Year 11 Higher Scheme of Learning

MODULE 1

Bishop Chadwick
Catholic Education Trust

Bespoke revision

Functions & transforming graphs

Vector notation

Circle theorems, equations & graphs

Complex trigonometry

Statistics

Year 11

Construction & loci

Proportion & graphs

Functions & further algebra

Similarity & congruence

Perimeter, area & volume

Averages

Angles & Transformations

Constructions & bearings

Probability & diagrams

Graphs

Year 10

Fractions & percentages

Sequences

Pythagoras & Trigonometry

Equations, quadratics & Inequalities

Proportion & compound measures

Data handling

Handling data & measures of location

Angles in parallel lines, lines & polygons

Fractions & percentages

Algebra: including substituting & brackets

Year 9

Sequences & Indices

Number; including index laws

Area of trapezia & circles; Line symmetry & reflections

Standard form & number sense

Brackets, equations & inequalities

Sets & probability

Proof

Multiplicative reasoning

Working in Cartesian plane

Ratio & proportion

Year 8

Representing data, tables & probability

Fraction arithmetic

Geometric reasoning

Prime numbers

Ratio & scale

Multiplying & dividing fractions

Operations with equations & directed numbers

Fraction & % of amounts

Fractions, decimals & percentages

Use and understand algebraic notation

Place value and ordering, including decimals

Year 7

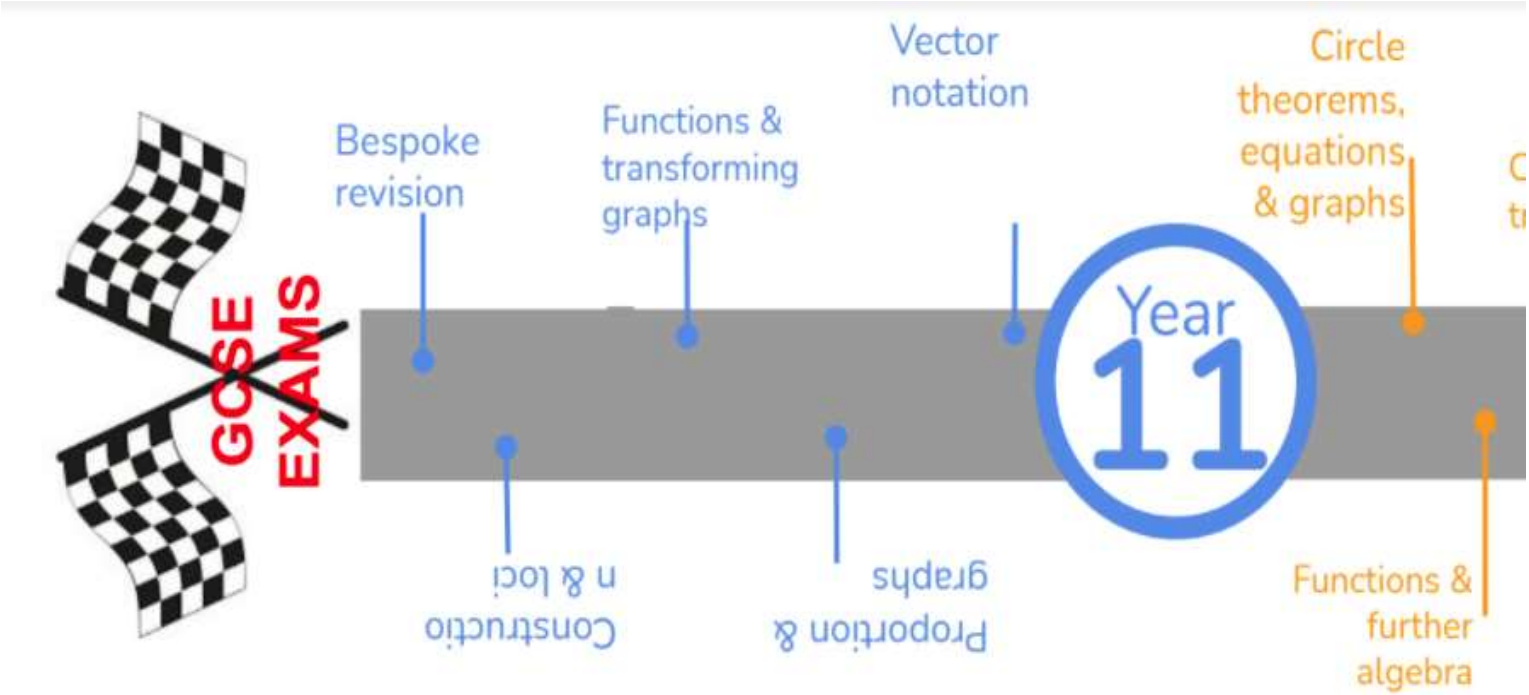
Problem solving with four main operations

