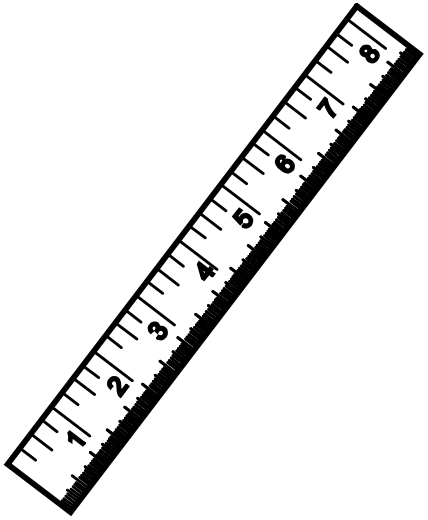
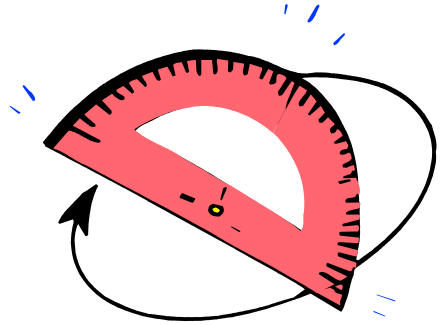
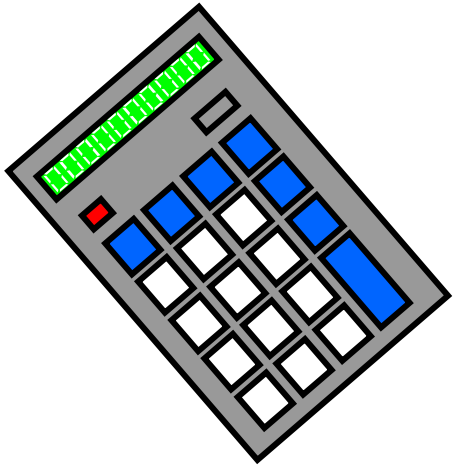
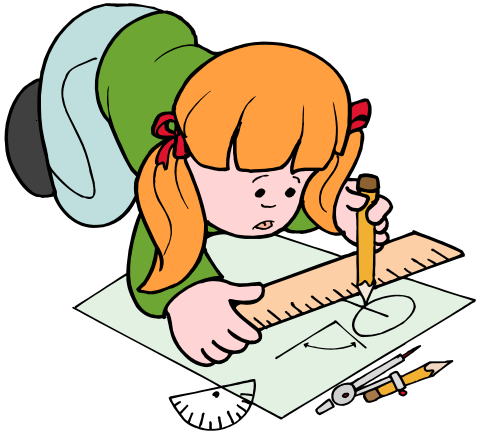
Goddard Park Primary School



Maths Policy







Date of last review: Summer term 2017

Date of next review: Summer term 2018

Rationale

Goddard Park Primary School has been working with the 2014 Mathematics Curriculum. This approach has deepened and enhanced the children's understanding of Maths.

We believe that Mathematics is essential and critical for everyday life, as it introduces children to many different skills, concepts and thinking strategies. It is vital for Science, Technology and Engineering, and necessary for financial literacy and most forms of employment.

Maths at Goddard Park is a subject that involves confidence and competence with numbers and measure. It requires a secure understanding of the number system, a repertoire of computational skills and an ability to solve problems in a variety of mathematical contexts. A good understanding also demands practical understanding of the ways in which information is gathered by counting and measuring and is presented in graphs, diagrams, charts and tables.

Knowledge, skills and attitudes

Our primary aim is to care for all the needs of the whole child and encourage each child to develop his or her full potential. Children need to be given opportunities to see that mathematics as an integral part of understanding the world.

We are teachers of young children, not subjects, and we need to use holistic, rather than a departmental approach to teaching. We should therefore, ensure that numeracy lessons and activities are:

a) appropriate to the children's needs and abilities, and
b) integrated within other topics as well as having their own slot in the daily timetable.

The children in our school will:

- *Have many experiences of success, enjoyment and challenge.* The children should enjoy learning and investigating within numeracy and can do so by encouragement and experiencing success.

- *See numeracy as being relevant.* The children need to see a point to their work, to apply skills and concepts learned to practical tasks and to experience the breadth of useful applications of numeracy in the wider world and beyond!
- *Be given opportunities to develop the 'feeling ' for number, shape, and measure.* This will enable them to make sensible estimations and approximations. In order to achieve this, they need to have an idea of the patterns and relationships in numeracy which comes only from lots of practical handling of equipment and apparatus, much discussion, lots of practice and many opportunities to apply their knowledge and understanding.
- *Give children the mathematical tools to solve problems.* This will develop their sense of curiosity and reason.
- *Have quick and fluent recall of maths facts.* Including times tables, knowledge of symbols, place value and number bonds.
- *Be able to explain strategies used.* Not just focussing on answers, they should be taught the importance of

Finally, we should aim to assist the children's learning by having a cohesive policy throughout the school, particularly with regard to expectations, targets set at each stage, numeracy vocabulary in use and the standard of work produced by the children.

