help you!	
A2.3	Expanding single brackets Multiply everything inside the bracket by the term outside. e.g. 3(x+4)=3x+12	
A2.4	Laws of indices Multiply → add powers Divide → subtract powers Brackets → multiply powers Negative → flip (e.g. a^−1=1/a) Zero power = 1	
A2.5	Factorising single brackets Take out the highest common factor (HCF) of all terms. e.g. 6x+9 = 3(2x+3)	
S2.4	Translation Slide the shape without turning or flipping it. Use a column vector (with x above y) where x = left/right and y = up/down	

Maths

Spring Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
S2.5	Rotation Turn the shape around a centre of rotation by a certain angle and direction (usually clockwise or anti-clockwise). Use tracing paper to help!	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
S2.6	Enlargement Multiply all distances from the centre of enlargement by the scale factor. Scale factor > 1 = bigger Between 0 and 1 = smaller	

Maths

Spring Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
D2.4	Pie charts The whole circle = 360°. Convert data to angles using: Angle=Frequency/Total×360° Use a protractor!	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
D2.5	Averages and spread Mean: total ÷ number Median: middle value Mode: most frequent Range: difference between biggest and smallest Use for comparing data sets.	
D2.6	Stem and leaf Split numbers (e.g. 36 → 3 | 6). Keep them in order, include a key	
S3.5	Angles in triangles and quadrilaterals Triangle: angles add to 180° Quadrilateral: angles add to 360° Isosceles triangles: 2 equal sides = 2 equal angles	
S3.6	Parallel lines Use special angle rules: Corresponding: F-shape → equal Alternate: Z-shape → equal Co-interior: C-shape → add to 180° Label and match positions carefully.	
S3.7	Angles in polygons Interior angles: (n−2)×180° Exterior angles: always add to 360° Regular polygons = all sides / angles equal	
A3.4	Plotting linear graphs Use the equation y=mx+c M=gradient (steepness) C= y-intercept (where line crosses y-axis) Make a table of values, plot points, and draw a straight line.	

Maths

Spring Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
A3.5	Midpoint and gradient Midpoint: average the x-values and y-values (x1+x2/y1+y2) Gradient: rise/run=y2−y1/x2−x1	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
A3.6	Equations of linear graphs Use y=mx+c Find the gradient (m) and the y-intercept (c) by checking where the line crosses the axes or using two points.	

How is your progress measured in class in Maths in Summer Term?

Summer:	
Feedback Quiz	**In class:** End of unit Feedback quizzes every 2 weeks Data in tracker as: Red (1 to 4 marks) Amber (5 to 8 marks) Green (9 to 12 marks)

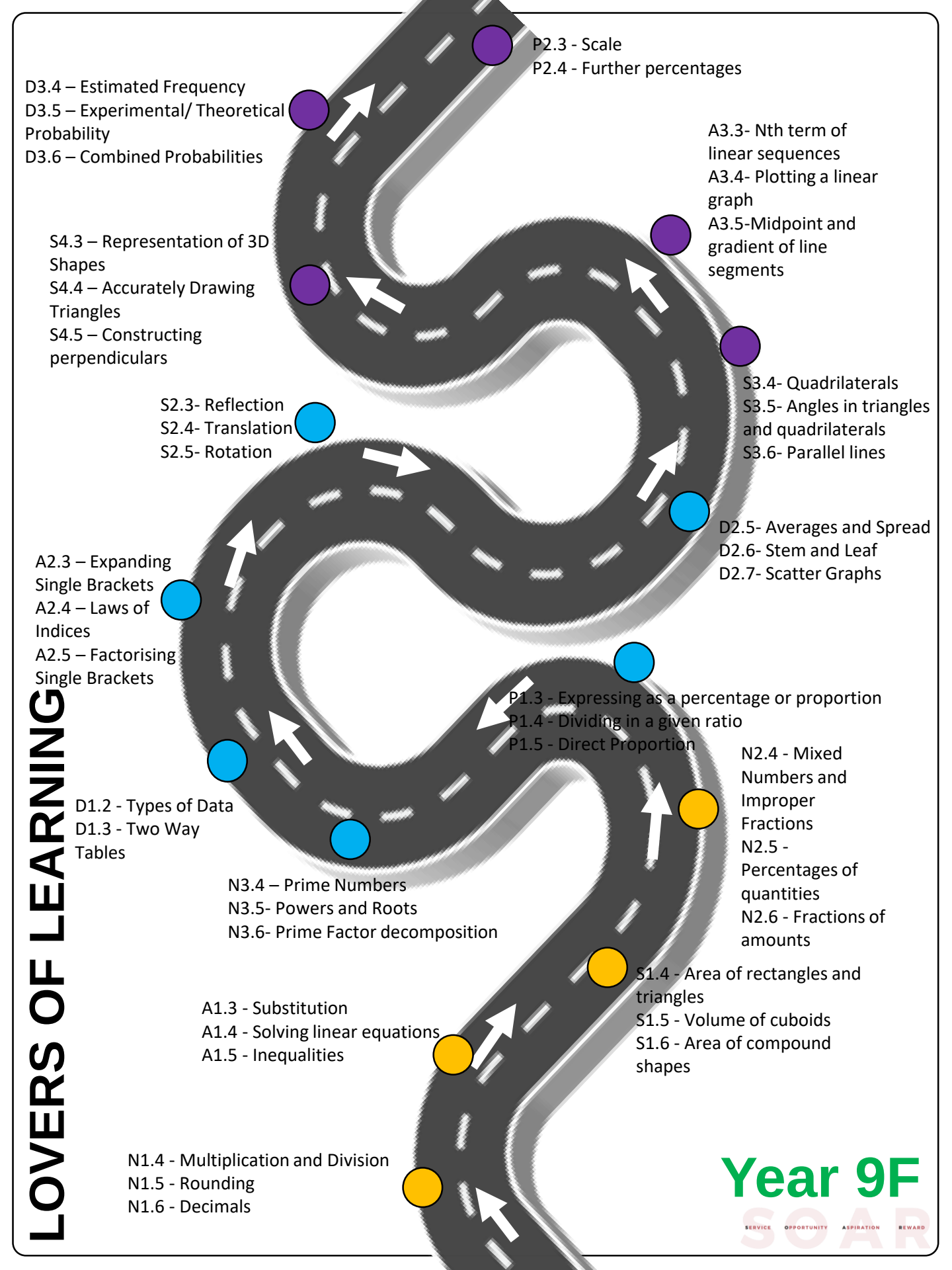
Emerging	Achieving	Excelling
• I can sketch 3D shapes and find their nets • I can find the estimated frequency of an event • I can find the scale factor	• I can accurately draw triangles • I can find the experimental probability of an event • I can write a number as a percentage of another	• I can accurately construct perpendicular bisectors • I can find the combined probability of events • I can find the percentage increase and decrease

