

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
	Similarity					Developing Algebra						
Autumn	Congruence, similarity and Tri enlargement			igonometry		Representing solutions of equations and inequalities		Simultaneous equations		ous s		
Spring	Geometry				Proportions and P		s and Pr	oportional Change				
	Angles & Working wi bearings circles		ng with les	g with es		Ratio fract	os & ions	Percentages and Interest		Proba	ability	
-	Delving into data			Using number			Expres			ssions		
Summer	Collecting, representing and interpreting data			No calcu metł	n- Ilator nods	Types of number and sequences		Manipu expres	ulating ssions			



Congruence, Similarity and Enlargement

Small Steps

- Enlarge a shape by a positive integer scale factor
- Enlarge a shape by a fractional scale factor
- Enlarge a shape by a negative scale factor
- Identify similar shapes
- Work out missing sides and angles in a pair given similar shapes
- Use parallel line rules to work out missing angles
- Establish a pair of triangles are similar



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R denotes 'review step' – content should have been covered at KS3

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Congruence, Similarity and Enlargement

Small Steps

Explore areas of similar shapes	H
Explore volumes of similar shapes	H
Solve mixed problems involving similar shapes	H
Understand the difference between congruence and similarity	
Understand and use conditions for congruent triangles	
Prove a pair of triangles are congruent	H



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Year 10 | Autumn Term 2 | Trigonometry



Trigonometry

Small Steps

- 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 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 the appropriate method to solve right-angled triangle problems



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Year 10 | Autumn Term 2 | Trigonometry



Trigonometry

Small Steps

Work with key angles in right-angled triangles	
Use trigonometry in 3-D shapes	H
Use the formula $\frac{1}{2}ab\sin C$ to find the area of a triangle	H
Understand and use the sine rule to find missing lengths	H
Understand and use the sine rule to find missing angles	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
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Equations and Inequalities

Small Steps

Understand the meaning of a solution	
Form and solve one-step and two-step equations	R
Form and solve one-step and two-step inequalities	R
Show solutions to inequalities on a number line	
Interpret representations on number lines as inequalities	
Represent solutions to inequalities using set notation	H
Draw straight line graphs	R
Find solutions to equations using straight line graphs	



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White Rose Maths

Equations and Inequalities Small Steps

Represent solutions to single inequalities on a graph
 Represent solutions to multiple inequalities on a graph
 Form and solve equations with unknowns on both sides
 Form and solve inequalities with unknowns on both sides
 Form and solve more complex equations and inequalities
 Solve quadratic equations by factorisation* (*Also Foundation tier. Higher cover now, Core will cover in Year 11)
 Solve quadratic inequalities in one variable



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Simultaneous Equations

Small Steps

- Understand that equations can have more than one solution
- Determine whether a given (x, y) is a solution to a pair of linear simultaneous equations
- Solve a pair of linear simultaneous equations by substituting a known variable
- Solve a pair of linear simultaneous equations by substituting an expression
- Solve a pair of linear simultaneous equations using graphs
- Solve a pair of linear simultaneous equations by subtracting equations
- Solve a pair of linear simultaneous equations by adding equations
- Use a given equation to derive related facts



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Simultaneous Equations

Small Steps

- Solve a pair of linear simultaneous equations by adjusting one equation
- Solve a pair of linear simultaneous equations by adjusting both equations
- Form a pair of linear simultaneous equations from given information
- Form and solve pair of linear simultaneous equations from given information

Determine whether a given (x, y) is a solution to both a linear and quadratic equation	H
Solve a pair of simultaneous equations (one linear, one quadratic) using graphs	H
Solve a pair of simultaneous equations (one linear, one quadratic) algebraically	H
Solve a pair of simultaneous equations involving a third unknown	H



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Year 10 | Spring Term 1 | Angles and Bearings

Angles and Bearings

Small Steps

- Use cardinal directions and related angles
- Draw and interpret scale diagrams
- Understand and represent bearings
- Measure and read bearings
- Make scale drawings using bearings
- Calculate bearings using angles rules
- Solve bearings problems using Pythagoras and trigonometry
- Solve bearings problems using the sine and cosine rules



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Year 10 | Spring Term 2 | Working with Circles



Working with Circles

Small Steps

Recognise and label parts of a circle	R
Calculate fractional parts of a circle	
Calculate the length of an arc	
Calculate the area of a sector	
Circle theorem: Angles at the centre and circumference	H
Circle theorem: Angles in a semicircle	H
Circle theorem: Angles in the same segment	θ
Circle theorem: Angles in a cyclic quadrilateral	H



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Year 10 | Spring Term 2 | Working with Circles



