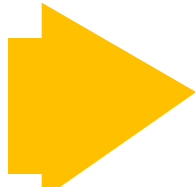# Mathematics Learning Journey

Prepares you for further study in:
Mathematics, Physics, Chemistry, Biology, Engineering, Psychology, Economics, Business

Prepares you for roles in:
Engineering, banking, insurance, accountancy, finance, business, statistics, data analysis, construction...

KIRTON ACADEMY

YEAR 11

Revision

𝑓x

Changing the subject

Non-linear graphs

Gradients and lines

Indices and roots

Algebra
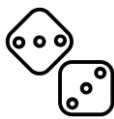
Graphs

Functions

Expanding and factorising

Using graphs

Manipulating expressions

Non calculator methods

Number

Types of number and sequences

Working with circles

Ratios and fractions

Probability

Σ
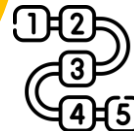
Angles and bearings

Geometry
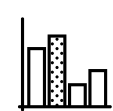
Proportions and proportional change

Delving into data

Vectors

Percentages and interest

Collecting, representing and interpreting data

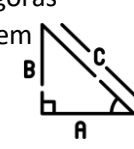Developing Algebra

Simultaneous equations

Trigonometry

Probability

Rates

Solving ratio and proportion problems

Pythagoras' Theorem

Similarity

YEAR 10

Representations

Reasoning with Proportion

Representing equations and inequalities

Congruence, similarity and enlargement

Algebraic representation

Enlargement and similarity

Rotation and translation

Reasoning with Geometry

Forming and solving equations

Constructions and Congruency

Numbers

Maths and money

Straight-line graphs

Reasoning with Algebra

Constructing in 2 and 3 dimensions

Reasoning with Number

Deduction

YEAR 9

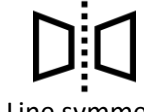Testing conjectures

Three dimensional shapes

Using percentages

%

The data handling cycle

Line symmetry and reflection

Angles in parallel lines and polygons

Standard index form

Indices

Brackets, equations and inequalities

Tables and probability

Measures of location

Reasoning with Data

Developing Geometry

Developing Number

Algebraic techniques

Representations

Area of trapezia and circles

Number sense

Fractions and percentages

Sequences

Constructing, measuring and using geometric notation

Prime numbers and proof

Representing data

Addition and subtraction of fractions

Developing Number sense

Ratio and scale

Multiplying and dividing fractions

Lines and Angles

Reasoning with Number

YEAR 8

Proportional Reasoning

Working in the Cartesian plane

Developing geometric reasoning

Sets and probability

Multiplicative change

Fractional thinking

Directed Number

Solve problems with addition, subtraction multiplication and division

Place value and ordering integers and decimals

Understand and use algebraic notation

YEAR 7

Four operations with directed number

Application of Number

Place Value and Proportion

Algebraic Thinking

welcome

Fractions and percentages of amounts

Fraction, decimal and percentage equivalence

Equality and equivalence

Sequences

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What we learn and when we learn it!

Year	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
7	**Algebraic Thinking** · Sequences · Understand and use algebraic notation · Equality and equivalence	**Place value and proportion** · Place value and ordering integers and decimals · Fraction, decimal and percentage equivalence	**Applications of Number** · Solve problems with addition, subtraction multiplication and division · Fractions and percentages of amounts	**Directed number** · Four operations with directed number Fractional thinking · Addition and subtraction of fractions	**Lines and Angles** · Constructing, measuring and using geometric notation · Developing geometric reasoning	**Reasoning with Number** · Developing Number sense · Sets and probability · Prime numbers and proof
8	**Proportional reasoning** · Ratio and scale · Multiplicative change · Multiplying and dividing fractions	**Representations** · Working in the Cartesian plane · Representing data · Tables and probability	**Algebraic techniques** · Brackets, equations and inequalities · Sequences · Indices	**Developing Number** · Fractions and percentages · Standard index form · Number sense	**Developing Geometry** · Angles in parallel lines and polygons · Area of trapezia and circles · Line symmetry and reflection	**Reasoning with Data** · The data handling cycle · Measures of location
9	**Reasoning with Algebra** · Straight-line graphs · Forming and solving equations · Testing conjectures	**Constructing in 2 and 3 dimensions** · Three dimensional shapes · Constructions and Congruency	**Reasoning with Number** · Numbers · Using percentages · Maths and money	**Reasoning with Geometry** · Deduction · Rotation and translation · Pythagoras' Theorem	**Reasoning with Proportion** · Enlargement and similarity · Solving ratio and proportion problems · Rates	**Representations** · Probability · Algebraic representation · Revision Handling data, error intervals, sequences
10	**Similarity** · Congruence, similarity and enlargement · Trigonometry	**Developing Algebra** · Representing equations and inequalities · Simultaneous equations	**Geometry** · Angles and bearings · Working with circles · Vectors	**Proportions and proportional change** · Ratios and fractions · Percentages and interest · Probability	**Delving into data** · Collecting, representing and interpreting data · Non calculator methods	**Number** · Types of number and sequences · Indices and roots · Manipulating expressions
11	**Graphs** · Gradients and lines · Non-linear graphs ·Using graphs	**Algebra** · Expanding and factorising · Changing the subject · Functions	**Revision Reasoning** · Multiplicative · Geometric · Algebraic	**Revision Communicate** · Transforming and constructing ·Listing and describing · Show that	**Revision** · · ·	**Revision** · · ·