Maths

Summer Term Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
S4.3	Representation of 3d shapes Focus on **what makes each shape special** — like flat or curved surfaces, identical faces, or pointed tops. Draw these accurately using measurements provided	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online homework is set via the Dr Frost Maths platform, providing interactive practice and instant feedback. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
S4.4	Accurately drawing triangles Use a ruler and protractor or compasses. Follow given lengths and angles carefully. Check triangle types: SAS, ASA, SSS.	
S4.5	Constructing perpendiculars Use a compass and straightedge: From a point on/above a line Draw arcs and connect intersections Don't use protractors for this — it must be a construction.	
D3.4	Estimated frequency Estimated Frequency =**Probability × Number of trials** Use this to predict outcomes based on probability and frequency.	
D3.5	Experimental/theoretical probability Theoretical: what should happen Experimental: what did happen Compare both. More trials = experimental gets closer to theoretical.	
D3.6	Combined probabilities AND (both happen): multiply P(A and B) =P(A) x P(B) OR (either happen): add If events can't happen together (mutually exclusive): P(A or B)=P(A)+P(B)	
P2.3	Scale Scale: real vs drawing size. Use ratios to scale up or down. E.g. 1:50 → 1cm = 50cm in real life Keep units consistent!	
P2.4	Further percentages Successive changes (use chained multipliers) Percentage change: difference/original×100%	

LOVERS OF LEARNING



P2.3 - Scale
P2.4 - Further percentages

D3.4 – Estimated Frequency
D3.5 – Experimental/ Theoretical Probability
D3.6 – Combined Probabilities

A3.3- Nth term of linear sequences
A3.4- Plotting a linear graph
A3.5-Midpoint and gradient of line segments

S4.3 – Representation of 3D Shapes
S4.4 – Accurately Drawing Triangles
S4.5 – Constructing perpendiculars

S3.4- Quadrilaterals
S3.5- Angles in triangles and quadrilaterals
S3.6- Parallel lines

S2.3- Reflection
S2.4- Translation
S2.5- Rotation

D2.5- Averages and Spread
D2.6- Stem and Leaf
D2.7- Scatter Graphs

A2.3 – Expanding Single Brackets
A2.4 – Laws of Indices
A2.5 – Factorising Single Brackets

P1.3 - Expressing as a percentage or proportion
P1.4 - Dividing in a given ratio
P1.5 - Direct Proportion

D1.2 - Types of Data
D1.3 - Two Way Tables

N2.4 - Mixed Numbers and Improper Fractions
N2.5 - Percentages of quantities
N2.6 - Fractions of amounts

N3.4 – Prime Numbers
N3.5- Powers and Roots
N3.6- Prime Factor decomposition

S1.4 - Area of rectangles and triangles
S1.5 - Volume of cuboids
S1.6 - Area of compound shapes

A1.3 - Substitution
A1.4 - Solving linear equations
A1.5 - Inequalities

N1.4 - Multiplication and Division
N1.5 - Rounding
N1.6 - Decimals

Year 9F

SOAR
SERVICE OPPORTUNITY ASPIRATION REWARD

How is your progress measured in class in Maths in Autumn Term?

Autumn:	
Feedback Quiz	**In class:** End of unit Feedback quizzes every 2 weeks Data in tracker as: Red (1 to 4 marks) Amber (5 to 8 marks) Green (9 to 12 marks)

Emerging	Achieving	Excelling
• I can multiply and divide positive and negative numbers • I can substitute into expressions • I can find area of shapes such as rectangles and triangles • I can find percentage of a quantity • I can input data into a two way table • I can express a number as a percentage of another	• I can round numbers • I can solve linear equations • I can find the volume of cuboids • I can find fraction of an amount • I can divide ratio into a given quantity	• I can do the 4 operations with decimals • I can solve and represent inequalities • I can find the area of compound shapes • I can find the percentage increase and decrease of a number • I can use direct proportion to help with recipes

Maths

Autumn Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N1.4	Multiplication and Division Use the column method to multiply (and remember the place holders), use the bus stop method to divide.	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online home learning is set twice per week from booklets which are given out each half term and these are then marked in class. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
N1.5	Rounding Look at the digit after the place you're rounding to — 5 or more, round up; 4 or less, round down.	
N1.6	Decimals Line up decimal points before doing any calculation. Fill empty spaces with zeros if needed. When multiplying or dividing, ignore the decimal at first — then count how many decimal places are needed in the final answer.	
S1.4	Area of Rectangles and Triangles For rectangles, use Area = length × width. For triangles, use Area = ½ × base × height. Make sure the height is at a right angle to the base.	
S1.5	Volume of Cuboids Use Volume = length × width × height. Think of volume as counting how many unit cubes fill the space. Always include the correct unit (e.g., cm^3 or m^3).	
S1.6	Area of Compound Shapes Split the shape into rectangles or triangles. Work out each part's area and add them together. If there's a missing side, use what you know to figure it out.	
A1.3	Substitution Replace each letter with the number it stands for — brackets help! Follow BIDMAS (order of operations) when calculating. Double-check signs with negative numbers.	
A1.4	Solving Linear Equations Use inverse operations to undo what's being done to the variable. Keep the equation balanced by doing the same thing to both sides. Start with the term furthest from the variable.	
A1.5	Inequalities Solve like normal equations, but remember to flip the inequality sign if you multiply or divide by a negative! Draw number lines to show your answer clearly.	