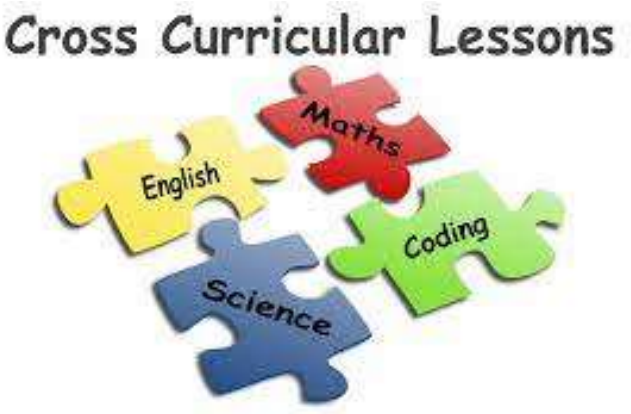
Equality & Equivalence - solving equations

Sequences

Extend/Higher 2021/22
(includes Y11 bounce back)

This is what your child will be taught as part of the GCSE higher course in Year 11 in their MATHS lessons.

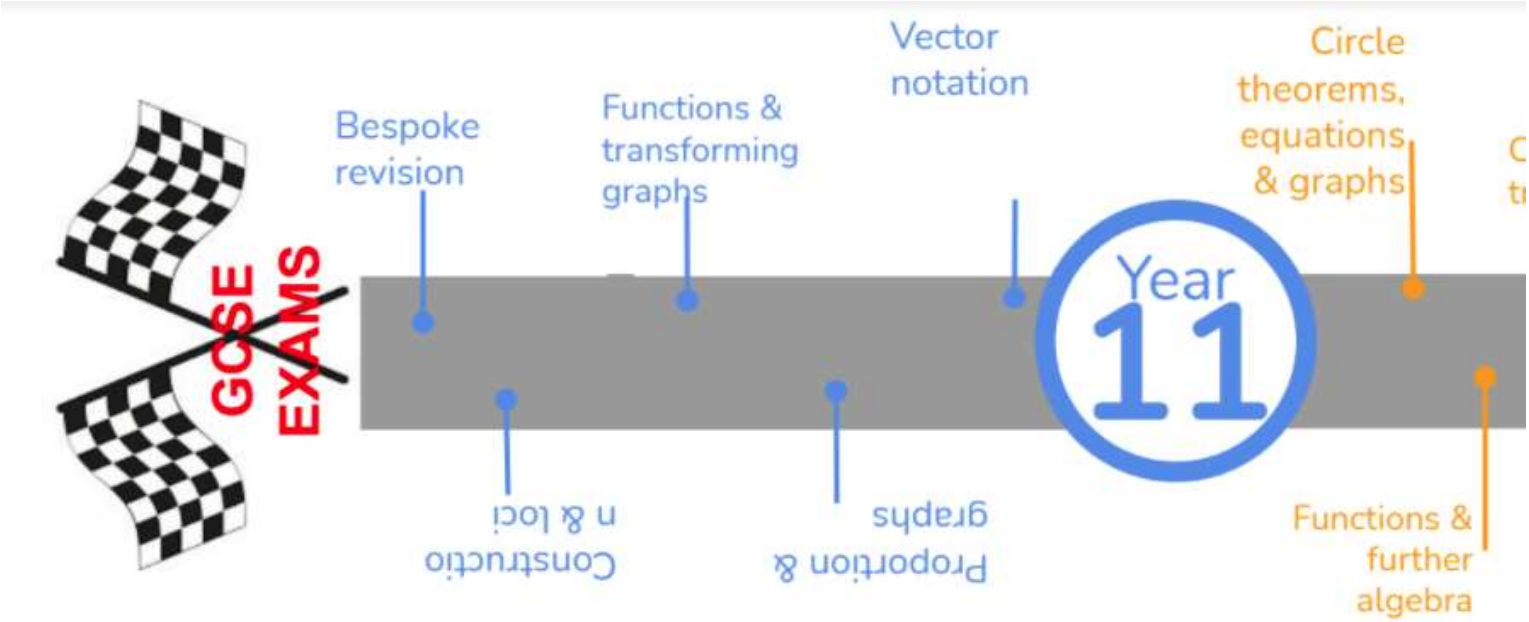




They will have also have specific lessons linked to other subjects and a diet of retrieval built into their lessons.

