|  | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 | Week 11 | Week 12 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Graphs |  |  |  |  |  | Algebra |  |  |  |  |  |
|  | Gradi lin | nts \& | Non gra |  | Using | raphs | Expanding \& factorising |  | Changing the subject |  | Functions |  |
|  | Reasoning |  |  |  |  |  | Revision and Communication |  |  |  |  |  |
|  | Multip | cative | Geom | etric | Algebraic |  | Transforming\& constructing |  |  |  | Show that... |  |
| $\begin{aligned} & \grave{\bar{\omega}} \\ & \stackrel{y}{E} \\ & \text { हु } \end{aligned}$ | Revision |  |  |  |  |  | Examinations |  |  |  |  |  |

## Year 11 | Autumn Term 1 | Gradients \& lines

## Gradients \& lines

## Small Steps

- Equations of lines parallel to the axis
- Plot straight line graphs
- Interpret $y=m x+c$
- Find the equation of a straight line from a graph (1)
- Find the equation of a straight line from a graph (2)
- Equation of a straight-line graph given one point and gradient
- Equation of a straight-line graph given two points
- Determine whether a point is on a line
(H) denotes Higher Tier GCSE content

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

## Year 11 | Autumn Term 1 | Gradients \& lines

## Gradients \& lines

## Small Steps

- Solve linear simultaneous equations graphically

Recognise when straight lines are perpendicular
Find the equations of perpendicular lines
(H) denotes Higher Tier GCSE content

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

## Non-linear graphs

## Small Steps

- Plot and read from quadratic graphs
- Plot and read from cubic graphs
- Plot and read from reciprocal graphs
- Recognise graph shapes
- Identify and interpret roots and intercepts of quadratics
- Understand and use exponential graphs

Find and use the equation of a circle centre $(0,0)$
Find the equation of the tangent to any curve
(H) denotes Higher Tier GCSE content

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## Year 11 | Autumn Term 3 | Using Graphs

## Using graphs

## Small Steps

- Reflect shapes in given lines
- Construct and interpret conversion graphs
- Construct and interpret other real-life straight line graphs
- Interpret distance/time graphs
- Construct distance/time graphs
- Construct and interpret speed/time graphs
- Construct and interpret piece-wise graphs
- Recognise and interpret graphs that illustrate direct and inverse proportion
(H) denotes Higher Tier GCSE content

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## Year 11 | Autumn Term 3 | Using Graphs

## Using graphs

## Small Steps

Find approximate solutions to equations using graphs
Estimate the area under a curve
(H) denotes Higher Tier GCSE content

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## Expanding and factorising

## Small Steps

- Expand and factorise with a single bracket
- Expand binomials
- Factorise quadratic expressions
- Factorise complex quadratic expressions
- Solve equations equal to 0
- Solve quadratic equations by factorisation
- Solve complex quadratic expressions by factorisation

Complete the square
(H) denotes Higher Tier GCSE content

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## Year 11 | Autumn 4 | Expanding and factorising

## Expanding and factorising

## Small Steps

## Solve quadratic equations using the quadratic formula

(H) denotes Higher Tier GCSE content

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

## Changing the subject

## Small Steps

- Solve linear equations
- Solve inequalities
- Form and solve equations and inequalities in the context of shape
- Change the subject of a simple formula
- Change the subject of a known formula
- Change the subject of a complex formula
- Change the subject where the subject appears more than once

Solve equations by iteration
(H) denotes Higher Tier GCSE content

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## Year 11 | Autumn Term 6| Functions

## Functions

## Small Steps

- Use function machines
- Substitute into expressions and formulae
- Use function notation
- Work with composite functions
- Work with inverse functions
- Graphs of quadratic functions
- Solve quadratic inequalities
- Understand and use trigonometric functions
(H) denotes Higher Tier GCSE content

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

## Year 11 | Spring Term 1 | Multiplicative Reasoning

## Multiplicative Reasoning

## Small Steps

- Use scale factors
- Understand direct proportion
- Construct complex direct proportion equations
- Calculate with pressure and density
- Understand inverse proportion
- Construct inverse proportion equations
- Ratio problems
(H) denotes Higher Tier GCSE content

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

## Year 11 | Spring Term 2 | Geometric Reasoning

## Geometric Reasoning

## Small Steps

- Angles at points
Angles in parallel lines and shapes ..... R
- Exterior and interior angles of polygons
- Proving geometric facts
- Solve problems involving vectors
- The first four circle theorems

Angle between a radius and a chord
Angle between a radius and a tangent
(H) denotes Higher Tier GCSE content

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

## Year 11 | Spring Term 2 | Geometric Reasoning

## Geometric Reasoning

## Small Steps

- Two tangents from a point

Alternate segment theorem
Pythagoras' theorem and trigonometrical ratios
(H) denotes Higher Tier GCSE content

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

## Year 11 | Spring Term 3 | Algebraic Reasoning

## Algebraic Reasoning

## Small Steps

- Simplify complex expressions
- Find the rule for the $n^{\text {th }}$ term of a linear sequence
- Find the rule for the $n^{\text {th }}$ term of a quadratic sequence
- Use rules for sequences
- Solve linear simultaneous equations
- Solve simultaneous equations with one quadratic
- Formal algebraic proof

Inequalities in two variables
(H) denotes Higher Tier GCSE content

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

## Year 11 | Spring Term 4 | Transforming and Constructing

## Transforming and Constructing

## Small Steps

- Perform and describe line symmetry and reflection
- Perform and describe rotation/rotational symmetry
- Perform and describe translations of shapes
- Perform and describe enlargements of shapes
- Perform and describe negative enlargements of shapes
- Identify transformations of shapes
- Perform and describe a series of transformations of shapes
- Identify invariant points and lines
(H) denotes Higher Tier GCSE content

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

## Year 11 | Spring Term 4 | Transforming and Constructing

## Transforming and Constructing

## Small Steps

- Perform standard constructions using ruler and protractor or ruler and compasses
- Solve loci problems
- Understand and use trigonometrical graphs
- Sketch and identify translations of the graph of a given function
- Sketch and identify reflections of the graph of a given function
(H) denotes Higher Tier GCSE content

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

## Year 11 | Spring Term 5 | Listing and Describing

## Listing and Describing

## Small Steps

- Work with organised lists
- Sample spaces and probability
- Use the product rule for counting
- Complete and use Venn diagrams
- Construct and interpret plans and elevations
- Use data to compare distributions
- Interpreting scatter diagrams
(H) denotes Higher Tier GCSE content

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

## Year 11 | Spring Term 6 | Show that

## Show that

## Small Steps

- "Show that" with number
- "Show that" with algebra
- "Show that" with shape
- "Show that" with angles
- "Show that" with data
- "Show that" with vectors
"Show that" with congruent triangles
Formal proof with congruent triangles
(H) denotes Higher Tier GCSE content

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