Maths

Autumn Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N2.4	Mixed Numbers and Improper Fractions Mixed → Improper: Multiply the whole number by the denominator, then add the numerator. Improper → Mixed: Divide the numerator by the denominator.	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online home learning is set twice per week from booklets which are given out each half term and these are then marked in class. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
N2.5	Percentages of Quantities Use 10%, 5%, 1% methods for non-calculator For calculator: multiply by the percentage as a decimal (e.g. 35% of 80 = 0.35 × 80)	
N2.6	Fractions of Amounts Divide the number by the bottom (denominator), then multiply by the top (numerator). E.g. ⅗ of 60 → 60 ÷ 3 = 20 → 20 × 2 = 40	
P1.3	Expressing as a Percentage or Proportion To turn part of a ratio into a percentage, do: (Part ÷ Total) × 100. To express it as a proportion, write it as a fraction of the whole (e.g. 2 out of 5 = 2/5).	
P1.4	Dividing in a Given Ratio Add the parts of the ratio to get the total number of parts. Then divide the total amount by that number, and multiply by each part. E.g. Split £60 in a 2:3 ratio → 2+3=5 parts → £60 ÷ 5 = £12 → 2 × 12 and 3 × 12.	
P1.5	Direct Proportion Set up a proportion table or use scaling. If one value doubles, the other does too. Use unitary method: find the value for 1, then multiply to get what you need.	
D1.2	Types of Data Quantitative: Numbers (e.g. height, weight) Discrete: Countable (e.g. goals scored) Continuous: Measured (e.g. time) Qualitative: Descriptive (e.g. eye colour) Use the correct type for the right chart!	
D1.3	Two Way Tables Fill in the table carefully row by row or column by column. Always check row and column totals. Useful for comparing two variables at once.	

How is your progress measured in class in Maths in Spring Term?

Spring:	
Feedback Quiz	**In class:** End of unit Feedback quizzes every 2 weeks Data in tracker as: Red (1 to 4 marks) Amber (5 to 8 marks) Green (9 to 12 marks)

Emerging	Achieving	Excelling
• I can calculate using powers and roots • I can find the nth term of a sequence • I can expand brackets • I can translate a shape • I can represent data on pie charts • I can find the angles in a triangle and quadrilateral	• I can find the product of prime factors • I can use the laws of indices • I can rotate a shape • I can find the averages of a set of data • I can find the missing angles in parallel lines	• I can find the HCF and LCM • I can factorise brackets • I can draw a linear graph • I can enlarge shapes • I can represent data on stem and leaf • I can find the midpoint and gradient of a line

Maths

Spring Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N3.4	Prime Numbers A prime has exactly 2 factors: 1 and itself. Learn the first few: 2, 3, 5, 7, 11, 13, 17... (Remember: 2 is the only even prime!)	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online home learning is set twice per week from booklets which are given out each half term and these are then marked in class. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
N3.5	Powers and Roots Power (exponent): multiply a number by itself repeatedly (e.g. 3^4 = 3×3×3×3 Root: opposite of a power (e.g. √25 = 5) Use square and cube roots often in reverse operations.	
N3.6	Prime Factor Decomposition Break the number down into prime factors using a factor tree. E.g. 60 = 2 × 2 × 3 × 5	
A2.3	Expanding single brackets Multiply everything inside the bracket by the term outside. E.g. 3(x+4)=3x+12	
A2.4	Laws of Indices Learn the core rules: Multiply → add powers Divide → subtract powers Brackets → multiply powers Negative → flip (e.g. a^−1=1/a)	
A2.5	Factorising single brackets Take out the highest common factor (HCF) of all terms. E.g. 6x+9=3(2x+3)	
S2.3	Reflection Flip the shape across the mirror line. Each point stays the same distance from the line — just on the opposite side.	
S2.4	Translation Slide the shape without turning or flipping it. Use a column vector (with x above y) where x = left/right and y = up/down	
S2.5	Rotation Turn the shape around a centre of rotation by a certain angle and direction (usually clockwise or anti-clockwise). Use tracing paper to help!	

Maths

Spring Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
D2.5	Averages and spread Mean: total ÷ number Median: middle value Mode: most frequent Range: difference between biggest and smallest Use for comparing data sets.	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online home learning is set twice per week from booklets which are given out each half term and these are then marked in class. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
D2.6	Stem and leaf Split numbers (e.g. 36 → 3 | 6). Keep them in order, include a key, and remember: they show actual values, not grouped data.	
D2.7	Scatter graph Plot coordinate pairs, then look for correlation: Positive, negative, or no correlation. Draw a line of best fit if needed — goes through the "middle" of points.	
S3.4	Quadrilaterals Triangle: angles add to 180° Quadrilateral: angles add to 360° Isosceles triangles: 2 equal sides = 2 equal angles	
S3.5	Angles in triangles and quadrilaterals Triangle: angles add to 180° Quadrilateral: angles add to 360° Isosceles triangles: 2 equal sides = 2 equal angles	
S3.6	Parallel lines Use special angle rules: Corresponding: same position → equal Alternate: Z-shape → equal Co-interior: C-shape → add to 180° Label and match positions carefully.	
A3.3	Nth term of linear sequence Use: nth term=difference×n+0th term Check your rule by substituting values of n=1,2,3...n = 1, 2, 3...n=1,2,3...	
A3.4	Plotting a linear graph Use the equation y=mx+c m gradient (steepness) c= y-intercept (where line crosses y-axis) Make a table of values, plot points, and draw a straight line.	

Maths

Spring Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
A3.5	Midpoint and gradient of line segments Midpoint: average the x-values and y-values (x1+x2/y1+y2) Gradient: rise/run=y2−y1/x2−x1	

How is your progress measured in class in Maths in Summer Term?

