

Park Avenue Girls' High School

Numeracy Policy

PARK AVENUE GIRLS' HIGH SCHOOL



Educating Nurturing Inspiring

Reviewed by Aapa Samia on 02/09/2016

Introduction

It is essential that all pupils acquire basic Numeracy skills. They lead to a greater competence in mathematics but also enable the development of competencies within other curriculum areas, in the world of work and in everyday life. The key skill of 'Application of Number' is a desirable outcome of the development of ability in Numeracy.

Aims

- To promote the development of Numeracy skills required by students to enable them to access the wider curriculum
- To provide opportunities for pupils to learn the essential skills they may require in the management of everyday life
- To promote consistency in the use of mathematical language, processes and styles of presentation
- To create awareness at the National Curriculum programmes of study, as reflected in the Mathematics Department Schemes of work.

Procedures

Teaching and Learning experiences often demand:

- Fluency with numbers
- Spatial awareness
- Interpretation of a variety of mathematical presentation

Promoting a positive attitude to meeting these demands is the responsibility of all members of the school community.

Whenever possible Numeracy skills should be integrated into pupil's work and any agreed language, vocabulary, methods and styles used.

In normal circumstances pupils should not be allowed to use calculators for the following:

- i. Multiplying numbers of 12 or less together
- ii. Multiplying or dividing by multiples of 10
- iii. Adding or subtracting using numbers less than 100

Pupils should always be encouraged to use appropriate mental strategies whenever possible

Monitoring and Evaluation

Monitoring should be a continuous process and should be formally carried out as part of the Department Self Review Process and Whole School Review procedures.

The following evaluation criteria will be used:

- i. All teaching staff employing Numeracy skills when possible.
- ii. All teaching staff using agreed language, vocabulary, methods and styles.
- iii. Calculators not being used for simple calculation.
- iv. All teaching staff aware when Numeracy skills are taught and to what level.

Evaluation will be on a four year cycle or earlier if appropriate.

Making Links between Mathematics and Other Subjects

ENGLISH: Mathematical skills can be re-enforced in English lessons in various ways:

- Build and use correct mathematical vocabulary and terms.
- Construct comparison tables and extract data from fiction/non-fictional books.
- Carry out surveys and analyse results
- Interpret and represent results using graphs and tables etc

SCIENCE: Almost every scientific investigation or experiment is likely to require one or more of the mathematical skills of classifying, counting, measuring, calculating, estimating and recording in tables and graphs. In science pupils will, for example, order numbers, including decimals, calculate simple means and percentages, use negative numbers when taking temperatures, decide whether it is more appropriate to use graphs or bar chart, and plot, interpret and predict from graphs.

ART, DESIGN and TECHNOLOGY: Measurements are often needed in art and design and technology. Many patterns and constructions are based on spatial ideas and properties of shapes, including symmetry. Designs may need enlarging or reducing, introducing ideas of multiplication and ratio. When food is prepared a great deal of measurements occurs, including working out times and calculating costs; this may not be straightforward if only part of a packet of ingredients has not been used.

INFORMATION and COMMUNICATION TECHNOLOGY: Pupils will apply and use mathematics in a variety of ways when they solve problems using ICT. For example, they will collect and classify data, enter it into data handling software, produce graphs and tables, and interpret and explain results. Their work in control includes the measurement of distance and angle, using uniform non-standard then standard measures. When they use computer models and simulations they will draw on their abilities to manipulate numbers and identify patterns and relationships.

HISTORY, GEOGRAPHY and RELIGIOUS EDUCATION: In history and geography pupils will collect data by counting and measuring and make use of measurement of many kinds. The study of maps includes the use of co-ordinates and ideas of angle, direction, position, scale and ratio. The pattern of the days of the week, the

calendar and recurring annual festivals all have a mathematical basis. Historical ideas require understanding of the passage of time, which can be illustrated on a time line, similar to the number line that they already know.

PHYSICAL EDUCATION: Athletic activities require measurement of height, distance and time, while ideas of counting, time, symmetry, movement, position, gymnastics and ball games.

The key to making the most of all these opportunities is to identify the mathematical possibilities across the curriculum at the planning stage. You should also draw pupils' attention to the links between subjects by talking frequently about them.

The Role of the Mathematics Department

The role of the mathematics department in supporting the Numeracy policy at PAGHS involves developing skills and abilities in:

The knowledge and understanding needed to apply a range of mathematical concepts to situations and problems that may arise across the curriculum and in the pupils' own lives.

The mathematics department will encourage this in the following ways:-

1. Provide daily oral and mental work to develop and secure pupils' calculation and strategies and rapid recall skills
2. Devote a high proportion of lesson time to direct teaching of whole classes and groups, making judicious use of textbooks, worksheets and ICT resources to support teaching, not replace it
3. Demonstrate, explain and illustrate mathematical ideas, making links between different topics in mathematics and other subjects
4. Use and give pupils access to number lines and other resources, including ICT, to model mathematical ideas and methods
5. Use and expect pupils to use correct mathematical vocabulary and notation
6. Question pupils effectively, including as many of them as possible, giving them time to think before answering, targeting individuals to take account of their attainment and needs, asking them to demonstrate and explain their methods and reasoning and exploring for any wrong answers
7. Involve pupils and maintain their interest through appropriately demanding work, including some non-routine problems that require them to think for themselves
8. Ensure that differentiation is manageable and centred around work common to all pupils in class, with targeted, positive support to help those who have difficulties with mathematics to keep up with their peers
9. Ensure pupils have the opportunity to take part regularly in oral and mental work that develops their calculation strategies and recall skills.