

# Maths Curriculum Intent

The aim of the maths curriculum is to prepare all of our children for life after school. We aim to achieve this by encouraging discussions during our lessons to help children learn social skills, be **respectful** of others and to help them build positive **friendships** with their peers. Children will be encouraged to **do their best** at all times. This will be reinforced throughout their time at the school. The work set out for the children will be of a level that increases their **resilience** so that they can succeed in the future.

All maths teachers have expert knowledge of the content they deliver. Any gaps in their knowledge will be supported once identified so that the pupils are not disadvantaged.

Maths "Mastery" and "Mathematical Talk" is listed in long term planning and resources, to enable students to understand key concepts, and also generate appropriate discussions. Long term planning is also designed and delivered in a way that allows pupils to transfer key knowledge to long term memory. It is sequenced so that new knowledge and skills build on what has been taught before so students can work towards defined end points.

Teachers will regularly assess pupils' understanding via discussion, purple pen and end of topic assessment in order to inform teaching. This will help pupils embed and use knowledge fluently and develop their understanding, and not simply memorise disconnected facts.

We plan for all students to achieve their personal best academically which means our learning journey aims to prepare students for their GCSE's. Students will also be entered for other qualifications such as the Entry Level Certificate and Functional Skills Level 1 & 2.

In maths cross curricular opportunities are frequent. For example; the use of maths in science (handling and recording data), catering (weighing and measuring out ingredients,) sport (heart rate, recording results and timings) and outdoor education (positioning and direction).

Assessment is regular and informs all parties of progress, however, is often informal and avoids any anxiety.

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# Teaching & Learning In Maths

#### What does excellent teaching and learning look like in maths?

Excellent maths teaching and learning will ensure the learner is at the centre of what is being taught. The physical and emotional environment in the maths classroom will enable learners to feel safe enough to take risks in their learning and respond to teachers and their peers positively. If children feel confident enough to answer questions and take part in discussions it is not only easier for them to achieve all they can but it lends itself to make the teachers job of assessment and future planning easier.

#### How is maths taught in the RMS Foundation Curriculum (KS1, 2 & 3)

The KS2 and KS3 curriculums will follow the White Rose Maths curriculum and its small steps objectives. Teachers will have full access to all resources that support this curriculum. All teachers within the department will be expected to pay attention to the highlighted Maths Talk sections within the planning to generate rich discussion during lessons, as stated above. All objectives are clearly differentiated (diving, deeper & deepest). Due to class sizes feedback to student will be given as soon as possible. Teachers are expected to use purple pen to highlight children's responses to this feedback. End of topic assessments are in place to identify understanding and help future planning. Other resources are available to help support teachers and students such as Mathsbox, My Maths, Doodle Maths and Times Table Rock Stars. These resources are used to consolidate learning and can be used as a form of homework.

#### How is maths taught in the Options Curriculum (KS4)

KS4 as with other key stages will also follow the White Rose Maths curriculum and its small steps objectives. This has been put into place so that children are familiar with the style of objectives and how to achieve them. Resources are still available for KS4 through White Rose Maths, with the end of topic assessments written more like exam style questions. Objectives are highlighted as Lower or Higher, this makes it easier for teachers to differentiate delivery and also stretch and challenge. Teachers are expected to use purple pen to highlight children's responses to feedback, as in other key stages. MathsBox and My Maths can also be used. My Maths GCSE Booster Packs can be used during lessons or homework to help consolidate learning. WJEC past papers and paper builders are an effective tool to help develop understanding of a given topic.

# Teaching & Learning In Maths

#### How is reading promoted in maths?

All teacher's of Maths are expected to be aware of each child's current reading age and blank level assessment. This will allow staff to differentiate all learning resources so independent reading can be encouraged in every lesson and appropriate questioning of knowledge is utilised so each learner is more able to build upon their scientific knowledge whilst improving their reading.

### Measuring Impact in Maths

At Red Moor School staff use an online platform called SOLAR (Special On Line Academic Records) to record student attainment in maths. This system uses the RMS Steps Assessment Framework.

The RMS Steps covers a broad range of ability, from the 'Foundation Learning Skills' (FLS) that cover Early Years education, through to the main 'Steps' curriculum that takes students from year 1 through to year 11. This helps to provide staff with additional guidance on the sequence and progression of knowledge and skills within the maths curriculum helping to ensure that learning builds upon prior attainment.