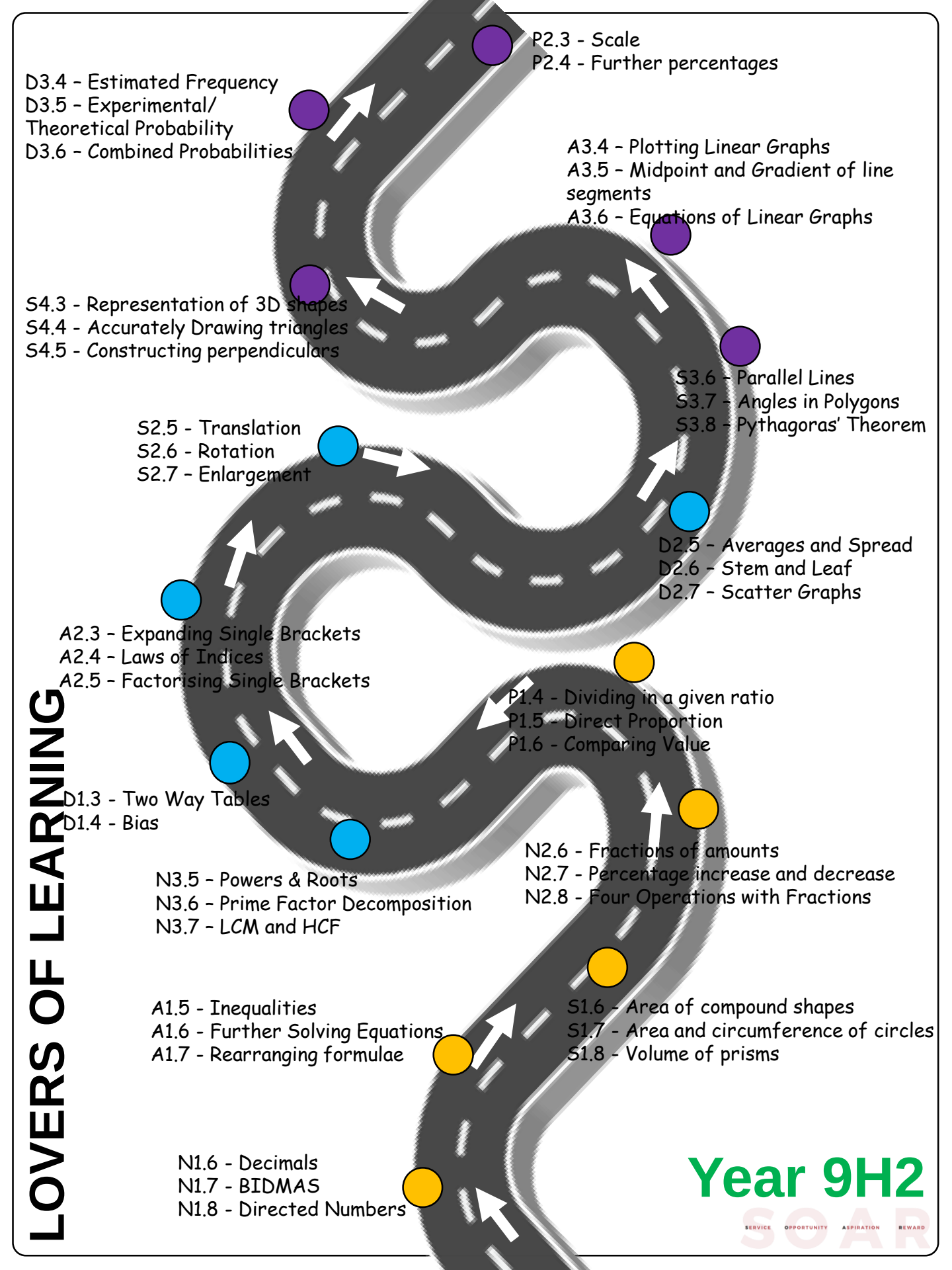
Summer:	
Feedback Quiz	**In class:** End of unit Feedback quizzes every 2 weeks Data in tracker as: Red (1 to 4 marks) Amber (5 to 8 marks) Green (9 to 12 marks)

Emerging	Achieving	Excelling
• I can sketch 3D shapes and find their nets • I can find the estimated frequency of an event • I can find the scale factor	• I can accurately draw triangles • I can find the experimental probability of an event • I can write a number as a percentage of another	• I can accurately construct perpendicular bisectors • I can find the combined probability of events • I can find the percentage increase and decrease

Maths

Summer Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
S4.3	Representation of 3D shapes Focus on what makes each shape special — like flat or curved surfaces, identical faces, or pointed tops. Draw these accurately using measurements provided	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online home learning is set twice per week from booklets which are given out each half term and these are then marked in class. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
S4.4	Accurately drawing triangles Use a ruler and protractor or compasses. Follow given lengths and angles carefully. Check triangle types: SAS, ASA, SSS.	
S4.5	Constructing perpendiculars Use a compass and straightedge: From a point on/above a line Draw arcs and connect intersections Don't use protractors for this — it must be a construction.	
D3.3	Exhaustive probabilites All possible outcomes together = 1. If events are exhaustive, their probabilities must add to 1.	
D3.4	Estimated frequency Estimated Frequency=Probability×Number of trials Use this to predict outcomes based on probability and frequency.	
D3.5	Experimental probability Theoretical: what should happen Experimental: what did happen Compare both. More trials = experimental gets closer to theoretical.	
P2.3	Scale Scale: real vs drawing size. Use ratios to scale up or down. E.g. 1:50 → 1cm = 50cm in real life Keep units consistent!	
P2.4	Further percentages Successive changes (use chained multipliers) Percentage change: difference/original×100%	


LOVERS OF LEARNING
P2.3 - Scale
P2.4 - Further percentages
D3.4 – Estimated Frequency
D3.5 – Experimental/ Theoretical Probability
D3.6 – Combined Probabilities
A3.4 – Plotting Linear Graphs
A3.5 – Midpoint and Gradient of line segments
A3.6 – Equations of Linear Graphs
S4.3 - Representation of 3D shapes
S4.4 - Accurately Drawing triangles
S4.5 - Constructing perpendiculars
S3.6 – Parallel Lines
S3.7 – Angles in Polygons
S3.8 – Pythagoras' Theorem
S2.5 - Translation
S2.6 - Rotation
S2.7 – Enlargement
D2.5 – Averages and Spread
D2.6 – Stem and Leaf
D2.7 – Scatter Graphs
A2.3 – Expanding Single Brackets
A2.4 – Laws of Indices
A2.5 – Factorising Single Brackets
P1.4 - Dividing in a given ratio
P1.5 – Direct Proportion
P1.6 - Comparing Value
D1.3 - Two Way Tables
D1.4 - Bias
N2.6 - Fractions of amounts
N2.7 - Percentage increase and decrease
N2.8 - Four Operations with Fractions
N3.5 – Powers & Roots
N3.6 – Prime Factor Decomposition
N3.7 – LCM and HCF
A1.5 - Inequalities
A1.6 - Further Solving Equations
A1.7 - Rearranging formulae
S1.6 - Area of compound shapes
S1.7 - Area and circumference of circles
S1.8 - Volume of prisms
N1.6 - Decimals
N1.7 - BIDMAS
N1.8 - Directed Numbers
Year 9H2
SOAR
SERVICE OPPORTUNITY ASPIRATION REWARD

How is your progress measured in class in Maths in Autumn Term?

