Maths at Elemore Hall School

Intent

The curriculum in Mathematics is designed to meet the needs of all pupils at Elemore Hall School. The scheme of work ensures that the curriculum is covered, however we are aware that some pupils might have gaps in their knowledge therefore provision is made for the curriculum to be flexible in order to close gaps in knowledge for whole classes or on an individual basis through 1:1 intervention. Emphasis is placed on working as a team of Mathematics teachers, LSAs and Numeracy intervention coordinator to identify and address the gaps in knowledge.

The curriculum is sequenced in such a way as to ensure maximum progress by building upon prior learning and putting in place intervention where the foundations are not yet in place or where gaps are identified. Mathematics is a sequential subject that must be built upon solid foundations or there is an increased chance of misconceptions being developed and so closing the gaps is vital and a key part of the ethos of the department. The curriculum is designed to allow all pupils to progress to their maximum potential with all completing the basic foundation content. More able pupils access additional foundation content with the ambition to access higher content where possible. Due to the potential for some pupils to suffer from anxiety in examination situations, Entry Level Certificate is offered to all pupils as well as GCSE.

The Mathematics curriculum requires pupils to be both literate and numerate and as such, both play a part in every lesson. As well as key words being shared and discussed with pupils, all pupils are encouraged to speak the “language of maths”, including mathematical terminology as well as order of operations. Words that are used differently in Mathematics such as “chord” are discussed as is their use in other subjects.

Implementation

Mathematics is a timetables subject for all pupils throughout the school.

1:1 targeted intervention is available to support pupils to fill identified gaps in learning and to assist Y7 pupils to ‘Catch up’.

The subject leader is responsible for designing and monitoring the curriculum delivery as well as keeping up to date with subject developments. The department participates fully in all internal monitoring systems and the monitoring of progress within the subject is consistent and available to all staff. As and when required, professional development needs are identified and addressed and good practice is actively encouraged to be shared. A number of resources are available including mymaths, mathswatch and resources developed by teachers. These are designed to support the implementation of the AQA Mathematics curriculum. AQA resources are extensively used. The resources are differentiated to ensure that the level of challenge is appropriate for all pupils.

Pupils are assessed regularly on a termly or half termly basis and these assessments are designed to show the progress at a micro level from the previously assessed baseline. Progress can be different for each pupil and progress is celebrated with the pupils and based upon their own targets. Assessments provide a framework for intervention for each pupil and inform schemes of work which are designed to be flexible based upon need. Assessments are easy to understand and moderated for consistency. They are also highly relevant to the learning of all pupils and link directly to the desired outcomes at the end of Key Stage 4. As the curriculum is flexible, the expectations that teachers will adapt their lessons based upon the needs of each class and each pupil but this should not detract from the overall coverage of the Mathematics curriculum.

Impact

Pupil outcomes are monitored and all pupils are expected to make progress in lessons and overall. Ambitious targets are set for pupils to help them achieve the best possible results in accreditation at the end of Key Stage 4. Whilst this objective is clear and vital to all of our groups, the flexibility and individual intervention built into the design of the curriculum ensures parity for all groups. Due to the support given to pupils in lessons the groups of pupils should not be distinguishable from each other as all needs are addressed to provide equal opportunities and no inequity between groups.

The importance of achieving a good qualification in Mathematics is stressed to pupils throughout their time at the school. Pupils are made aware of the impact that this has on their future post16 choices.

Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
7	Properties of number. Rounding	Angles Measures Time	Decimals Co-ordinates Properties of shapes	Fractions Percentages Area & Perimeter	Symmetry Transformations Sequences Functions	Probability Data Handling Representing Data
8	Properties of number. Rounding Ratio	Angles Measures Time Powers & Roots	Decimals Co-ordinates Properties of shapes	Fractions Percentages Area & Perimeter 3D Shapes & Volume.	Symmetry Transformations Sequences Functions Expressions	Probability Data Handling Representing Data
9	Properties of number, Rounding Ratio	Angles Measures Time Powers & Roots	Decimals Co-ordinates Properties of shapes Problem solving	Fractions Percentages Area & Perimeter 3D Shapes/Volume. Constructions	Symmetry Transformations Sequences Functions/Expressions More algebra	Probability Data Handling Representing Data
10	Basic number. Systems of measurement. Statistics: Charts, tables and averages.	Angles: Facts, polygons, parallel lines, bearings. Multiples, factors, primes, squares and roots.	Rounding and approximation of calculations. Calculating with decimals, fractions, converting and use of calculator.	Straight line graphs, gradient, equations of lines. Algebra: Simplify and substitute, factorise, rearrange formulae.	Ratio, speed distance and time. Direct proportion, best buys. Perimeter and area of shapes and compound shapes.	Transformations. Symmetry, vectors Probability, outcomes, experimental probability, expectation.
11	3D shapes. Volume & surface area of cuboids, prisms and cylinders. Solving equations. Percentages. Compound measures.	Further percentages. Direct proportion. Pie charts, scatter diagrams and grouped data. Construction, loci.	Geometry: further 3D volumes and surface areas. Number sequences and nth term. Pythagoras' theorem, trig. **Revision.**	Congruence and similarity. Probability, combined events and tree diagrams. Indices and standard form. **Revision.**	Simultaneous equations, inequalities. Non-linear graphs. **Revision.**	**Revision.**

