Numeracy Policy

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1. Introduction

1.1. At St. George's School we believe Numeracy equips pupils with the uniquely powerful set of tools to understand and make sense of the world. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways. Numeracy is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a confidence with numbers and enthusiastic attitude towards mathematics that will stay with them.

2. Aims and objectives

- To have a sense of the size of a number and where it fits into the number system
- To develop a sound knowledge of number facts such as number bonds, multiplication tables, doubles and halves
- To use what they know by heart to figure out numbers mentally
- To calculate accurately and efficiently using a range of calculation strategies
- To recognise when it is appropriate to use a calculator and be able to do so effectively
- To make sense of number problems, including non routine problems, and recognise the operations needed to solve them
- To explain their methods and reasoning using correct mathematical terms
- To judge whether their answers are reasonable and have strategies for checking them where necessary
- To suggest suitable units for measuring and make sensible estimates of measurements
- To develop an understanding of how information is gathered
- To develop an understanding of shape, space and measuring skills through practical activities.

3. Teaching and learning style

3.1. At St. George's School we strongly believe all pupils are entitled to a broad Numeracy curriculum in which their learning needs are identified and met. This is achieved through daily lessons, whole class, group and individual work. Pupils should experience a range of practical and written activities on number, calculations, decimals, fractions, measurement, geometry and statistics. Classrooms should be rich in discussion between pupils and between teacher and pupils. Some facts will need to be memorised, others will need to be practised but underpinning all of this will be the development of mathematical reasoning and understanding through exploration, problem solving and investigation.

4. Early Years

4.1. We teach mathematics in our reception and nursery classes. As the classes are part of the Foundation Stage of the National Curriculum, we relate the mathematical aspects of the children's work to the objectives set out in the Early Learning Goals. These underpin the curriculum planning for children aged three to five. Mathematics in Foundation stage is initially developed through stories, songs, games and imaginative play. A positive approach to Numeracy around the classroom helps the children to begin to relate mathematics to their everyday lives. The EYFS learning environment includes visual images, models and number resources to stimulate interest. We give all the children ample opportunity to develop their understanding of number, measurement, pattern, shape and space, through varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics. Mathematical resources are readily available both indoors and in the outside learning environment. Problem Solving, Reasoning and Numeracy, as mathematics is called in the foundation stage, is made up of the following aspects:

4.2. Numbers as labels and for counting – the children gradually know and use numbers and counting in play and eventually recognise and use numbers, reliably developing mathematical ideas to solve problems.

4.3. Calculating – the children develop an awareness of the relationship between numbers and amounts and know that

numbers can be combined to be 'added together' and can be separated by 'taking away'.

4.4. Shape, Space and Measures – through talking about shapes and quantities and developing appropriate vocabulary the children use their knowledge to develop ideas to solve mathematical problems.

5. Key Stage 1

5.1. The main focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources (for example objects, blocks and measuring tools). At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary.

5.2. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

6. Key Stage 2

Lower Key Stage 2: Years 3 & 4

6.1. The main focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value.

6.2. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can

analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

6.3. By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Upper Key Stage 2: Years 5 & 6

6.4. The main focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

6.5. At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation.

6.6. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

6.7. By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages. Pupils should read, spell and pronounce mathematical vocabulary correctly.

7. Numeracy Planning

7.1. At St. George's School we operate the planning procedure agreed by the whole teaching staff based upon the National Curriculum using the Hamilton Trust plans for Numeracy.

The curriculum is planned in three stages:

7.1.1. The long term plans are the topics covered each term.

7.1.2. The medium term plans give details of each units of work covered for term.

7.1.3. The short term plans give details of the weekly and specific learning objectives and expected outcomes for each lesson. The plans build upon prior learning as the children progress through the school. Each child from Year 1 to Year 6 receives 5 hours of Numeracy each week.

8. Special Educational Needs

8.1. At St. George's School we ensure that all children have access to the Numeracy curriculum whatever their ability or individual need. We plan differentiated lessons which allow the curriculum to be tailored to the needs of the individual.

8.2. This is achieved by setting tasks of increasing difficulty; children may be grouped and set tasks suitable to their ability or a classroom assistant may be used to support an individual or group.

9. High Potential Learners

9.1. It is fundamental to the ethos at St. George's School that each child is seen as an individual and that we ensure opportunities are given to develop talents in a particular area. We aim to provide opportunities and experiences to further develop those children seen as high potential learners in Numeracy and enrichment activities are incorporated within their learning wherever possible such as:

- Setting more problem solving tasks and investigations.
- Setting tasks which extend their mathematical thinking.
- Providing Numeracy workshops.

10. The contribution of Numeracy to other subjects

Science

10.1. Numeracy contributes to science significantly as it teaches

the skills required to record and present results from practical experiments and investigations. This may include using bar and line graphs, tally charts and other forms of tables. The children use numbers, measurements and estimates during these lessons too.

ICT

10.2. In Numeracy we use ICT to support and enrich the learning. We can use the interactive whiteboard and Ipads to reinforce the work through games and investigations. We can use technology to help present data in different forms, preparing the children for the future.

11. Marking and Assessment

12. Marking of the Numeracy work follows our school marking policy. For assessment we use the "I Can" statements. These give each child an understanding of the next step ensuring they progress at their own level, along with the next target for them to work towards.

13. Children in the Early Years are assessed on the Early Learning Goals. From Years 1 – 6 the children are formally assessed three times during the academic year (once a term) to measure attainment. The children are teacher assessed throughout the year, against the Age Related Expectations, in order to track their progress. This allows the teacher to make informed judgements about whether the children are working towards the expected standard, below the expected standard or exceeding the expected standard. The teacher uses this information for future planning and individual target setting. In Years 2 and 6 the Interim Assessment Framework is used alongside the Age Related Expectations.

14. Monitoring and Review

14.1. This policy will be monitored by the Deputy Head Teacher and reviewed yearly.

13 April 2016
Stuart Compton, Deputy Head Teacher