Autumn:	
Feedback Quiz	**In class:** End of unit Feedback quizzes every 2 weeks Data in tracker as: Red (1 to 4 marks) Amber (5 to 8 marks) Green (9 to 12 marks)

Emerging	Achieving	Excelling
• I can multiply and divide positive and negative numbers • I can substitute into expressions • I can find area of shapes such as rectangles and triangles • I can input data into a two way table • I can express a number as a percentage of another	• I can round numbers • I can solve linear equations • I can find the volume of cuboids • I can find fraction of an amount • I can find the best buy • I can divide ratio into a given quantity	• I can do the 4 operations with decimals • I can solve and represent inequalities • I can find the area of compound shapes • I can do the 4 operations of fractions • I can find the percentage increase and decrease of a number • I can rearrange formula • I can use direct proportion to help with recipes

Maths

Autumn Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N1.6	Decimals Line up decimal points before doing any calculation. Fill empty spaces with zeros if needed. When multiplying or dividing, ignore the decimal at first — then count how many decimal places are needed in the final answer.	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online home learning is set twice per week from booklets which are given out each half term and these are then marked in class. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
N1.7	BIDMAS Follow the order: Brackets → Indices → Divide/Multiply → Add/Subtract. Always work from left to right for operations at the same level. Use brackets to show or change the order clearly.	
N1.8	Directed numbers Use a number line to help with negatives. Adding a negative is like subtracting; subtracting a negative is like adding. Be careful with the signs — two negatives can make a positive!	
S1.6	Area of compound shapes Split the shape into rectangles or triangles. Work out each part's area and add them together. If there's a missing side, use what you know to figure it out.	
S1.7	Area and circumference of circles Use Area = $\pi \times \text{radius}^2$ and Circumference = $2 \times \pi \times \text{radius}$. Remember, radius is half the diameter. For semicircles or quarter circles, divide your answer appropriately.	
S1.8	Volume of prisms Use Volume = area of cross section × length. First find the area of the front face (the shape that repeats), then multiply by how long the shape goes back.	
A1.5	Inequalities Solve like normal equations, but remember to flip the inequality sign if you multiply or divide by a negative! Draw number lines to show your answer clearly.	
A1.6	Further solving equations Tidy up both sides first (expand brackets and simplify). Then use your normal solving method. Watch out for variables on both sides — get them on the same side first!	
A1.7	Rearranging formulae Treat it like solving an equation — use inverse operations to get the subject on its own. Keep everything balanced!	

Maths

Autumn Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N1.6	Decimals Line up decimal points before doing any calculation. Fill empty spaces with zeros if needed. When multiplying or dividing, ignore the decimal at first — then count how many decimal places are needed in the final answer.	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online home learning is set twice per week from booklets which are given out each half term and these are then marked in class. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
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A1.7	Rearranging formulae Treat it like solving an equation — use inverse operations to get the subject on its own. Keep everything balanced!	

How is your progress measured in class in Maths in Spring Term?

Spring:	
Feedback Quiz	**In class:** End of unit Feedback quizzes every 2 weeks Data in tracker as: Red (1 to 4 marks) Amber (5 to 8 marks) Green (9 to 12 marks)

Emerging	Achieving	Excelling
• I can calculate using powers and roots • I can find the nth term of a sequence • I can expand brackets • I can draw a linear graph • I can translate a shape • I can represent data on pie charts • I can find the angles in a triangle and quadrilateral	• I can find the product of prime factors • I can use the laws of indices • I can rotate a shape • I can find the averages of a set of data • I can find the missing angles in parallel lines	• I can find the HCF and LCM • I can factorise brackets • I can enlarge shapes • I can use Pythagoras Theorem • I can represent data on stem and leaf • I can find the midpoint, gradient and equation of a line

Maths

Spring Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N3.5	Powers and roots Power (exponent): multiply a number by itself repeatedly (e.g. 3^4 = 3×3×3×3 Root: opposite of a power (e.g. √25 = 5) Use square and cube roots often in reverse operations.	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online home learning is set twice per week from booklets which are given out each half term and these are then marked in class. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
N3.6	Prime factor decomposition Break the number down into prime factors using a factor tree. E.g. 60 = 2 × 2 × 3 × 5	
N3.7	LCM and HCF HCF (Highest Common Factor) = the biggest number that goes into both numbers LCM (Lowest Common Multiple) = the smallest number they both appear in when you list their times tables Use lists or a Venn diagram with prime factors to help you!	
A2.3	Expanding single brackets Multiply everything inside the bracket by the term outside. E.g. 3(x+4)=3x+12	
A2.4	Laws of indices Learn the core rules: Multiply → add powers Divide → subtract powers Brackets → multiply powers Negative → flip (e.g. a^−1=1/a) Zero power = 1	
A2.5	Factorising single brackets Take out the highest common factor (HCF) of all terms. E.g. 6x+9=3(2x+3)	
S2.5	Translation Slide the shape without turning or flipping it. Use a column vector (with x above y) where x = left/right and y = up/down	
S2.6	Rotation Turn the shape around a centre of rotation by a certain angle and direction (usually clockwise or anti-clockwise). Use tracing paper to help!	
S2.7	Enlargement Multiply all distances from the centre of enlargement by the scale factor	