Each Step of the framework represents the corresponding academic year – so a child working on Step 5 would be working broadly in line with students in year 5 at a mainstream school, and all objectives are linked directly to the National Curriculum. A child who masters all 11 steps will be expected to leave the school with an excellent GCSE grade in maths.

The expectation for progress for students is that they will master 80% of the curriculum each year to achieve maths mastery of that step, before moving on to the next step.

# Skills and Progression

All the knowledge and skills that we would like our leaners to achieve by the end of year 11 are set out in sequential order on SOLAR. It is our intention to ensure that all children progress at the expected rate so they area able to achieve their personal best.

We have ordered the knowledge and skills in a sequential way and these can be seen on the following pages.

SOLAR: Number / Place Value KS2		
Step 1 Autumn 1 Autumn 2 Spring 1	Count, read and write numbers to 10 in numerals and words Count, read and write numbers to 20 in numerals and words Count, read and write numbers to 50 in numerals Count, read and write numbers to 100 in numerals Identify and represent numbers using objects and pictures Use mathematical language and symbols	
Step 2 Autumn 1	Represent numbers to 100 Count on in different steps	
Step 3 Autumn 1	Numbers to 1000 100's, 10's and 1's	
Step 4 Autumn 1 Autumn 2	Roman Numerals Rounding Numbers to 10,000 Negative numbers	
Step 5 Autumn 1	Numbers to 100,000 Numbers to 1,000,000 Roman Numerals Negative Numbers	
Step 6 Autumn 1	Numbers to 10,000,000	

thousands	hundreds	tens	ones
4	0	7	4
4,000	000	70	4

	SOLAR: Number / Addition and Subtraction KS2
Step 1 Autumn 1 Spring 1	Number bonds to 10 Fact families Read, write and interpret mathematical symbols Compare addition and subtraction statements Solve one step problems involving addition and subtracting
Step 2 Autumn 1 Autumn 2	Number bonds to 20 Number bonds to 100 Add and Subtract 10 Adding numbers Subtracting numbers
Step 3 Autumn 1	3 digit and 1 digit numbers 3 digit and 2 digit numbers 3 digit and 3 digit numbers
Step 4 Autumn 1	Add 1's, 10's, 100's and 1000's Subtract 1's, 10's, 100's and 1000's
Step 5 Autumn 1	Add and subtract 4 digits Addition and subtraction problem solving
Step 6 Autumn 1	Add and subtract whole numbers BIDMAS



SOLAR: Number / Multiplication and Division KS2		
Step 1 Summer 1	Count in 10's Make equal groups Make doubles Solve one step problems involving multiplication and division	
Step 2 Autumn 2 Spring 1	Equal Groups Recognise odd and even numbers 2 times-table 5 times-table 10 times-table Multiplication sentences	
Step 3	Multiplication 3 times table 4 times table 8 times table 2 digits by 1 digit 2 digits by 2 digits	
Step 4 Autumn 2 Spring 1	1, 10 and 100 6 Times table 9 Times table 7 Times table 11 and 12 Times table Multiple digits Problem solving	
Step 5 Autumn 2	Multiples and factors Special numbers 10, 100 and 1,000 Multipying multiple digits Dividing mutiple digits	
Step 6 Autumn 1 Autumn 2	Multiply up to a 4 digit number by 1 digit Division BIDMAS Factors and multiples Special numbers	



SOLAR: Number / Fractions, Decimals and Percentages KS2		
Step 1 Summer 2	Recognise, find and name a half Recognise, find and name a quarter	
Step 2 Spring 2	Recognise and find fractions Unit and Non-Unit Fractions Equivalence of 1/2 and 2/4 Count in fractions	
Step 3 Spring 1	Fractions intro Tenths Fractions of objects Equivalent fractions Number operations with fractions	
Step 4 Spring 1 Spring 2	What is a fraction Types of fractions Add and subtract fractions Problem solving with fractions Understanding Decimals Tenths and hundredths Dividing by 10 and 100	
Step 5 Spring 1 Spring 2	Fractions Add and subtract fractions Multiply fractions Understanding decimals Fractions, Decimals and Percentages Add and subtract decimals Multiply and divide decimals Fractions and decimals	
Step 6 Autumn 2 Spring 1	Understanding Fractions Add and subtract fractions Multiply and divide fractions Four rules with fractions Fractions of amounts Understanding decimals Multiply and divide decimals Understanding percentages Percentages of amounts	