In Year 11 Module 1 your child will study only two topics due to time being allocated for revision and mock examinations. The two topics are:

- Circle Theorems
- Functions and Further algebra

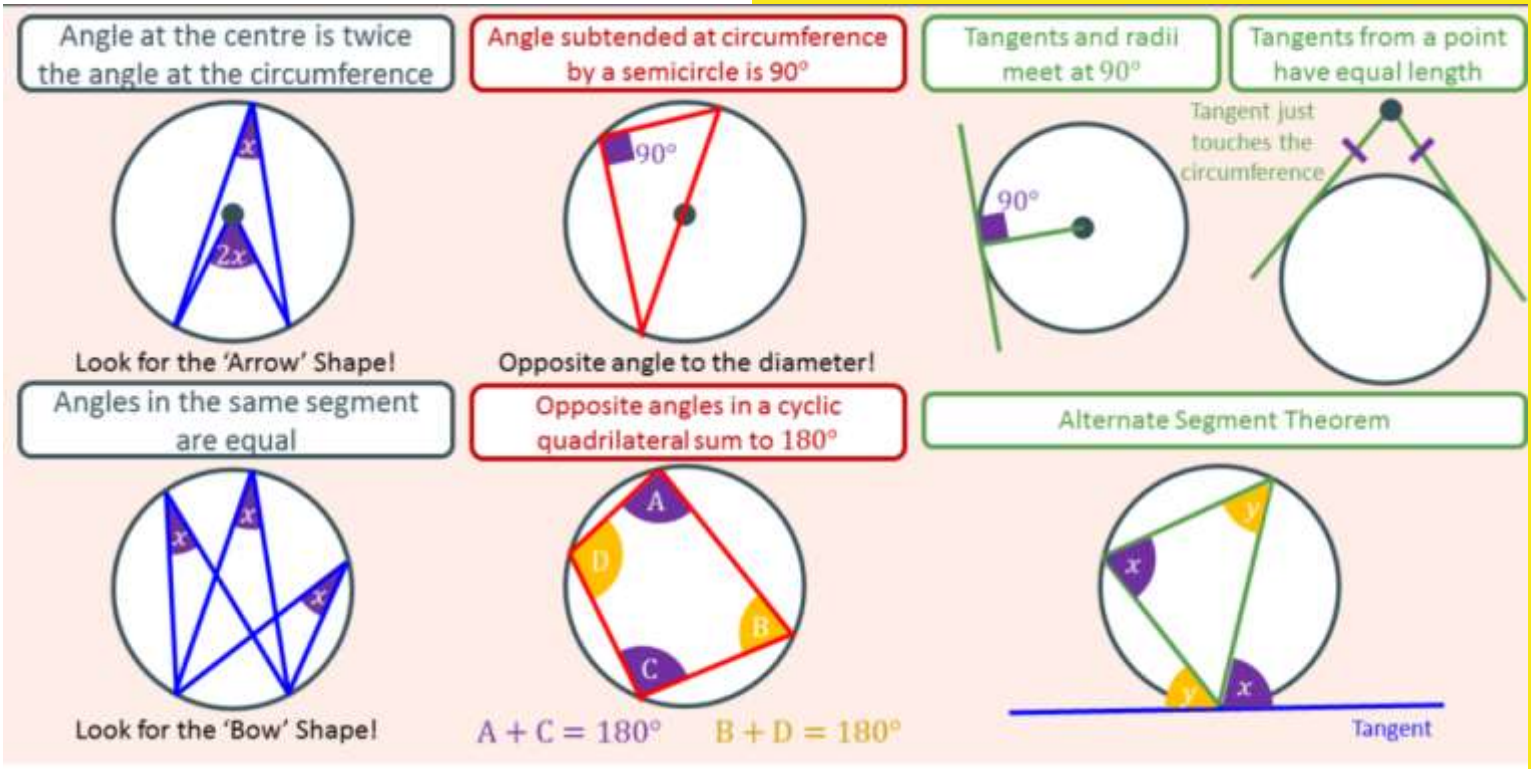


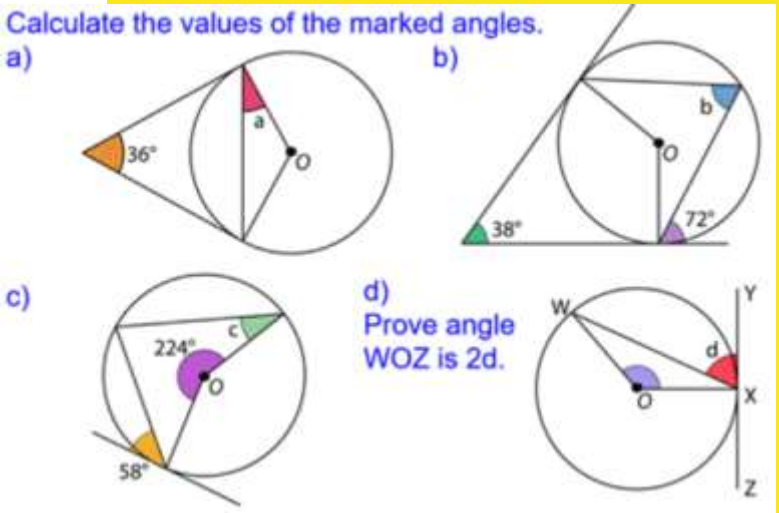
The Year 11 scheme of learning includes elements of our 'bounce back' scheme, which takes into account the periods of lockdown.