Maths

Spring Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
S2.7	Enlargement Multiply all distances from the centre of enlargement by the scale factor. Scale factor > 1 = bigger Between 0 and 1 = smaller Use ruler and lines from the centre	

Maths

Spring Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N3.5	Powers and roots Power (exponent): multiply a number by itself repeatedly (e.g. 3^4 = 3×3×3×3 Root: opposite of a power (e.g. √25 = 5) Use square and cube roots often in reverse operations.	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online home learning is set twice per week from booklets which are given out each half term and these are then marked in class. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
N3.6	Prime factor decomposition Break the number down into prime factors using a factor tree. E.g. 60 = 2 × 2 × 3 × 5	
N3.7	LCM and HCF HCF (Highest Common Factor) = the biggest number that goes into both numbers LCM (Lowest Common Multiple) = the smallest number they both appear in when you list their times tables Use lists or a Venn diagram with prime factors to help you!	
A2.3	Expanding single brackets Multiply everything inside the bracket by the term outside. E.g. 3(x+4)=3x+12	
A2.4	Laws of indices Learn the core rules: Multiply → add powers Divide → subtract powers Brackets → multiply powers Negative → flip (e.g. a^−1=1/a) Zero power = 1	
A2.5	Factorising single brackets Take out the highest common factor (HCF) of all terms. E.g. 6x+9=3(2x+3)	
S2.5	Translation Slide the shape without turning or flipping it. Use a column vector (with x above y) where x = left/right and y = up/down	
S2.6	Rotation Turn the shape around a centre of rotation by a certain angle and direction (usually clockwise or anti-clockwise). Use tracing paper to help!	

Maths

Spring Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
S2.7	Enlargement Multiply all distances from the centre of enlargement by the scale factor. Scale factor > 1 = bigger Between 0 and 1 = smaller Use ruler and lines from the centre	

How is your progress measured in class in Maths in Summer Term?

Summer:	
Feedback Quiz	**In class:** End of unit Feedback quizzes every 2 weeks Data in tracker as: Red (1 to 4 marks) Amber (5 to 8 marks) Green (9 to 12 marks)

Emerging	Achieving	Excelling
• I can sketch 3D shapes and find their nets • I can find the estimated frequency of an event • I can find the scale factor	• I can accurately draw triangles • I can find the experimental probability of an event • I can write a number as a percentage of another	• I can accurately construct perpendicular bisectors • I can find the combined probability of events • I can find the percentage increase and decrease

Maths

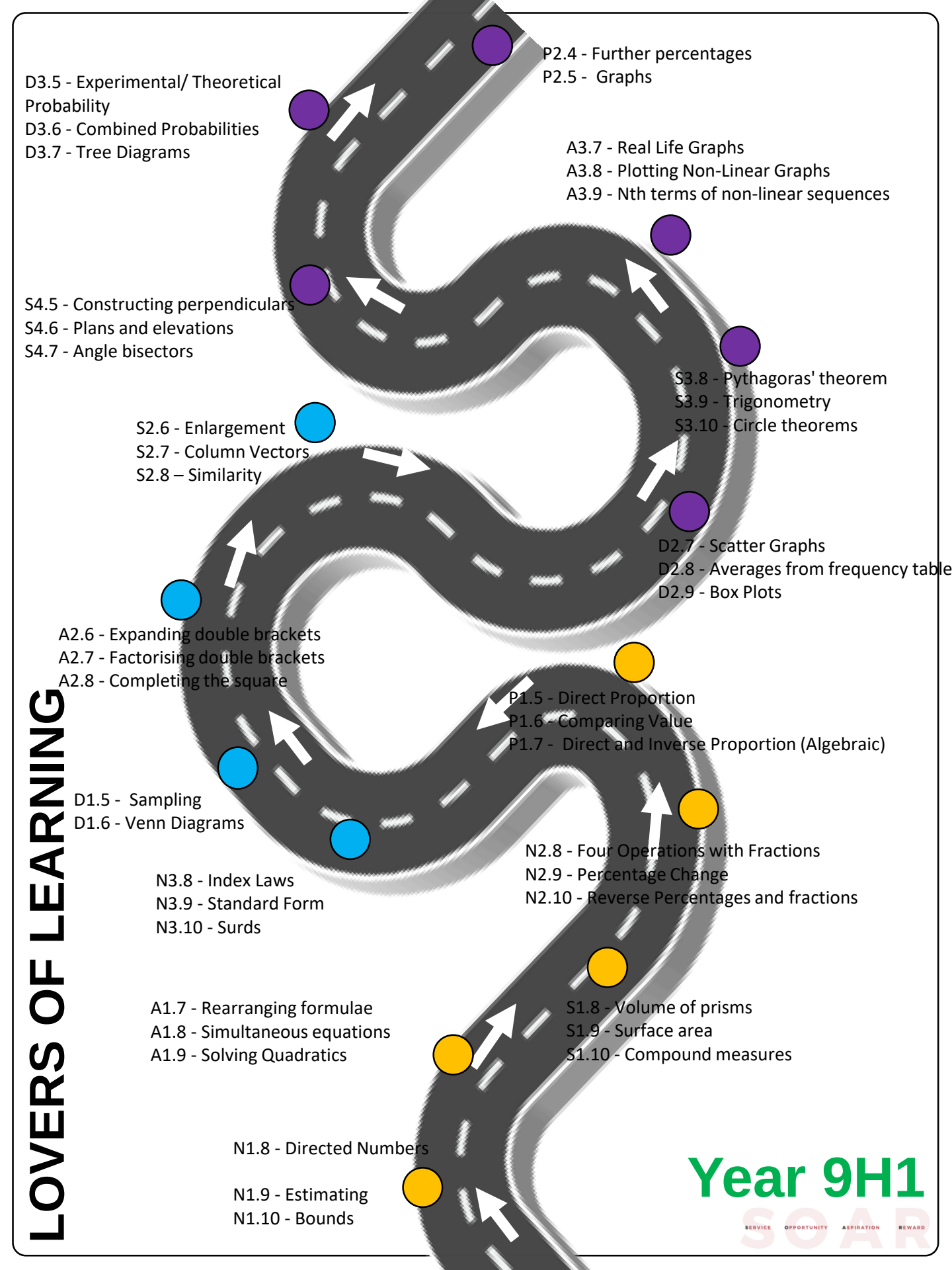
Summer Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
S4.3	Representation of 3D shapes Focus on what makes each shape special — like flat or curved surfaces, identical faces, or pointed tops. Draw these accurately using measurements provided	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online home learning is set twice per week from booklets which are given out each half term and these are then marked in class. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
S4.4	Accurately drawing triangles Use a ruler and protractor or compasses. Follow given lengths and angles carefully. Check triangle types: SAS, ASA, SSS.	
S4.5	Constructing perpendiculars Use a compass and straightedge: From a point on/above a line Draw arcs and connect intersections Don't use protractors for this — it must be a construction.	
D3.4	Estimated frequency Estimated Frequency=Probability×Number of trials Use this to predict outcomes based on probability and frequency.	
D3.5	Experimental probability Theoretical: what should happen Experimental: what did happen Compare both. More trials = experimental gets closer to theoretical.	
D3.6	Combined probabilities AND (both happen): multiply P(A and B) =P(A) x P(B) OR (either happen): add If events can't happen together (mutually exclusive): P(A or B)=P(A)+P(B)	
P2.3	Scale Scale: real vs drawing size. Use ratios to scale up or down. E.g. 1:50 → 1cm = 50cm in real life Keep units consistent!	

