

Newfield School Secondary Mathematics Policy

Departmental Overview

“Mathematics will be an exciting and innovative department with a creative programme of implementing a Maths curriculum that is not seen as a self-contained subject, but one in which students can apply Maths learning to all aspects of everyday life.”

Aims

Many children come to Newfield after experiencing failure in mathematics; therefore our primary aim is to enable pupils to derive pleasure and enjoyments from mathematics. We would hope to discourage the feeling of dread that the subject holds for some children through a use of practical approaches.

For the same reason we would aim to reinforce success and avoid failure by setting achievable goals, and looking for alternative methods, thus building confidence.

We would aim to show that maths is not an isolated subject but an integral part of school and life and life around us.

We aim to provide a firm foundation of basic skills alongside encouraging an investigative approach. From this we would hope to develop the skills of: -

- Selecting appropriate materials and methods
- Working systematically
- Recording and arriving at a satisfactory conclusion independently

Organisation

The school covers the whole age range from 5 to 16 years; therefore all four Key Stages of the National Curriculum are followed. All work is based on National Curriculum programmes of Study and Attainment Targets.

At Key Stage 3 work is through the interactive scheme of work and supported by text books and worksheets which allow for differentiation.

In addition to this pupils will receive lessons incorporating enrichment activities. These lessons involve problem solving and relate to maths in the real world.

At Key Stage 4 pupils will follow the AQA GCSE Maths with a 3 paper exam being sat at the end of the 2 year course. Some pupils may follow Functional Skills Level 1 and 2 in Maths.

Through regular monitoring and assessment if pupils are not deemed as achieving a grade at GCSE they will be entered an alternative examination which would take place in Year 11.

At key stage 3, pupils use interactive learning through the ActiveLearn online learning tool in lessons.

At all stages, every opportunity should be taken to encourage pupils to find mathematical links in lessons and activities other than maths.

Teaching and Learning Strategies

Generally new topics will be presented to a whole group. Thereafter, individual programmes will be prepared for each pupil with levelled work given which allows for the necessary differentiation. Pupils who lack confidence should be given a narrower programme of work, in order that they might have a sense of achievement. The more able children should be given work to stretch and challenge them. The schemes in use offer every opportunity for this sort of individualised work.

Co-operative work, in small groups or pairs, should be encouraged. The skills required for this will have to be taught and teachers will be expected to judge carefully how long pupils can usefully sustain such co-operation. The criteria for pairing should be judged by an approximate level of understanding as well as social skills.

There should be an appropriate balance between oral work, written work and work with a practical outcome in line with NNS.

Computer programmes should be used to add another dimension to learning in all Attainment Targets.

Attractive displays of work and teacher generated interest boards should be used whenever possible.

Resources

Textbooks, Interactive whiteboards and subscriptions to online resources including My Maths and ActiveLearn. There is selected equipment designed to support and extend the mathematics curriculum will be centrally based for all to access.

Some frequently used materials, such as multibase blocks, counters, measuring tapes, 1-10, 1-50 number lines, hundred squares, counting sticks and calculators, are to be kept in the classrooms.

Video recordings of mathematics programmes are sometimes useful but should be used selectively.

A number of programmes such as Active Teach, Active Learn and My Maths are available to be used in the computer suite which reinforces the National Curriculum Programmes of Study.

Mathematics is taught by the class teachers but support staff can be usefully employed when a one to one situation is required for helping with small groups or simply to be available generally.

Assessment and recording

At **Newfield School** we teach mathematics to all children, whatever their ability.

Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels.

When progress fall significantly outside the expected range then interventions will be put in place.

We assess children's work in mathematics from three aspects (long term, short-term and medium-term). We make short-term assessments which we use to help us adjust our daily plans. These short-term assessments are closely matched to the teaching objectives.

We make medium-term assessments to measure progress against the key objectives, and to help us plan the next unit of work.

We make long-term assessments towards the end of the school year and we use these to assess progress against school and national targets. We can then set targets for the next school year and make a summary of each child's progress before discussing it with parents.

Monitoring and review

Monitoring of the standards of children's work and of the quality of teaching in mathematics is initially the responsibility of the mathematics subject leader. The mathematics subject leader gives the head teacher an annual summary in which s/he evaluates strengths and weaknesses in the subject and indicates areas for further improvement. There will be allocated regular time for the mathematics subject leader so that s/he can review samples of children's work across the school.

Work Sampling

- Evidence files of all KS3/4 classes to be moderated once per term.
- A moderation sample will be selected by Mrs Furlong (Maths Co-ordinator)
- The moderation external partners are Crosby High School and Presfield School. External moderation of at least 2 pupils from the class will aim to check marking against national guidelines on a termly basis.

Numeracy

The School aims to empower pupils with the **numeracy** skills required for them to become confident learners and lead fulfilled lives as citizens of their local and the wider community.

Numeracy is a skill that involves confidence and competence with numbers and measures. It requires an understanding of the number system, and an ability to solve number problems in a variety of contexts. Numeracy also demands practical understanding of the ways in which information is gathered by counting and measuring, and is presented in

- Graphs
- Diagrams
- Charts
- Tables.

Mathematical skills can be consolidated and enhanced when pupils have opportunities to apply and develop them across the curriculum. Poor numeracy skills, in particular, hold back pupils' progress and can lower their self-esteem. To improve these skills is a whole-school matter. Each department identifies in their planning the contribution it makes towards numeracy and other mathematical skills so that pupils become confident at tackling mathematics in any context.

At Newfield School, numeracy is embedded across the curriculum through planning and assessment. Weekly words and phrases are displayed in all classrooms and referred to throughout lessons.

Contribution of mathematics to teaching in other curriculum areas

English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage children to read and interpret problems in order to identify the mathematics involved. The children explain and present their work to others during plenary sessions.

Information and communication technology (ICT)

Teachers of mathematics at Newfield are encouraged to make ICT a part of each lesson. Classrooms have interactive whiteboards and this has helped broaden teaching and

learning strategies. Each room contains at least one computer and we have software such as Whiteboard Maths, Education City which is used across the school to aid the teaching of Mathematics.

Children use and apply mathematics in a variety of ways when solving problems using ICT. E.g. to produce graphs and tables when explaining their results or when creating repeating patterns.

Personal, social and health education (PSHE) and citizenship

Mathematics contributes to the teaching of personal, social and health education, and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views.

Spiritual, moral, social and cultural development

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results.

Equal Opportunities

In order to give each pupil an equal opportunity to achieve their potential, individual help is often at hand for those who find this subject particularly difficult. It is expected that both girls and boys will have access to all areas of the mathematics curriculum. We do not have stereo-typed pre-conceptions of what individual strength in mathematics, to participate in mathematical activities in a mainstream school. This will therefore give opportunities for pupils to work towards a recognised qualification.