

# MATHEMATICS

## Year 11 Curriculum road map (H)

### AUTUMN TERM

#### 1. GRADIENTS & LINES, 2. NON-LINEAR GRAPHS

WORK WITH GRADIENTS, INTERCEPTS AND COORDINATES, FINDING THE EQUATION OF A LINE GIVEN DIFFERENT VALUES.

**(H): EXPLORE PERPENDICULAR LINES & THEIR EQUATIONS.**

PLOT & READ FROM QUADRATIC, CUBIC AND RECIPROCAL GRAPHS, IDENTIFYING ROOTS, INTERCEPTS & GRAPH SHAPES.

**(H): UNDERSTAND & USE EXPONENTIAL GRAPHS, EQUATION OF CIRCLES & TRIGONOMETRICAL GRAPHS.**

**HT1**

### AUTUMN TERM

#### 3. USING GRAPHS, 4. MULTIPLICATIVE REASONING

CONSTRUCT & INTERPRET PIECEWISE & DISTANCE-TIME GRAPHS; FIND APPROXIMATE SOLUTIONS TO EQUATIONS USING GRAPHS.

**(H): CONSTRUCT & INTERPRET VELOCITY-TIME GRAPHS, USING TANGENTS TO ESTIMATE RATES OF CHANGE AND ESTIMATING AREAS UNDER CURVES.**

WORK WITH PROPORTION, SOLVING CURRENCY & VALUE PROBLEMS.

**(H): CONSTRUCT DIRECT AND INVERSE PROPORTION EQUATIONS.**

**HT2**

### SPRING TERM

#### 5. ALGEBRAIC MANIPULATION, 6. QUADRATICS (H)

EXPAND & FACTORISE BRACKETS, SOLVE EQUATIONS INCLUDING QUADRATICS AND CHANGE THE SUBJECT OF A FORMULA.

**(H): EXPAND TRIPLE BRACKETS, CHANGE THE SUBJECT WHEN IT APPEARS MORE THAN ONCE AND SOLVE EQUATIONS BY ITERATION.**

**(H): SOLVE QUADRATIC EQUATIONS BY FACTORISING, COMPLETING THE SQUARE AND USING THE FORMULA; SKETCH QUADRATIC FUNCTIONS, SOLVE QUADRATIC, SIMULTANEOUS EQUATIONS & INEQUALITIES.**

**HT3**

### SPRING TERM

#### 7. GEOMETRIC REASONING, 8. ALGEBRAIC FRACTIONS (H), 9. FUNCTIONS & PROOF (H)

WORK WITH ANGLES - USING RULES, PARALLEL LINES, POLYGONS, BEARINGS, PYTHAGORAS AND TRIGONOMETRY.

**(H): IDENTIFY, USE AND PROVE THE CIRCLE THEOREMS; SOLVE COORDINATE GEOMETRY PROBLEMS INVOLVING CIRCLES.**

**(H): ADD, SUBTRACT, MULTIPLY & DIVIDE ALGEBRAIC FRACTIONS**

**(H): USE FUNCTION NOTATION WITH COMPOSITE & INVERSE FUNCTIONS; REPRESENT NUMBERS ALGEBRAICALLY TO PROVE STATEMENTS.**

**HT4**

### SUMMER TERM

#### 10. TRANSFORMING & CONSTRUCTING, REVISION & FINAL GCSE EXAMINATIONS

PERFORM & DESCRIBE TRANSFORMATIONS: TRANSLATIONS, ROTATIONS, REFLECTIONS AND ENLARGEMENTS; SOLVE LOCI PROBLEMS

**(H): PERFORM NEGATIVE ENLARGEMENTS, IDENTIFY INVARIANT POINTS**

**HT5**

### SUMMER TERM

FINAL GCSE EXAMINATIONS

**HT6**