



# Maths Learning Journey Map

## Year 9

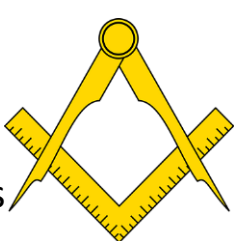


### SKILLS DEVELOPED

#### Year 9 Survival Top Tips

<b>Tip 1</b>	Develop your study skills
<b>Tip 2</b>	Solidify knowledge of key concepts
<b>Tip 3</b>	Use the revision lists to help you revise for the half termly tests
<b>Tip 4</b>	Keep on top of work to avoid falling behind
<b>Tip 5</b>	Ask your teacher for help to confirm your understanding

➤ Congruence and similarity  
 ➤ Pythagoras  
 ➤ Trigonometry  
 ➤ Transformations  
 ➤ 2D representations of 3D shapes



YEAR 9  
Half Term 6

Move on to Year 10  
 Summer Holidays  
 Next Level

YEAR 9  
Half Term 5

- Simultaneous equations
- Rearranging formulae
- Collecting and representing data

**Positive correlation**  
As one variable increases so does the other variable.



**Negative correlation**  
As one variable increases the other variable decreases.

**No correlation**  
There is no relationship between the two variables.

$4.2 \times 10^9$

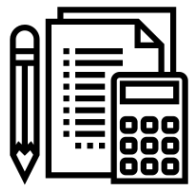
Must be 1 to 10 (but not 10!)      Must be x 10  
 Must be an Integer

- Circle theorems
- Expand and factorise quadratics
- Solving quadratics
- Linear graphs

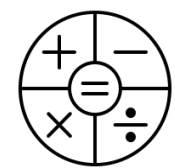



YEAR 9  
Half Term 4

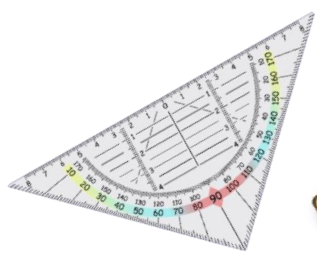

YEAR 9  
Half Term 3



- Recurring decimals to fractions
- Algebraic fractions 1
- Circumferences, area, arcs and sectors



- Indices
- Standard form
- Surds
- Angles
- Scale diagrams and bearings

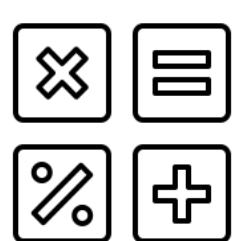
YEAR 9  
Half Term 2

### CURRICULUM OVERVIEW



$$1 + 1 = 2$$

$$2 \times 2 = 4$$



- Basic number
- Factors and Multiples
- Basic algebra
- Equations
- Perimeter and area

YEAR 9  
Half Term 1



# Maths Learning Journey Map

## Year 10



### SKILLS DEVELOPED

Year 10 Survival Top Tips	
<b>Tip 1</b>	Organise your learning and revision
<b>Tip 2</b>	Time management – do a little bit often
<b>Tip 3</b>	Use the revision lists to help you revise for the half termly tests
<b>Tip 4</b>	Try and find different ways to revise to keep it interesting
<b>Tip 5</b>	Ask your teacher for help to confirm your understanding

Move on to Year 11



Summer Holidays



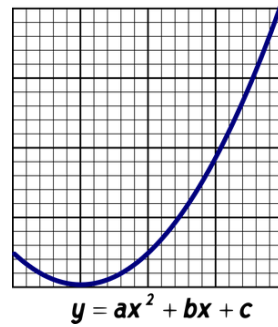
Next Level



**YEAR 10**

Half Term 6

- Similar triangles
- Vectors
- Volume
- Pre-calculus
- Constructions and loci
- Measures



**YEAR 10**

Half Term 5

- Ratio and proportion
- Direct and inverse proportion
- Gradients and rates of change
- Growth and decay
- Properties of polygons



- Algebraic fractions 2
- Inequalities including graphs and set notation
- Probability



**YEAR 10**

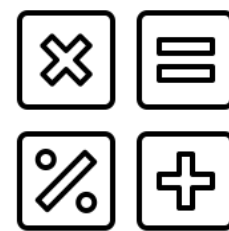
Half Term 4

**YEAR 10**

Half Term 3



- Sequences
- Functions
- Numerical methods and iteration
- Proof



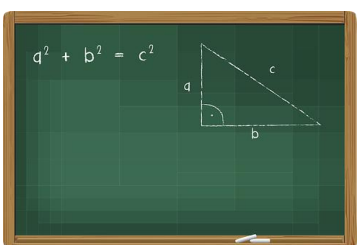
- Further quadratics and their graphs
- Sketching graphs
- Transforming functions