Working with Circles

Small Steps

- 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
- Solve area and volume problems involving similar shapes





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Year 10 | Spring Term 3 | Vectors



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Vectors

Small Steps

- Understand and represent vectors
- Use and read vector notation
- Draw and understand vectors multiplied by a scalar
- Draw and understand addition of vectors
- Draw and understand addition and subtraction of vectors
- Explore vector journeys in shapes
- Explore quadrilaterals using vectors
 - Understand parallel vectors



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Year 10 | Spring Term 3 | Vectors



Vectors

Small Steps

Explore collinear points using vectors

Use vectors to construct geometric arguments and proofs





Year 10 | Spring Term 4 | Ratios and Fractions



Ratios and Fractions

Small Steps

Compare quantities using a ratio	R
Link ratios and fractions	R
Share in a ratio (given total or one part)	R
Use ratios and fractions to make comparisons	
Link ratios and graphs	R
Solve problems with currency conversion	
Link ratios and scales	R
Use and interpret ratios of the form $1:n$ and $n:1$	
Solve 'best buy' problems	
Combine a set of ratios	
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Ratios and Fractions

Small Steps

- Link ratio and algebra
- Ratio in area problems
- Ratio in volume problems
- Mixed ratio problems





Year 10 | Spring Term 5 | Percentages & Interest



Percentages & Interest

Small Steps

Convert and compare fractions, decimals and percentages	R
Work out percentages of amounts (with and without a calculator)	R
Increase and decrease by a given percentage	R
Express one number as a percentage of another	R
Calculate simple and compound interest	
Repeated percentage change	
Find the original value after a percentage change	R
Solve problems involving growth and decay	



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Percentages & Interest

Small Steps



Solve problems involving percentages, ratios and fractions





Year 10 | Spring Term 6 | Probability

Probability

Small Steps





Year 10 | Spring Term 6 | Probability



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Probability

Small Steps

- Use tree diagrams for dependent events
 - Construct and interpret conditional probabilities (Tree diagrams)
- Construct and interpret conditional probabilities (Venn diagrams and two-way tables)





Year 10 | Summer Term 1 | Delving into Data





Delving into data

Small Steps

Construct histograms	H
Interpret histograms	H
Find and interpret averages from a list	R
Find and interpret averages from a table	R
Construct and interpret time series graphs	R
Construct and interpret stem-and-leaf diagrams	
Construct and interpret cumulative frequency diagrams	H
Use cumulative frequency diagrams to find measures	H
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Non-calculator methods

Small Steps

Mental/written methods of integer/decimal addition and subtraction	R
Mental/written methods of integer/decimal multiplication and division	R
The four rules of fraction arithmetic	R
Exact answers	
Rational and irrational numbers (convert recurring decimals here)	H
Understand and use surds	H
Understand and use surds Calculate with surds	e e
Understand and use surds Calculate with surds Rounding to decimal places and significant figures	H H R
Understand and use surds Calculate with surds Rounding to decimal places and significant figures denotes Higher Tier GCSE content	H H R



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Non-calculator methods

Small Steps

- Estimating answers to calculations
- Understand and use limits of accuracy
- Upper and lower bounds
- Use number sense
- Solve financial maths problems
- Break down and solve multi-step problems



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Year 10 | Summer Term 3 | Types of Number and Sequences



Types of Number and Sequences Small Steps

Understand the difference between factors and multiples	R
Understand primes and express a number as a product of its prime factors	R
Find the HCF and LCM of a set of numbers	R
Describe and continue arithmetic and geometric sequences	
Explore other sequences	
Describe and continue sequences involving surds	H
Find the rule for the $n^{ m th}$ term of a linear sequence	R
Find the rule for the $n^{ m th}$ term of a quadratic sequence	H
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Year 10 | Summer Term 4 | Indices and Roots



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Indices and Roots

Small Steps

- Square and Cube numbers
- Calculate higher powers and roots
- Powers of ten and standard form
- The addition and subtraction rules for indices
- Understand and use the power zero and negative indices
- Work with powers of powers
- Understand and use fractional indices
- Calculate with numbers in standard form



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Year 10 | Summer Term 5 | Expressions



Manipulating expressions

Small Steps

Simplify algebraic expressions	R
Use identities	
Add and subtract simple algebraic fractions	H
Add and subtract complex algebraic fractions	H
Multiply and divide simple algebraic fractions	H
Multiply and divide complex algebraic fractions	H
Form and solve equations and inequalities with fractions	
Solve equations with algebraic fractions	H



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Manipulating expressions

Small Steps

- Represent numbers algebraically
 - Algebraic arguments and proof