Circle Theorems

In this Unit students will learn

- How to recognise each Circle Theorem
- How to apply each Circle Theorem
- How to prove each Circle Theorem



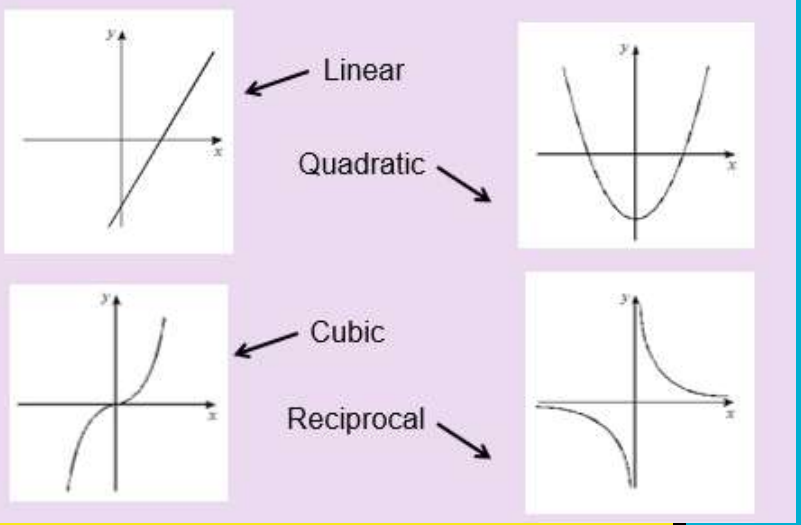


In the algebra unit your child will study:

- Expanding cubic functions
- Types of graphs
- Composite functions
- Rearranging formulae
- Algebraic fractions
- Algebraic proof

Unit 2: FUNCTIONS and FURTHER ALGEBRA

Types of Graphs



Rearrange the formula $a = x + \frac{cx}{d}$ to make x the subject.

Method -

$a = x + \frac{cx}{d}$

$ad = dx + cx$ multiply both sides by d

$dx + cx = ad$ rearrange to get x's on the left

$x(d + c) = ad$ factorise

$x = \frac{ad}{d+c}$ divide by (d + c)

Sometimes it's helpful to **factorise before simplifying** an algebraic fraction.

Ex5 Simplify, $\frac{x+5}{2x+10}$

Solution

$\frac{x+5}{2x+10} = \frac{1\cancel{x+5}}{2(\cancel{x+5})} = \frac{1}{2}$

Factorise the denominator.

Replace with "1" when 'fully' cancelled.

Ex6 Simplify, $\frac{2x+10}{x+5}$

Solution

$\frac{2x+10}{x+5} = \frac{2(\cancel{x+5})}{\cancel{x+5}} = 2$

Factorise the numerator.

Ex7 Simplify,

Solution

[a] $\frac{3x+15}{x+5} = \frac{3(\cancel{x+5})}{\cancel{x+5}} = 3$

[b] $\frac{x+5}{3x+15} = \frac{1\cancel{x+5}}{3(\cancel{x+5})} = \frac{1}{3}$

Algebraic Proof

Corbettmaths

An even number: $2n$

An odd number: $2n+1$

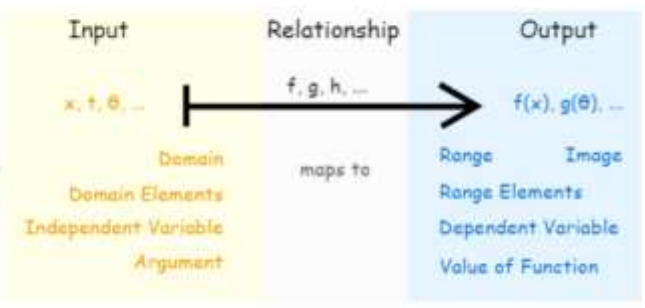
Three consecutive numbers: $n, n+1, n+2$

Three consecutive even numbers: $2n, 2n+2, 2n+4$

Three consecutive odd numbers: $2n+1, 2n+3, 2n+5$

Two even numbers: $2n$ $2n$

Two odd numbers: $2n+1$ $2n+1$



We recommend pupils have a Casio scientific calculator.
The Casio calculator featured is the one we use when demonstrating in lessons.

On our school website there is a calculation policy showing the methods we use for common operations. It can be found at: Our School > Policies