**YEAR 10**

Half Term 2

CURRICULUM OVERVIEW



$$\frac{\sqrt{2}}{2} \text{ or } \frac{1}{\sqrt{2}}$$

- Trigonometry recap and extension
- Trigonometric graphs
- Sine and cosine rule
- Calculating percentages
- Rearranging formulae and identities

**YEAR 10**

Half Term 1





# Maths Learning Journey Map

## Year 11



### SKILLS DEVELOPED

Year 11 Survival Top Tips	
<b>Tip 1</b>	Make a revision plan and stick to it
<b>Tip 2</b>	Create a revision plan that's achievable.
<b>Tip 3</b>	Make concise and clear class notes
<b>Tip 4</b>	Practice using past papers
<b>Tip 5</b>	Ask your teacher for help to confirm your understanding

What is revision?

➤ REVISION

Re-vision

Again See

GCSE Results day ★★★★★

A-Level/ college ★★★★★

the future ★★★★★

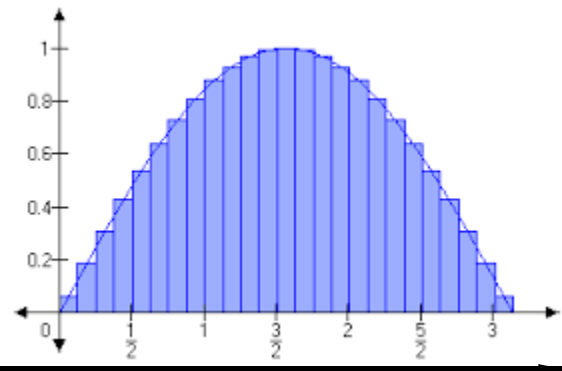
**YEAR 11**

Half Term 6

**YEAR 11**

Half Term 5

- Sequences
- Factor theorem
- Basic geometry



➤ Simultaneous equations

➤ Functions

➤ Sketching functions and inequalities

➤ Further trigonometry

Quadratic Transformations

$f(x) = a(x-h)^2 + k$

- $a$  indicates a reflection in the  $x$ -axis and/or a vertical stretch or shrink
- $h$  indicates a horizontal translation
- $k$  indicates a vertical translation

Horizontal Translation:  $h > 0$  slides right,  $h < 0$  slides left

Vertical Translation:  $k > 0$  slides up,  $k < 0$  slides down

Reflection over the  $x$ -axis:  $a < 0$

Vertical Stretch or Compression:  $|a| > 1$  vertical stretch (upside),  $0 < |a| < 1$  vertical compression (inside)

Image of a calculator showing a calculation:  $d/dx (x^2 + 17x - 2) = 2.169766667 \times 10^1$

**YEAR 11**

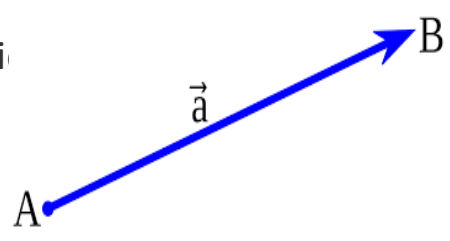
Half Term 4

**YEAR 11**

Half Term 3



- Linear and quadratic equations
- Algebraic fractions
- Manipulation and proof
- Index laws
- Trigonometry and Pythagoras



➤ Matrix multiplication

➤ Matrix transformations

➤ Further Maths basic number

➤ Further Maths basic algebra

➤ Surds

Equation of a Circle:  $x^2 + y^2 = r^2$

center  $(0, 0)$

point  $(x, y)$

$a^2 + b^2 = c^2$

**YEAR 11**

Half Term 2

CURRICULUM OVERVIEW

**CIRCLE THEOREMS**

ANGLE RELATIONSHIPS WITHIN CIRCLES

- The angle at the centre is twice the angle at the circumference
- The angle from a diameter is  $90^\circ$
- Angles in the same segment are equal
- The angle between a tangent and a radius is  $90^\circ$
- Opposite angles in a cyclic quadrilateral add to  $180^\circ$
- The angle between a tangent and a chord is equal to the angle in the alternate segment

**SOH CAH TOA**

**S**in  $^\circ$  = **O**pposite / **H**ypotenuse

**C**os  $^\circ$  = **A**djacent / **H**ypotenuse

**T**an  $^\circ$  = **O**pposite / **A**djacent

- Intro to coordinate geometry
- Equations of lines and circles
- Introductory calculus
- Calculus applications

**YEAR 11**

Half Term 1