SOLAR: Ratio and Proportion KS2	
Step 6	Understanding ratio
Spring 2	



SOLAR: Algebra KS2	
Step 6	Understanding algebra Algebraic rules
Summer 1	Algebraic equations



	SOLAR: Measurement / Using measures KS2
Step 1	Compare, describe and solve practical problems involving length and height
Spring 2	Compare, describe and solve practical problems involving mass and weight Compare, describe and solve practical problems involving capacity and volume Measure and record
Step 2	Length and Height
Spring 2 Summer 1	Measure capacity Temperature
Step 3 Spring 2	Understanding mass Understanding capacity Length
Step 5 Summer 1	Volume and capacity Converting units
Step 6	Converting units Understanding volume
Spring 2	





SOLAR: Measurement / Money KS2		
Step 1	Recognise and know the value of coins and notes	
Summer 2		
Step 3	Money operations f and p	
Summer 2		
Step 4	Money	
Summer 1		





	SOLAR: Measurement / Time KS2
Step 1 Spring 2 Summer 2	Hour Half past Draw hands on clock to show time Different ways of writing time Comparing time Days of week Months of year Days, weeks, months and years
Step 2 Summer 1	O'clock and half past recap Quarter past an To 5 minutes Hours and Days Durations of time
Step 3 Summer 2	Telling the time to 5 min Telling the time to 1 min 24-hour clock Using am and pm Hours in a day Months and years Start and end times Comparing durations Finding durations Measuring time in seconds
Step 4 Summer 1	Hours, minutes and seconds Years, weeks, months and days Analogue to digital - 12 hour Analogue to digital - 24 hour
Step 5 Summer 1	Converting units of time Timetables

EVERYONE CAN!

EVERYONE CAN DO MATHS:

	SOLAR: Measurement / Perimeter, Area, Volume KS2
Step 3	Measure perimeter Calculate perimeter
Spring 2	
Step 4 Summer 1	Kilometres Perimeter on a grid Perimeter of a rectangle Perimeter of rectilinear shapes What is area? Counting squares Making shapes Comparing area
Step 5 Spring 1	Measure perimeter Calculate perimeter Area of rectangles Area of compound shapes Area of irregular shapes
Step 6 Spring 2	Shapes - same area Area and perimeter Area of triangles Area of parallelogram



SOLAR: Geometry 2D / 3D Shapes KS2		
Step 1 Autumn 2	Rectangles, Squares, Triangles, Circles Cuboids, Cubes, Pyramids, Spheres Identify the core of the pattern (Part that repeats) Draw missing shapes Predict what the pattern will continue to look like Use real life manipulatives and well as geometric shapes Compare patterns Identify the core of the pattern (Part that repeats) Draw missing shapes	
Step 2 Spring 1	Square, rectangle, circle, triangle, pentagon Count sides, Count vertices, Draw, Sort, Symmetry Cube, cuboid, cone, cylinder, sphere, triangular prism, square based pyramid Sort, Count edges, Count faces, Count vertices	
Step 3 Summer 1	Recognise and describe 2d shapes Circles, Triangles, Quadrilaterals, Pentagon, Hexagon, Heptagon, Octagon, Nonagon and Decagon. Recognise and describe 3d shapes Cylinder, Cube, Cuboid, Cone, Square based pyramid, Spheres and Prisms. Make 3d shapes Cubes and Cuboids	
Step 4 Summer 2	Triangles Quadrilaterals	
Step 5 Summer 1	Regular and irregular polygons Reasoning about 3d shapes	
Step 6 Summer 2	Draw shapes accurately Draw nets of 3d shapes	



