Windsor High School and Sixth Form

Numeracy Policy	
Responsible Committee:	Windsor Local Advisory Board
Policy Coordinating Officer:	Faculty Director
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What is Numeracy?

Numeracy is a life skill. It is a proficiency that is developed not just in mathematics but also across the entire curriculum. Numeracy involves learners having the confidence and competence to use numbers and measures. It requires an understanding of the number system, recalling mathematical techniques and an ability to solve problems in a variety of contexts. A practical understanding of graphs, charts, tables and diagrams is an important part of numeracy.

Being numerate is about appreciating number relationships and interpreting answers, and not just about doing calculations.

Numerate students should be confident enough to tackle problems without going immediately to teachers or friends for help.

Students should:

- Have a sense of the size of a number and where it fits into the number system; know basic number facts and recall them quickly.
- Develop the appropriate mathematical language associated with number, shape and data.
- Use what they know to figure out an answer mentally.
- Use a range of strategies to calculate mentally and with pencil and paper.
- Use a calculator sensibly.
- Recognise which operation is needed to solve a problem.
- Carry out more than one single step operation.
- Know for themselves that their answers are reasonable.
- Discuss their work to enable them to share and compare ideas.
- Explain their methods and their reasoning using correct terms
- Be able to suggest suitable units for making measurements and make sensible estimates of measurements.
- Explain and predict from the numerical data in a graph, chart or table.

Numeracy Across the Curriculum

Proficiency in mathematics is an essential skill to develop. It can be in the form of mathematical comprehension shown when speaking, listening, reading or writing. In addition to the more formal methods of teaching mathematics, mathematical skills should be taught within a variety of curricular contexts by meaningful and relevant activities. It is not only essential for students to acquire proficiency in basic arithmetical computation, but necessary for them to understand the processes they are using, and be able to apply them constructively in unfamiliar situations. For example, is it not enough for students to learn their tables, they need to have had a whole range of experiences grouping numbers.

It is important to provide opportunities for problem solving and for learners to apply numeracy to the real world. To explore order, patterns and relationships that form the basis of mathematics. Only then can we ensure students enjoy mathematics and numeracy in all their forms.

Mathematical and numerical cognitive development should be a continuous learning process. It can be addressed across the whole curriculum. Certain core skills such as mental arithmetic, pencil and paper calculations, use of a calculator and graph drawing can be revised continuously in order to aid students' understanding and development.

Students will come to school with very different mathematical learning experiences, capabilities and skills. Some will start with the ability to perform many basic arithmetical skills, and be familiar with calculators and ICT. Others will have more usable knowledge and mathematical skills. It is important that teachers use students' experience/skills in order to develop and improve their capabilities. Each appropriate Faculty should reflect numeracy approaches in their schemes of work.

Mathematical skills are developed and enhanced in all curricular areas when:

- There is consistency in numeracy across the whole school.
- The activities integrate the different aspects of mathematics.
- The activities contain tasks which develop knowledge and understanding and others which develop problem solving.
- The activities have a balance between pure mathematics and the applications of mathematics.
- Students are discouraged from writing down answers only and encouraged to show their numerical working out within the main body of their work.
- The activities require the use of mental arithmetic and written calculations.
- Learners are regularly asked to consider 'rough' answers and invite them to estimate using these to provide a suitable check for their answers.
- The activities use a range of mathematical tools, eg, iPads, calculators, protractors, etc and students are given the chance to select equipment and skills.
- Students are encouraged to explain their answers, opening up to discussion and the sharing of knowledge.
- Students are asking and answering questions giving precise instructions, information and giving and receiving clear or simple explanations, developing reasoning skills and making predictions.
- Students are using different types of media to present information, eg, written work, word processing and diagrams.

- The students' work involves reading exercises with others in order to build up mathematical vocabulary and comprehension, so that they can process the information that they are presented with.

- Students' work is marked and discussed by the subject teacher who asks questions such as 'How?', 'Why?' and 'When?', etc, to expand the students' use of mathematics.

Calculator Policy

Use of calculators allows freedom from repetitive difficult calculations.

In all areas of the curriculum the use of calculators can be encouraged where they enhance the learning taking place, however, it is important that students do not develop a reliance on the use of a calculator to solve problems where mental and/or written methods can be used. Calculators may be used when working with real data, possibly involving very large, small or decimal numbers, which might otherwise restrict their progress in a lesson.

The school expects each student to bring and use their own calculator (preferably scientific). We do have calculators available if needed.

It is good practice to always estimate answers before using a calculator. Students should be encouraged to estimate the approximate answer first and then use the calculator to check the reasonableness of their answer.

Students need to interpret calculator answers sensibly. Sensible rounding is expected and units must be stated where answers are in context.

Students should be encouraged to set down method working, whether using a calculator or not. Answers only are not acceptable.

Students should have the required skills to use the basic facilities of a calculator effectively, for example, the order in which keys are used, the use of the constant and memory facilities, etc. Care must be taken when students are using basic calculators as the order of operations is often not always in-built (BIDMAS).