At the beginning of each academic year all pupils complete the Wide Range Achievement Test (WRAT) which assesses the underlying ability of all the pupils. In addition to this, pupils in year 7

are assessed using data from year 6 SATs papers to analyse their strengths as well as gaps in their knowledge while providing a baseline of their starting point at Elemore Hall School.

Throughout each academic year, assessments provide details on gaps in pupil knowledge and the bulk of teaching will be designed to close these gaps before moving on to the next topic. As such there may be some planned discrepancies from this overview to ensure we meet the needs of all pupils.

Accreditation

GCSE Mathematics (AQA)

Paper 1:	**Paper 2:**	**Paper 3:**
What's assessed Content from any part of the specification may be assessed	**What's assessed** Content from any part of the specification may be assessed	**What's assessed** Content from any part of the specification may be assessed
How it's assessed written exam: 1 hour 30 minutes 80 marks non-calculator 33⅓% of the GCSE Mathematics assessment	**How it's assessed** written exam: 1 hour 30 minutes 80 marks calculator allowed 33⅓% of the GCSE Mathematics assessment	**How it's assessed** written exam: 1 hour 30 minutes 80 marks calculator allowed 33⅓% of the GCSE Mathematics assessment
Questions A mix of question styles, from short, single-mark questions to multi-step problems. The mathematical demand increases as a pupil progresses through the paper.	**Questions** A mix of question styles, from short, single-mark questions to multi-step problems. The mathematical demand increases as a pupil progresses through the paper.	**Questions** A mix of question styles, from short, single-mark questions to multi-step problems. The mathematical demand increases as a pupil progresses through the paper.

Entry Level Certificate

This qualification is linear. Linear means that pupils submit all components that form the assessment at the end of the course. Pupils should submit for assessment and moderation evidence from **eight** components as follows:

Subject content

Component 1: properties of number

Component 2: the four operations

Component 3: ratio

Component 4: money

Component 5: the calendar and time

Component 6: measures

Component 7: geometry

Component 8: statistics

Assessments

Each complete portfolio should contain eight components of work made up of between four and eight external assignments. Any remaining components should be made up of internally set classwork.

All components are internally assessed (teacher marked) and then moderated by AQA. Each component is marked out of 30, giving a total mark out of 240 for the whole portfolio.

Externally set

Evidence for a **minimum** of four components out of the eight must be in response to an externally set assignment. AQA will set assignments for each of the eight components, with each assignment covering Entry 1, 2 and 3. Three versions of each assignment will be available to download via the secure area of the AQA website, e-AQA.

Internally set

Evidence for a **maximum** of four components should be from class work which has been set and assessed by the teacher in response to the outcomes detailed in the Subject content part of this specification or from completion of the worksheets provided as additional resources by AQA. These outcomes cover work at Entry 1, 2 and 3. In some instances an Entry 3 outcome may subsume an Entry 1 and/or an Entry 2 outcome. In such cases, if the Entry 3 outcome is achieved, the subsumed outcomes can be credited as complete. Please see the Appendices part of this specification, for details of subsumed outcomes in each of the components.

Additional Support

Numeracy withdrawal for targeted pupils in order to close the gaps in pupil knowledge.

Targeted pupil within lessons are given additional LSA support.

Some pupils given multiplication squares to support learning and to allow pupils to access certain topics.

High quality Scientific Calculators available for all pupils at Key Stage 4.

Revision packs for year 11 provided during Culture lessons.

Individual gap analysis for every pupil.

Focused gap analysis with supporting materials provided for year 11 pupils.

Mathswatch resources provided to all (year 11) pupils

Links with evening activities

Monday evening extra Maths with the aim of tackling additional foundation content.

Enrichment

Visits possible – Durham Maths Trail, Bletchley Park, Centre for Life etc.