SOLAR: Geometry Angles & Lines KS2	
Step 3 Summer 1	Turns and angles, Right angles in shapes, Compare angles , Draw accurately. Horizontal and vertical Parallel and perpendicular
Step 4 Summer 2	Identify angles Compare and order angles Triangles Quadrilaterals
Step 5 Summer 1	Measuring angles in degrees Measuring with a protractor Drawing lines and angles accurately Calculating angles on a straight line Calculating angles around a point Calculating lengths and angles in shapes
Step 6 Summer 2	Measure with protractor, Introduce angles , Calculate angles, Vertically opposite angles Angles in a triangle; special cases, missing angles Angles in special quadrilaterals Angles in regular polygons

SOLAR: Geometry Position & Direction KS2	
Step 1	Half, quarter and three quarter turn Forwards and backwards
Summer 1	Left/right
Step 2	Describe movement Describe turns
Summer 1 Summer 2	2d and 3d shapes
Step 4	Describe position
Summer 1	Draw on a grid Move on a grid Describe movement on a grid
Step 5	Position in the first quadrant Reflection
Summer 2	Reflection with coordinates
	Translation with coordinates
Step 6	The first quadrant
Spring 2	Four quadrants Translations Reflections

	SOLAR: Statistics Present, Interpret & Solve Problems KS2
Step 2 Summer 2	Construct and interpret a tally chart Draw and interpret pictograms (1:1) Draw and interpret pictograms (2, 5 and 10) Block diagrams
Step 3 Summer 1	Pictograms Bar charts Tables
Step 4 Summer 2	Interpret charts Comparison, sum and difference Introducing line graphs Line graphs
Step 5 Summer 2	Read and interpret line graphs Draw line graphs Use line graphs to solve problems Read and interpret tables Two-way tables Time tables
Step 6 Summer 1 Summer 2	Read and interpret line graphs Draw line graphs Use line graphs to solve problems Circles Read and interpret pie charts Pie charts with percentages Draw pie charts The mean



### Secondary progression KS 3&4 (Steps 7-11)

SOLAR: Number Understand & Represent (bold = higher content)	
Step 7	Know and use different mental arithmetic strategies , Use estimation and known facts, Identify, interpret and construct Venn diagrams Know, understand and
Summer 1 Summer 2	use Probability, <b>Recognise and understand special numbers</b> , Highest Common Factors (HCF) and Lowest Common Multiples (LCM), <b>Make and test conjectures</b> .
Step 8	Converting Fractions, Decimals and Percentages, Calculating percentage change, Investigate and use indices, Understand and use standard form, Rounding and
Spring 1 Spring 2	estimating, Calculating with BIDMAS and money, Converting metric units
Step 9	Solve problems with numbers, Calculations involving money, Solving problems involving money, Percentage increase and decrease, Recognise and solve
Spring 1	percentage problems
Step 10	<b>Consolidate knowledge and understanding of 4 operations without a calculator,</b> Develop non-calculator number skills, Problem solving using non-calculator
Summer 1	methods, Consolidate knowledge and understanding of types of numbers and
Summer 2	of indices and roots, <b>Develop understanding of indices and roots</b>
Step 11	Consolidate multiplicative reasoning Develop understanding of multiplicative reasoning
Spring 1	

	SOLAR: Number Calculations (bold = higher content)	
Step 7 Spring 1	Formal methods of addition and subtraction, Problem solving involving addition and subtraction, Understanding multiplication and division, Formal methods of multiplication and division, Problem solving involving multiplication and division Finding fractions and percentages of amounts.	
Step 8 Spring 1 Spring 2	Round numbers to powers of 10 and 1 significant figure (R), Round numbers to a given number of decimal places, Estimate the answer to a calculation, Understand and use error interval notation (H), Calculate using the order of operations.	
Step 9 Spring 1	Calculate simple interest Calculate compound interest Calculate wages and tax	
Step 10 Summer 2	Rational and irrational numbers (Convert recurring decimals) (H), Understand and use surds (H), Calculate with surds (H), <i>Rounding to decimal places and sig- nificant figures (R)</i> , Understand and use limits of accuracy, <b>Upper and Lower</b> <b>bounds (H)</b> , Use number sense , Solve financial maths problems, Break down and solve multi-step problems	

**EVERYONE CAN!** 



EVERYONE CAN DO MATHS:

SOLAR: Number Fractions, Decimals & Percentages (bold = higher content)	
Step 7 Autumn 2	Understand and work with numbers up to 1,000,000,000 Understand and work with decimal numbers Find mean and range
	Working with Powers and significant figures
	Understand an work with fractions
	Convert between Fractions, Decimals and Percentages
Step 8	Multiplying fractions Dividing fractions
Autumn 1	
Step 9	Use the equivalence of fractions, decimals and percentages (R), Calculate per- centage increase and decrease (R), Express a change as a percentage (R), Solve
Spring 1	'reverse' percentage problems, Recognise and solve percentage problems (non- calculator), <i>Recognise and solve percentage problems (calculator) (R)</i> , <i>Solve</i> <i>problems with repeated percentage change (H)</i>

SOLAR: Algebra Notation, Substitution, Equivalence & Proof (bold = higher content)	
Step 7 Autumn 1	<b>Recognise and represent sequences</b> , Continue sequences and explain rules, Understand and solve single step numerical functions, Understand and solve single step algebraic functions, Understand and solve two step functions, Equality and inverse operations, Understand, simplify and collect like terms
Step 8 Summer 2	Understand single bracket expressions <b>Understand and solve inequalities</b> Generate sequences, finding the nth term <b>Understand and work with indices</b>
Step 9 Autumn 1	Understand and interpret straight line graphs, <b>Real life problems involving</b> straight line graphs, Solving one and two step equations and inequalities, Rearranging and substituting into equations, inequalities and formulas, Under- standing conjectures, <b>Developing and exploring conjectures</b>
Step 10 Summer 1	Consolidate knowledge and understanding of manipulating expressions Working with algebraic fractions
Step 11 Autumn 2	Expand and factorise, <b>Solve equations,</b> Form and solve equations and inequali- ties, Change the subject of formula, Consolidate knowledge and understanding of functions, <b>Working with functions</b>





SOLAR: Solve Equations, Inequalities & Linear Graphs (bold = higher content)	
Step 7	Understand and solve two step functions, Equality and inverse operations, Understand, simplify and collect like terms
Autumn 1	
Step 8	Understand and solve inequalities
Summer 2	
Step 9	Understand and interpret straight line graphs Real life problems involving staright line graphs
Autumn 1	Solving one and two step equations and inequalities
Step 10	Working with equations and inequalities
Autumn 2	Consolidate knowledge and understanding of simultaneous equations
	Solving linear simultaneous equations Solving simultaneous equations
Step 11	Form and solve equations and inequalities
Autumn 2	Consolidate knowledge and understanding of functions Working with functions

SOLAR: Ratio, Proportion, Rates of Change (bold = higher content)	
Step 8	Understand and solve problems using ratio, Express and compare ratio, Under- stand and explore conversions, Draw, understand and interpret graphs and dia-
Autumn 1	grams, Multiplying fractions, <b>Dividing fractions</b>
Step 9 Summer 1	Enlarge shapes in different factors, Solve problems involving enlargement and similarity, Direct and inverse proportion, Problem solving involving ratio and proportion, Solve problems involving rates of change
Step 10 Spring 2	Consolidate knowledge and understanding of ratios and fractions, <b>Solve prob- lems involving ratios and fractions</b> , Consolidate knowledge and understanding of percentages and interest, Problem solving using percentages and interest, Con- solidate knowledge and understanding of probability, <b>Develop understanding of</b>





SOLAR: Geometry & Measures: Perimeter, Area & Volume (bold = higher content)	
Step 8 Summer 1	Calculate the area of triangles, rectangles and parallelograms Calculate the area of a trapezium Calculate the perimeter and area of compound shapes (1) Investigate the area of a circle
	Calculate the area of a circle and parts of a circle with a calculator
Step 9 Autumn 2	Find area of 2-D shapes ( R) Surface area of cubes and cuboids Surface area of triangular prisms Surface area of a cylinder Volume of cubes and cuboids Volume of other 3-D shapes - prisms and cylinders <b>Explore volumes of cones, pyramids and spheres (H)</b>
Step 10 Spring 1	Understand and use the volume of a cylinder and cone Understand and use the volume of a sphere Understand and use the surface area of a sphere Understand and use the surface area of a cylinder and cone <b>Solve area and volume problems involving similar shapes (R) (H)</b>



