



Numeracy

Mathematics teaches children how to make sense of the world around them through developing their ability to calculate, reason and solve problems. It is a core subject with a range of cross-curricular links but most often, is best taught discretely, using opportunities from other subjects to rehearse skills in a context. Numeracy involves developing confidence and competence in the areas of Number, Measurement, Geometry and Statistics as defined in the National Curriculum 2014. We aim to support children in achieving economic well-being by equipping children with a range of computational skills and the ability to solve problems in a variety of real life.

As stated in the aims of the National Curriculum 2014, we aim to provide children with a education that will allow them to:

- *become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.*
- ***reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language*
- *can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.*

The specific areas of Numeracy taught, in accordance with the National Curriculum 2014, are:-

- Number – number and place value
- Number – addition and subtraction
- Number – multiplication and division
- Number – fractions (including decimals)
- Measurement
- Geometry – properties of shapes
- Geometry – position and direction
- Statistics

Management and Role of the Co-ordinator

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The school has a collegiate approach to all planning based on the National Curriculum 2014 and drawing on other resources such as Espresso. Support is provided by the overall curriculum Co-ordinator and also by the Head. The Numeracy Co-ordinator is given time annually to monitor the running of the school policy.

The role of the subject Co-ordinator, however, is to take a lead in assisting and supporting their colleagues in delivering Numeracy.

During the implementation National Curriculum 2014, the Co-ordinator is expected to:

- to ensure teachers are familiar with the curriculum and help them plan lessons
- prepare, organise and lead Inset and training (where required)
- observe colleagues teaching, identifying the support they need.
- attend appropriate training events (e.g. Maths Hubs)
- take a lead in developing the teaching and implementation of Numeracy within the school
- discuss regularly with the Headteacher and Numeracy Governor, progress in developing Numeracy within the school
- review standards using school's assessments

The specific roles are:

- to receive and disseminate documentation
- to encourage and support the professional development of all teaching staff
- work co-operatively with the SENCo in providing advice and support for staff
- to support and liaise with the overall curriculum Co-ordinator in the planning of the school's delivery of Numeracy
- to oversee the coverage and appropriate differentiation of Numeracy
- to request the necessary resources for the subject
- to oversee the agreed recording and assessment of Numeracy
- to oversee moderation of standards for Numeracy in terms of the Statutory Requirements within the National Curriculum
- to evaluate the success of agreed targets in developing Numeracy within the school

Purposes of Learning

In general, the school endeavours to:

- demonstrate the creative and highly inter-connected nature of mathematics
- teach children skills essential to everyday life
- provide children with a foundation for understanding the world
- encourage children to communicate using mathematical language
- stimulate enjoyment for mathematical activities

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- enable children to become confident in the manipulation of number, both mentally and in written form
- develop the ability to reason logically and explain their reasoning
- to give opportunities for using mathematical skills with a variety of equipment, e.g. computers

Teacher Planning

Staff all engage in the following procedures to ensure good planning:

- using the National Curriculum 2014 to plan for coverage of the relevant Statutory Requirements. These are laid out in paired year groups and so an awareness must be shown of planning for progression across both years.
- using medium-term plans, which are termly outlines of work, showing the main teaching objectives and when they are to be taught
- writing short-term plans, which are weekly notes on teacher input, tasks, activities, teaching points and key questions for five lessons, including differentiation and plenaries

In general, planning may involve:

- individual group and class teaching
- the use of a variety of equipment applied at the appropriate level
- the organisation of time for discussion and the communication of ideas
- introduction of Numeracy relevant to the child's everyday experiences
- the use of Interactive Mental Maths in planning/oral starter
- the use of a selection of other teacher guides – e.g. 'Developing Numeracy', '100 Ideas for Maths Lessons
- Interactive Whiteboards e.g. Primary Resources, Woodlands Junior School
- ICT
- Hamilton Trust
- Espresso

Classroom Delivery

Classroom delivery generally includes:

- an oral and mental starter
- a main teaching activity, which involves work on the same topic with the whole class, sometimes followed by children working in groups, pairs or as individuals.
- a plenary for the whole class (mini plenaries may also be used throughout the lesson)

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In the main teaching activity part of the lesson, the children work using a variety of equipment and activities including oral responses, individual whiteboards, practical activities, games, worksheets and very occasionally textbooks.

