TREVIGLAS COMMUNITY COLLEGE

Numeracy across the curriculum Policy

Ethos and Rationale

Treviglas Community College is committed to raising the standards of Numeracy of all its students, so that they develop the ability to use Numeracy skills in all areas of the curriculum and the skills necessary to cope confidently with the demands of further education, employment and adult life.
It is important that all students develop the ability to apply numerical understanding and skills confidently to solve problems in a variety of curriculum contexts and to cope with practical mathematical demands of everyday life.

The focus on Numeracy skills is not just the responsibility of the mathematics department. All subjects where students are expected to apply numerical skills should be taking positive steps to develop students' Numeracy skills and concepts and provide opportunities for them to acquire the mathematical language crucial to understanding mathematical knowledge. The improvement of Numeracy skills raises students' mathematical attainment, which promotes high standards in other subjects. People with poor Numeracy skills are at a disadvantage when they try to enter full-time employment. They frequently struggle to enter full time employment and often fail to stay in employment long term.

Numeracy is more than an ability to do basic arithmetic. It involves developing a confidence and competence with numbers *and* measures. It requires an understanding of the number system, a repertoire of mathematical techniques and an inclination and ability to solve quantitative or spatial problems in a variety of contexts. Numeracy also demands practical understanding of the ways in which data is gathered by counting and measuring, and is presented in graphs, diagrams, charts and tables.

Numerate students:

- have a sense of the size of a number and where it fits into the number system
- read numbers correctly from a range of meters, dials and scales
- know basic number facts and recall them quickly and confidently
- use what is known to work out answers mentally
- use calculators and other ICT resources appropriately and effectively to solve mathematical problems
- make sense of number problems, recognise the operation(s) needed and are available to work confidently with numbers
- know when answers are reasonable and give results to an appropriate degree of accuracy
- are able to manipulate algebraic expressions and simple formulae
- understand and use correct mathematical notation and terminology
- are able to explain methods, reasoning and conclusions
- use units of measurement of length, angle, mass, capacity and time; can suggest suitable units for measuring, make sensible estimates of measurements and measure accurately using a range of instruments
- understand and use compound measures and rates
- use simple formulae and substitute numbers in them
- measure and estimate measurements, choosing suitable units and calculate simple perimeters, areas and volumes
- draw plane figures to given specifications and appreciate the concept of scale in geometrical drawings and maps
- understand the difference between the mean, median and mode and the purpose for which each is used
- collect data, discrete and continuous and draw, interpret and predict from graphs, diagrams, charts and tables
- understand probability and risk

During their time with us, students should, across the curriculum, learn to:

- have a sense of the size of a number and where it fits into the number system;
- recall mathematical facts confidently
- calculate accurately and efficiently, both mentally and with pencil and paper, drawing on a range of calculation strategies
- use proportional reasoning to simplify and solve problems
- use calculators and other ICT resources appropriately and effectively to solve mathematical problems, and select from the display the number of figures appropriate to the context of the calculation
- use simple formulae and substitute numbers in them
- measure and estimate measurements, choosing suitable units, and reading numbers correctly from a range of meters, dials and scales
- calculate simple perimeters, areas and volumes, recognising the degree of accuracy that can be achieved
- understand and use measures of time and speed, and rates such as £ per hour or miles per litre
- draw plane figures to given specifications and appreciate the concept of scale in geometrical drawings and maps
- collect data, discrete and continuous, and draw, interpret and predict from graphs, diagrams, charts and tables
- explain methods and justify reasoning and conclusions, using correct mathematical terms;
- judge the reasonableness of solutions and check them when necessary
- give results to a degree of accuracy appropriate to the context

Strategies for ensuring progress against these aims:

- The mathematics department is responsible for delivering all aspects of the National Curriculum for mathematics and to ensure the transition between each Key Stage is as smooth as possible
- All learning areas have a responsibility for identifying aspects of their schemes of learning that contribute to raising students' standard of numeracy and highlighting these aspects, in their planning and making them explicit to the students
- All staff should promote understanding by assisting the Mathematics Department in encouraging problem solving
- Raise the profile of mathematics throughout the school, promoting the application of number whenever possible
- Students who have been identified as Gifted Mathematicians will be given opportunities to develop and deepen their understanding of key topics, and additional qualifications and opportunities will be available to them

Leaders of Learning should:

- address aspects of numeracy in schemes of learning. The implication of this is that all schemes should include opportunities for specific numeracy issues to be taught. e.g. part of a p.e. session could be focussed on developing special awareness or accurately measuring distance over time or part of a geography session could be focussed on understanding concepts of scale
- develop and display key terminology in subject areas including calculators, rulers and so on
- develop and use frameworks for understanding mathematical concepts pertinent to their subject
- provide a resource station in their area
- develop and use strategies to develop and support students in numeracy
- ensure subject teachers can actively teach the numeracy skills necessary for their subjects. The opportunities for teaching these skills should be clear in schemes of learning and session plans, and it is the responsibility of all leaders of learning to monitor this. this, in turn, will be monitored by the Senior Leadership team
- ensure subject teachers communicate differentiated success criteria and learning objectives to students explicitly when relating to numeracy
- continue to develop and use a variety of activities that promote interactive learning using numeracy
- monitor student progress through the college's Assessment for Progress focus. This should

inform strategies that can support students in their learning and provide them with support and feedback to make progress in line with and above national expectations

The SEND team will:

- liaise with the mathematics team about student attainment in numeracy
- communicate with all staff about students who have specific difficulties in numeracy and provide IEP strategies for supporting students with this. Monitor students who have difficulty with numeracy through IEPs, the Effective Learning Team and review meetings

Monitoring

The SLT, with the Leader of Learning: Mathematics, will report annually to the Governors on progress. Success criteria will include analysis of session observations with regards to the positive promotion of numeracy and other factors related to numeracy as identified as areas for improvement or focus as well as level of progress in mathematics and science.