#### SOLAR: Geometry & Measures: Construct & Transform Geometric figures. (bold = higher content) Step 8 Understand and use basic angles rules and notation, Investigate angles between parallel lines and the transversal, Identify and calculate with alternate and corre-Spring 2 sponding angles, Identify and calculate with co-interior, alternate and corresponding angles, Solve complex problems with parallel line angles, Construct an angle bisector (H), Construct a perpendicular bisector of a line segment (H) Constructions triangles and special quadrilaterals, Investigate the properties of special guadrilaterals, Identify and calculate with sides and angles in special quadrilaterals, Understand and use the properties of diagonals of quadrilaterals (H) Understand and use the sum of exterior angles of any polygon, Calculate and use the sum of the interior angles in any polygon, Calculate missing interior angles in regular polygons, Prove simple geometric facts (H) Step 9 Know names of 2-D and 3-D shapes, Recognise prisms, Accurate nets of cuboids and other 3-D shapes, Sketch and recognise nets of cuboids and other 3-D shapes Plans and elevations. Autumn 2 Draw and measure angles, Construct and interpret scale drawings, Construct perpendicular bisectors, Construct a perpendicular from a point, Construct perpendicular to a point, Construct and angle bisector, Construct triangles from given information (R) Step 10 Use cardinal directions and related angles (R) Draw and interpret scale diagrams (R) Understand and represent bearings Spring 1 Measure and read bearings Mark scale drawings using bearings Step 11 Perform and describe a series of transformations of shapes Perform and describe negative enlargements of shapes (H) Spring 2 Identify invariant points and lines (H) Solve loci problems Understand and use trigonometrical graphs (H) Sketch and identify translations of the graph of a given function (H) Sketch and identify reflections of the graph of a given function (H)

SOLAR: (Geometry & Measure: Shape properties & Angles (bold = higher content)	
Step 7	Draw and understand angles Recognise different polygons
Spring 2 Summer 2	Construct polygons Know and reason with angles Problem solving involving angles
Step 8 Summer 1	Understand and use basic angles rules and notation Investigate angles between parallel lines and the transversal Identify and calculate with alternate and corresponding angles Identify and calculate with co-interior, alternate and corresponding angles Solve complex problems with parallel line angles <b>Construct an angle bisector (H)</b> <b>Construct a perpendicular bisector of a line segment (H)</b>
Step 9 Spring 2	Angles in parallel lines (R) Solve angles problems (using chains of reasoning) Angles problems with algebra
Step 10 Spring 1	Use cardinal directions and related angles (R) Draw and interpret scale diagrams (R) Understand and represent bearings Measure and read bearings Mark scale drawings using bearings
Step 11 Spring 1	Angles at a point (R) Angles in parallel lines (R) Exterior and interior angles of polygons Proving geometric facts

SOLAR: Geometry & Measure: Geometric Proof, Pythagoras & Trigonometry (bold = higher content)	
Step 9 Spring 2	Squares and square roots (R), Identify the hypotenuse of a right-angled triangle Determine whether a triangle is right-angled, Calculate the hypotenuse of a right- angled triangle, Calculate missing sides in a right-angled triangle, Use Pythago- ras' Theorem on coordinate axes, Explore proofs of Pythagoras' Theorem, Use Pythagoras' Theorem in 3-D shapes (H)
Step 10 Autumn 1	Explore ratio in similar right-angled triangles, Work fluently with the hypotenuse, opposite and adjacent sides, Use the tangent ratio to find missing side lengths, Use the sine and cosine ratio to find missing side length, Use sine, cosine and tangent to find missing side lengths, Use sine, cosine and tangent to find missing side lengths, Use sine, cosine and tangent to find missing side lengths, Use sine, cosine and tangent to find missing angles, Calculate sides in right-angled triangles using Pythagoras' Theorem Select an appropriate method to solve right-angled triangle problems, Work with key angles in right-angled triangles, Use trigonometry in 3-D shapes (H), Use the formula ½ab sin C to find the area of a triangle (H), Understand and use the sine rule to find missing lengths (H), Understand and use the cosine rule to find missing lengths (H), Understand and use the cosine rule to find missing lengths (H), Understand and use the cosine rule to find missing lengths (H), Understand and use the cosine rule to find missing lengths (H), Understand and use the cosine rule to find missing lengths (H), Understand and use the cosine rule to find missing lengths (H), Understand and use the cosine rule to find missing lengths (H), Understand and use the cosine rule to find missing lengths (H), Understand and use the cosine rule to find missing lengths (H), Understand and use the cosine rule to find missing lengths (H), Understand and use the cosine rule to find missing angles (H), Choosing and using the sine and cosine rules (H)
Step 11 Spring 1	Angles at a point (R), Angles in parallel lines (R), Exterior and interior angles of polygons, Proving geometric facts, Pythagoras' theorem trigonometrical ratios (R), Solve problems involving vectors, The first four circle theorems (R) (H), Angle between a radius and a chord (H), Angle between a radius and a tangent (H) Two tangents from a point (H), Alternate segment theorem (H)