Maths

Summer Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
P2.4	Further percentages Successive changes (use chained multipliers) Percentage change: difference/original×100%	


LOVERS OF LEARNING
D3.5 - Experimental/ Theoretical Probability
D3.6 - Combined Probabilities
D3.7 - Tree Diagrams
P2.4 - Further percentages
P2.5 - Graphs
A3.7 - Real Life Graphs
A3.8 - Plotting Non-Linear Graphs
A3.9 - Nth terms of non-linear sequences
S4.5 - Constructing perpendiculars
S4.6 - Plans and elevations
S4.7 - Angle bisectors
S3.8 - Pythagoras' theorem
S3.9 - Trigonometry
S3.10 - Circle theorems
S2.6 - Enlargement
S2.7 - Column Vectors
S2.8 – Similarity
D2.7 - Scatter Graphs
D2.8 - Averages from frequency table
D2.9 - Box Plots
A2.6 - Expanding double brackets
A2.7 - Factorising double brackets
A2.8 - Completing the square
P1.5 - Direct Proportion
P1.6 - Comparing Value
P1.7 - Direct and Inverse Proportion (Algebraic)
D1.5 - Sampling
D1.6 - Venn Diagrams
N2.8 - Four Operations with Fractions
N2.9 - Percentage Change
N2.10 - Reverse Percentages and fractions
N3.8 - Index Laws
N3.9 - Standard Form
N3.10 - Surds
A1.7 - Rearranging formulae
A1.8 - Simultaneous equations
A1.9 - Solving Quadratics
S1.8 - Volume of prisms
S1.9 - Surface area
S1.10 - Compound measures
N1.8 - Directed Numbers
N1.9 - Estimating
N1.10 - Bounds
Year 9H1
SOAR
SERVICE OPPORTUNITY ASPIRATION REWARD

How is your progress measured in class in Maths in Autumn Term?

Autumn:	
Feedback Quiz	**In class:** End of unit Feedback quizzes every 2 weeks Data in tracker as: Red (1 to 4 marks) Amber (5 to 8 marks) Green (9 to 12 marks)

Emerging	Achieving	Excelling
• I can find area of shapes such as rectangles and triangles • I know the different sampling methods • I can input data into a two way table • I can express a number as a percentage of another • I can use Venn diagrams	• I can estimate • I can find the volume of cuboids • I can find the reverse percentage • I can find fraction of an amount • I can find the best buy • I can find direct and inverse proportion • I can divide ratio into a given quantity • I can factorise quadratics	• I can do the 4 operations with decimals • I can use bounds to solve problems • I can solve simultaneous equations • I can find the surface area of shapes • I can do the 4 operations of fractions • I can find the percentage change • I can rearrange formula • I can use direct proportion to help with recipes

Maths

Autumn Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N1.8	Use a number line to help with negatives. Adding a negative is like subtracting; subtracting a negative is like adding. Be careful with the signs — two negatives can make a positive!	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online home learning is set twice per week from booklets which are given out each half term and these are then marked in class. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
N1.9	Round numbers to 1 significant figure for quick estimates. Use your estimate to check if your exact answer is sensible. Think of estimation like a shortcut for checking.	
N1.10	Think about what the number could really be after rounding — the lower bound is the smallest it could be, and the upper bound is the biggest. Use inequality symbols (like < or ≤) to show the range it could lie in.	
S1.8	Use Volume = area of cross section × length. First find the area of the front face (the shape that repeats), then multiply by how long the shape goes back.	
S1.9	Think of each face of the 3D shape as a 2D shape. Find the area of each face and add them all together. Be careful with cylinders — include the circles and the side!	
S1.10	Know the formulas like Speed = Distance ÷ Time and Density = Mass ÷ Volume. Rearrange the formula depending on which part you need. Units must match!	
A1.7	Treat it like solving an equation — use inverse operations to get the subject on its own. Keep everything balanced! For more complicated formulas, go one step at a time.	
A1.8	Use elimination (make one variable cancel out) or substitution (replace one expression into the other). Tidy up your answers at the end and check they work in both equations.	
A1.9	Factorise the expression into two brackets. Set each bracket = 0 and solve. If factorising is tricky, try a method like the “magic number” or use the quadratic formula.	

Maths

Autumn Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N2.8	× and ÷: Multiply tops and bottoms; for ÷ flip the second fraction and ×	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online home learning is set twice per week from booklets which are given out each half term and these are then marked in class. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
N2.9	Use the formula:	
N2.10	Work backwards using the decimal multiplier.	
P1.5	Set up a proportion table or use scaling.	
P1.6	Use "value for money" by dividing cost by quantity or vice versa.	
P1.7	Direct proportion: $y = kx \rightarrow$ as x increases, so does y	
D1.5	Instead of surveying everyone, take a smaller group.	
D1.6	Use overlapping circles to show how groups intersect.	
N2.8	× and ÷: Multiply tops and bottoms; for ÷ flip the second fraction and ×	

How is your progress measured in class in Maths in Spring Term?