What is Maths?

<u>The Nature of Mathematics</u>

Mathematics is an essential 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.

It is our 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 in cooperation 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.

Methods of Organising Teaching and Learning

In the classroom

Much thought needs to be given when setting out the classroom:

- A working wall displaying:
  - Curricular targets and examples of what this target looks like in terms of the children's learning.
  - Times tables resources.
  - Place Value resources
  - Vocabulary related to current work.
  - Examples of current and previous work.

- Materials, apparatus and equipment should be clearly labelled and available for the children to use and replace.

- Displays of children's work should be varied. Challenging questions, problems and investigations should be displayed regularly for the children to tackle in their own time, either individually, with a partner or in a group.

Differentiation and Progression

Numeracy is quite a hierarchical subject, with new concepts building on previously learned ones. It is also a structure composed of a whole network of concepts and relationships which criss-cross each other increasingly at each level. For example, before a child can attempt addition of fractions, he/she must have a good understanding of number bonds, relationships, fraction 'families', multiplication, division, etc. Differentiation is mainly by outcome, teaching strategies and extension tasks, individual targets and support provided.

The Lesson

A typical 45 – 60 min. lesson for Year 1 to Year 6 should have the following features:

Mental/Oral Foundations:
Teaching and practice of number facts, mental calculation strategies and counting techniques.
Developing and practising the use of mathematical language and vocabulary.
Focus depending on year group and term.

Main Activities:
A clear learning objective with differentiated activities and success criteria.

Lessons should:

- *Build on the knowledge learners bring to sessions*
- *Expose and discuss common misconceptions*
- *Develop effective questioning*
- *Use cooperative small group work, including Buzz Talk*
- *Emphasise methods rather than answers*
- *Use rich collaborative tasks*
- *Create connections between mathematical topics*
- *Use technology in appropriate ways*

Through:

Exploring pupils' own strategies for resolving a particular problem; demonstrating how a particular strategy can be used to tackle problems; directing tailor-made questions at individuals and groups.

or

An intriguing activity or problem is introduced for pupils to explore; pupils' initial ideas discussed in class; conjectures made about likely outcomes.

Plenaries

- Review what has been taught.
- Address misconceptions.
- Sign post the next steps.
- demonstrating
- explaining and illustrating
- questioning and discussing
- consolidating
- evaluating pupils' responses

- summarising

Assessment and Marking

Regular formative and summative assessments need to be made in line with the assessment section of the Effective Teaching and Learning Policy.

Problem Solving

Once a week problem solving skills should be taught in relation to the topic covered that week. A specific problem solving objective should be used for these lessons.

Problem solving work gives children the chance to explore and use a variety of methods and apply them to find the solution to a range of real life problems.

The term 'Problem Solving' covers both investigational work of a exploratory nature as well as fairly closed tasks, expressed in words, which have a definite answer.

Problem Solving approaches to learning:

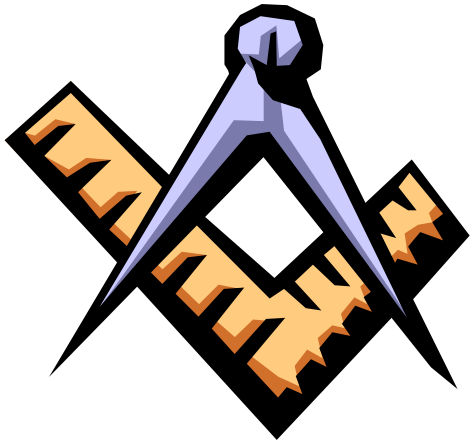
- encourage flexibility in approach and thinking, while acknowledging the different learning styles of the children, so that the process is as important as the product;
- develop learning skills such as logical thinking, making and testing hypotheses, decision making;
- afford every pupil a degree of success, allowing for experimentation and varied solutions;
- show mathematics to be a creative activity in which the learner can be an active participant.

A separate Calculations Policy supports progression in the four operations, for both mental and written calculations.

Homework

Homework is set and marked on a weekly basis. See Homework Policy for more details.

Resources



We require a wide range of resources in order to cater for the needs of all the children. These resources could take the form of published material or equipment or resources made by the teacher, eg. counting sticks, arrow cards, follow me cards.

Equal Opportunities

Children are given equal opportunities to achieve and progress at their level through the differentiation of tasks. Significant consideration is given to the needs of the More Able and the children with Special Educational Needs eg: Moderate learning difficulties.