SOLAR: Probability (bold = higher content)		
Step 9 Summer 2	Single event probability, Relative frequency - including convergence, Expected outcomes, Independent events, Use tree diagrams (H), Use tree diagrams to solve 'without replacement' problems (H), Use diagrams to work out probability	
Step 10 Spring 2	Know how to add, subtract and multiply fractions (R), Find probabilities using equally likely outcomes (R), Use the property that probabilities sum to 1 (R), Con- struct and interpret sample spaces for more than one event (R), Use experimental data to estimate probabilities, Find probabilities from tables, Venn diagrams and frequency trees, Calculate probability with independent events, Use tree dia- grams for independent events, Use tree diagrams for dependent events <b>Construct and interpret conditional probabilities (Tree diagrams) (H)</b> <b>Construct and interpret conditional probabilities (Venn diagrams and two-way tables) (H)</b>	

SOLAR: Statistics: Represent & Interpret Data (bold = higher content)		
Step 8 Spring 2	Draw and interpret pictograms, bar charts and vertical line charts, Draw and in- terpret multiple bar charts, Draw and interpret pie charts, Draw and interpret line graphs, Choose the most appropriate diagram for given set of data, Repre- sent and interpret grouped quantitative data, Set up a statistical enquiry, Design and criticise questionnaires, Find and interpret the range, Compare distributions using charts, Identify misleading graphs, Understand and use the mean, median and mode, Choose the most appropriate average, <b>Find the mean from an un- grouped frequency table (H), Find the mean from an grouped frequency table (H), Identify outliers, Compare distributions using averages and the range</b>	
Step 10 Summer 1	Consolidate knowledge and understanding of statistical data Primary and secondary data Construct and interpret and range of complex statistical representations Comparing distributions and extrapolations	





## Links to Supporting Documents and Guidance

SOLAR: Statistics: Represent & Interpret Data (bold = higher content)		
White Røse Maths	Red Moor School follows the White Rose Maths curriculum. The white Rose Curriculum runs all the way from year 1 to 11. Your child will follow the small steps objectives throughout their time at Oak Tree. The link below will take you to the White Rose website, where you can view eve- ry single objective your child will complete whilst at the school. <u>https://whiterosemaths.com/resources/</u>	
	My Maths Provides complete curriculum coverage from Key Stage 1 to A Level, My Maths offers interactive lessons, "booster packs" for revision, and assignable home works and worksheets, along with a wealth of re- sources. Your child can access al these resources at home as well as in school. <u>https://www.mymaths.co.uk/</u>	
doodlemaths	Doodle Maths' intelligent technology does all of the hard work. Parents can get a snapshot of their child's progress on-the-go with our Doodle Connect app, or login into our Parent Dashboard for more in-depth re- ports and insights. Doodle Maths digital learning platforms create indi- vidual work plans for children from Reception to Year 6, intelligently tai- lored to their strengths and weaknesses. Designed to reinforce existing knowledge while gradually introducing new concepts, Doodle Maths is ideal for supplementing school learning at home.	
	https://www.doodlemaths.com/	
BB Bitesize	Use <i>BBC Bitesize</i> to help with your homework, revision and learning. Find free videos, step-by-step guides, activities and quizzes by level and subject.	
	https://www.bbc.co.uk/bitesize	
	Times Tables Rock Stars is a carefully sequenced programme of daily times tables practice.	
	https://play.ttrockstars.com/	



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