Spring:	
Feedback Quiz	**In class:** End of unit Feedback quizzes every 2 weeks Data in tracker as: Red (1 to 4 marks) Amber (5 to 8 marks) Green (9 to 12 marks)

Emerging	Achieving	Excelling
• I can find the nth term of a quadratic sequence • I can use standard form • I can use column vectors • I can factorise quadratics • I can use scale factor in similar shapes • I can expand double and triple brackets • I can draw a non-linear graph	• I can complete the square • I can use the laws of indices • I can rotate a shape • I can find the averages of a from a grouped table • I can find the missing angles in parallel lines • I can represent data on a box plot	• I can enlarge shapes • I can use surds • I can use Pythagoras Theorem • I can represent data on a scatter graph • I can use Trigonometry • I understand Circle theorems

Maths

Spring Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
N3.8	Multiply → add powers Divide → subtract powers Brackets → multiply powers Negative → flip (e.g. a^{-1} = 1/a Zero power = 1	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online home learning is set twice per week from booklets which are given out each half term and these are then marked in class. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
N3.9	Write very large or small numbers as: a×10^n, where 1 ≤ a < 10 E.g. 56,000 = 5.6 × 10^4 0.007 = 7 × 10^{-3}	
N3.10	Surds are irrational roots you can't simplify to a whole number (e.g. √2). Keep in simplest form (no decimals), and remember:$\sqrt{\mathbf{ab}}=\sqrt{a}\sqrt{\mathbf{b}}$	
A2.6	Use FOIL (First, Outside, Inside, Last), or the grid method. E.g. $(x + 3)(x + 2) = x^2 + 5x + 6$	
A2.7	Find two numbers that multiply to the last term and add to the middle term. E.g. $x^2 + 7x + 10 = (x + 5)(x + 2)$	
A2.8	Write in the form (x + a)^2 + b Half the middle term, square it, then adjust. E.g. $x^2 + 6x + 5 = (x + 3)^2 - 4$	
S2.6	Multiply all distances from the centre of enlargement by the scale factor. Scale factor > 1 = bigger Between 0 and 1 = smaller Use ruler and lines from the centre	

Maths

Spring Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
S2.7	A vector (xy)tells you the movement: Right/left by x Up/down by y Used for translations or describing movement between points.	
S2.8	Shapes are similar if they have the same angles and proportional sides. Use scale factor to link sides, areas (× scale factor^2), or volumes (× scale factor^3).	

Maths

Spring Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
D2.7	Plot coordinate pairs, then look for correlation: Positive, negative, or no correlation. Draw a line of best fit if needed — goes through the "middle" of points.	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online home learning is set twice per week from booklets which are given out each half term and these are then marked in class. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
D2.8	Use totals: Mean = ∑(fx) Multiply values by frequencies, then divide by total frequency.	
D2.9	Need 5 key values: Minimum, Q1, Median, Q3, Maximum Plot on a number line. Compare spread (IQR) and medians between data sets.	
S3.8	Right-angled triangle only: a^2 + b^2 = c^2 Use to find missing side c = hypotenuse (longest side	
S3.9	Right-angled triangles: Sin = Opp / Hyp Cos = Adj / Hyp Tan = Opp / Adj Label sides from the angle, pick the right formula, then rearrange.	

Maths

Spring Term 2 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
S3.10	Key facts to remember: Angle in a semicircle = 90° Angles at the circumference from same arc = equal Opposite angles in a cyclic quad = 180° Tangent meets radius at 90° Use diagrams and markings carefully.	
A3.7	Look at context: time–distance, speed, temperature. Flat lines = no change, steep = fast, downward = decreasing. Interpret what the shape means.	

How is your progress measured in class in Maths in Summer Term?

Spring:	
Feedback Quiz	**In class:** End of unit Feedback quizzes every 2 weeks Data in tracker as: Red (1 to 4 marks) Amber (5 to 8 marks) Green (9 to 12 marks)

Emerging	Achieving	Excelling
• I can sketch 3D shapes and find their nets • I can find the estimated frequency of an event • I can find the scale factor	• I can accurately draw triangles • I can find the experimental probability of an event • I can write a number as a percentage of another	• I can accurately construct perpendicular bisectors • I can find the combined probability of events • I can find the percentage increase and decrease

Maths

Summer Term 1 Golden Nuggets and Work Hard

	Golden Nugget	Work Hard
S4.5	Constructing Perpendiculars Use a compass and straight edge. From a point on/above a line: Draw arcs and connect intersections. Don't use protractors for this — it must be a construction.	Students develop fluency and problem-solving skills through a range of structured activities. Most topics begin with scaffolded worksheets that progress from fluency-focused questions to more challenging tasks involving reasoning and real-world contexts. Online home learning is set twice per week from booklets which are given out each half term and these are then marked in class. Progress is monitored through fortnightly feedback quizzes, offering clear insights into students' understanding and informing future teaching.
S4.6	Plans and Elevations Draw the shape from 3 views: Plan = top view Front elevation = front view Side elevation = side view Count cubes and sketch neatly.	
S4.7	Angle Bisectors Use a compass to find equal arcs from each line. Mark intersecting arcs inside the angle, then draw the bisector. It splits the angle exactly in half.	
D3.5	Experimental/Theoretical Probability Theoretical: what should happen Experimental: what did happen Compare both. More trials = experimental gets closer to theoretical.	
D3.6	Combined Probabilities AND (both happen): multiply P(A and B) =P(A) x P(B) OR (either happen): add If events can't happen together (mutually exclusive): P(A or B)=P(A)+P(B)	
D3.7	Tree Diagrams Multiply along branches, add across outcomes. Label all probabilities, and remember: Each branch set should add to 1. Useful for multiple-stage problems.	
P2.4	Further Percentages Successive changes (use chained multipliers) Percentage change: Difference/original × 100%	
P2.5	Graphs Read axes carefully — units matter. Look for rates of change, flat vs steep sections, and labels. Real-life graphs often represent time, money, or distance.	