Layout of Children's Work

Throughout Years One and Two there is an emphasis on mental calculation and informal written approaches. Throughout Years Three and Four there is more of a balance between mental and written methods, with the expectation that throughout Year Five and Six, children become fluent at selecting and using appropriate strategies to solve problems and calculations.

In addition to encouraging children to explain orally the methods they are using, children record their written work in a way which is relevant and meaningful to them. The children may record their calculations in the following ways:

- writing informal jottings often on whiteboards
- practising and using correct written notation and symbols
- recording their own methods of calculations
- using formal written methods, particularly from Years 3 - 6

Formal written methods should be recorded on squared paper with one number in each square, using a ruler as an essential tool. Pencils, provided by the school, should be used for all areas of Numeracy.

Graph work should be done on centimetre squared paper, unless it is done on a computer. However, graph paper may be used by the higher ability children in Years 4 - 6.

Resources

Each classroom has its own resources of equipment, books and computer programs which are kept up to date. Further resources can be purchased through discussion with the Numeracy Co-ordinator and the Headteacher.

Assessing without Levels

Assessment in the Foundation Stage will be made through the Early Years Foundation Stage Profile.

Assessments from Years 1 to 6 will be made using the following tools –

- Day to day assessment of classwork

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- Formal assessments of each area of Numeracy using material from Headstart Primary

These assessments will then feed into the 'Numeracy Assessment' 2014 spreadsheet. These spreadsheets should be updated at the usual assessment points using the following number system:

'no entry' = no evidence of the objective being met

0 = working below current year group expectation

1 = working towards the current expectation (*some objectives have been achieved*)

2 = meeting the current expectation (*many objectives have been achieved*)

3 = exceeding the current expectation (*most objectives have been achieved and some of the next years objectives have also been met*)

Use of Assessment Data

The Headstart Primary Numeracy assessment tracker can be used to set up group targets and inform planning – this tracker allows for easy identification of where the class as a whole is working below expectations for the year group. After the following assessment, a judgment should be made as to whether these areas are now being achieved or not. If not, then thought should be given as to why not and appropriate action taken.

Special Needs and Differentiation

The school seeks to provide appropriate differentiation by:

- using objectives from the year below or above
- after school pre SATs booster lessons
- targets on Individual's Profiles
- targeted interventions (e.g. Power of 2)
- using activities differentiated by task, expectation and teacher input
- open-ended investigations, including stretching the more able pupils by giving more challenging work
- targeted questions in oral sessions
- teachers working, on occasions, directly to the needs of a small group rather than to the whole class
- provision of learning aids – e.g. 100 squares
- T.A. support
- Parental helpers

Where possible, additional classroom support is made available for any children with individual problems.

Monitoring and Setting Standards

The Co-ordinator, together with the curriculum Co-ordinator, the Head Teacher and the Governors, has responsibility for monitoring standards of Numeracy across the school. A time allocation is given as necessary by the Head Teacher.

In Numeracy the following systems are in place for the Co-ordinator to monitor standards annually:

- collecting the check-up assessment results every term
- discussing Numeracy with three children, of differing abilities from each year group
- collecting work from three children, of differing abilities, from each class
- reviewing the achievements of Year 2 and Year 6 children in SATs
- reviewing the results of the Optional SATs tests in Years 3, 4 and 5 (*to be reviewed throughout the academic year 2014-2015*)
- School Performance Handbook
- Fischer Trust
- School Tracking Document
- Raise on Line
- Headstart Primary Tracker

The Co-ordinator will outline a timetable each year. The Co-ordinator will retain the investigations and some other work, as appropriate, and place them in the maths portfolio. The Co-ordinator will report back to staff generally and individually, detailing where improvements can be made.

Evaluation

The school evaluates Numeracy by:

- ◆ keeping a portfolio of samples of work
- ◆ agreement trialling of various mathematical activities
- ◆ Headstart Primary Tracker materials
- ◆ monitoring SATs and Optional SATs
- ◆ staff meetings - formal and informal
- ◆ staff consultations as appropriate