Newburgh
Primary School

Mathematics Policy

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Intent

Mathematics is a tool for everyday life. It is a whole network of concepts and relationships which provide a way of viewing and making sense of the world. It is used to analyse and communicate information and ideas and to tackle a range of practical tasks and real-life problems. It also provides the materials and means for creating new imaginative worlds to explore.

We believe in the principles and beliefs of the 'Mastery Method': There is a change of ethos away from rapid acceleration through material to a deep conceptual understanding of mathematics. This includes a belief that all pupils are capable of understanding and doing mathematics, given sufficient time. Pupils are neither 'born with the maths gene' nor 'just no good at maths'.

Aims:

Our aim is that our pupils will leave us as fluent, able mathematicians who love maths. We actively discourage children and adults from saying 'I don't like maths' and 'I'm no good at maths'. With good teaching, appropriate resources, effort and a 'can do' attitude all children can achieve in and enjoy mathematics.

We aim to develop:

- a positive attitude towards mathematics and an awareness of the fascination of mathematics;
- competence and confidence in mathematical knowledge, concepts and skills;
- an ability to solve problems, to reason, to think logically and to work systematically and accurately;
- initiative and an ability to work both independently and co-operatively with others;
- an ability to communicate mathematics;
- an ability to use and apply mathematics across the curriculum and in real life;
- an understanding of mathematics through a process of enquiry and experiment.

Implementation

Knowledge Skills and Understanding:

At Foundation Stage, KS1 and KS2 teachers use the ' White Rose Scheme of Learning' long term and medium term planning for mastery.

Through careful planning and preparation we aim to ensure that throughout the school children are given opportunities for:

- practical activities and mathematical games;
- problem solving;

- individual, group, and whole class discussions and activities;
- open and closed tasks;
- a range of calculating skills e.g. mental, pencil and paper and using a calculator;
- working with computers as a mathematical tool.

Principles and teaching and learning:

The class work together on the same key point, whilst at the same time challenging and supporting pupils to gain depth of understanding and proficiency.

Acceleration to higher content is avoided. There are high expectations for all.

Our teaching and learning strategy is based on the 'White Rose Scheme of Learning' for mastery. Numeracy means knowing about numbers and number operations. More than this, it requires an ability and inclination to solve numerical problems, including those involving money or measures. It also demands familiarity with the ways in which numerical information is gathered by counting and measuring, and is presented in graphs, charts and tables.

Numerate pupils should:

- have a sense of the size of a number;
- know by heart tables, doubles and halves;
- figure out answers mentally;
- calculate mentally and with pencil and paper;
- use a calculator appropriately;
- make sense of problems;
- have strategies for checking;
- explain methods and reasoning;
- suggest suitable units for measuring;
- make sensible estimates;
- make predictions from graphs, charts and tables.

Teachers' Planning and Organisation:

- Mathematics is a core in the National Curriculum and we use the ' White Rose Scheme of Learning' for mastery as the basis for implementing the statutory requirements of the program of study for mathematics.
- We plan the curriculum in mathematics in three phases (long term, medium term and short term).
- Our medium-term plans, give us the main teaching objectives for each term, define what we teach. They ensure an appropriate balance and distribution of work across each term. These plans are kept and reviewed by the subject leader.
- The class teacher completes the weekly plans for the teaching of mathematics. The White Rose guidance and examples document shows a 'Small Steps Summary' which is used to create a short-term plan. The weekly plans list specific learning objectives and outcomes for each session

and give specific details of how each lesson is to be taught. The weekly plans are monitored at least termly by the subject leader. Where there are two classes per year group, class teachers will plan collaboratively to ensure that children are given similar experiences regardless of which class they are in.

- We plan the activities in mathematics so that they build on the children's prior learning giving the children an opportunity to develop their skills, knowledge and understanding.

Organisation of Mathematics Teaching:

- Daily maths skills lessons take place in the mornings, with some longer lessons to learn and use specific problem solving skills. There is an emphasis on developing mathematical vocabulary, practical, hands on learning, independence and use of real life scenarios.
- Opportunities are given to use and consolidate maths skills through topic work.
- There is a clear focus on direct instructional teaching and interactive oral work with a whole class or group. The teaching will involve different elements: demonstration (showing how to), explanation, questioning (challenging understanding), discussion and evaluation. Where appropriate the children will record their work.
- The children record their work in books:
    - The foundation stage - plain books
    - Year 1 – 2 cm squared
    - Year 2 - 1 cm squared
    - Y3 and 4- 1 cm squared
    - Y5 and 6 – 7mm squared
- The children from year 2 upwards are encouraged to write the date numerically.
- One number should be written in each square.

The Foundation Stage:

We have adapted the White Rose scheme to plan the medium-term and short-term mathematics for the children in the Foundation Stage.

Cross Curricular Skills and Links:

- Cross curricular links are developed as appropriate. Examples include measuring in technology, charts and graphs in science and geography, times and dates in history, patterns in art, music and dance, scoring and counting in physical education.

Mathematics and Inclusion:

- We teach mathematics to all children. Mathematics forms part of our school curriculum policy to teach a broad and balanced education to all children. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents and those learning English as an additional language.

- Intervention through School Action and School Action Plus will lead to the creation of an Individual Education Plan for children with Special Educational Needs. Their IEP where appropriate will incorporate suitable objectives from the Revised Primary Strategy for the teaching of mathematics.

Homework:

An arithmetic task will be set, to be marked during a maths lesson, from Year 5 onwards. Year 3 and Year 4 have access to TTRockstars to support fluency of tables and division facts to 12X.

Equal Opportunities:

There is a school Equal Opportunities Policy which is applied to mathematics. Teaching materials are chosen to reflect the cultural and ethnic diversity of our society. We try to avoid stereotyping through gender or race. Pupils' performance is monitored to ensure that no group of pupils is disadvantaged. In lessons the full participation of both boys and girls is encouraged and care is taken in whole class teaching to ensure that there is no disadvantage to any gender group.

Impact

Assessment for Learning:

Teachers are expected to make regular assessments of pupils' progress and record them systematically.
This involves:

- Short term assessments to help teachers adjust their daily plans. The short term assessments are closely matched to the teaching objectives and feed into the weekly planning.
- Medium term assessments which take place half termly and are used to track pupil progress.
- In Year 2 and in Key Stage 2 at the end of the academic year pupils complete optional/ statutory SATs papers for their year group. These results are used to track pupil progress and identify any gaps knowledge.
- In the Foundation Stage the teacher assess against the Development Matters bands throughout the year and the Early Learning Goals at the end of the year.
- Teaching staff record their class mathematic assessment level at the end of each Term on the school assessment tool in accordance with the assessment policy.

Monitoring and Review:

The co-ordination and planning of the mathematics curriculum are the responsibility of the subject leader, who also:

- supports colleagues in their teaching, by keeping them informed about current developments in mathematics;

- gives the Head teacher a termly summary report in which s/he evaluates the strengths and weaknesses in mathematics and indicates areas for further improvement;
- uses specially allocated management time to review evidence of the children's work and to observe mathematics lessons across school.