St Clement's College
Basic Skills for Numeracy Policy

Definition of Numeracy

Numeracy has been defined as follows:

Cockcroft Report (1982)- 'An at homeness with numbers' and 'ability to make use of mathematical skills to cope with the practical mathematical demands of everyday life'

Aims.

- To ensure that transfer from primary college allows children to build on their KS2 assessment
- To use base-line data to place students in the most appropriate group to allow them to reach their full potential
- To allow basic numeracy skills to be taught consistently across KS3 and KS4
- To ensure that students not yet reaching national standards are given the extra support and intervention to allow them the best opportunity to do so.
- To ensure that any gifted and talented students are recognised and targets set to meet their potential
- To allow clear and specific targets to be set for students to make future progress
- To care for the personal and social needs of the student

Rationale

- The development of numeracy skills is a basic entitlement for all.
- All students should experience a rich numeracy environment, regardless of perceived 'ability'.
- Numeracy involves the application of knowledge, skills and understanding essential for personal and social development and for life-long learning
- Competence in mathematics/numeracy is important and essential for success in other areas of study.
- Numeracy should be promoted throughout all areas of the curriculum in a consistent and efficient manner.
- Mathematics can be used to describe, illustrate and explain. Above all it can be used to convey meaning and provides a means of communication which is powerful, concise and unambiguous.

Whole staff involvement.

- Each member of staff is responsible for developing student's numeracy skills and competence within his or her own area of study
- All teachers should collaborate to ensure that students can apply their mathematical skills in a variety of relevant and appropriate contexts
- Through consultation and co-operation, the mathematics department will advise on and co-ordinate the introduction and development of calculator skills to support the changes from KS2 numeracy strategy (2006 September) and to ensure a consistent approach to the use of the calculator throughout college
- Appropriate ICT resources will be used in each area of study to enhance students learning experiences-(all staff).

Objectives

- To raise standards of numeracy by enhancing the quality of learning and teaching.
- To identify numeracy levels of students on entry to college by base-line testing

- After analysis of data, students who need intervention strategies for basic numeracy skills will be identified and a system of support (specific intervention work) will be put in place by Intervention TA.
- A TA will be assigned to the Maths department to support, although depending on numbers, extra TA's may be necessary to ensure that students not yet reaching national standards are given the extra support to allow them the best opportunity to do so.
- A consistent approach to basic number, table knowledge and mental arithmetic is put in place for weaker students.
- Clear and specific individual targets to be set for students to make future progress.
- To develop numeracy skills in **all** students (including gifted and talented students) through effective Maths teaching and extension activities.
- To provide appropriate staff development to ensure a shared understanding of, and consistent approach to numeracy throughout for all students.
- To draw up and maintain appropriate procedures for the monitoring and evaluation of the numeracy provision for all students

<u>Staff Responsibilities.</u>

- Ensuring that all students are numerate is one of the most important curricular responsibilities of the college.
- The Faculty leader of Maths, and the Numeracy Co-ordinator, will consult with Subject Leaders in order to develop a co-ordinated and consistent approach to the development of numeracy throughout the college.
- The Head of ICT and Head of Maths will liaise with staff to advise on appropriate maths ICT resources to be used in each area of study to enhance student's learning experiences.
- Each member of staff should evaluate resources available and should be aware of the 'numeracy' content.

<u>Implementation of Numeracy policy.</u>

- The Numeracy Co-ordinator will work with the Head of Maths, SENCO, Assistant Principal for student support, and the Assistant Principlal overseeing ICT and Intervention TA, to support the development of numeracy across the curriculum.
- All staff will need to include references to numeracy in schemes of work, lesson plans and teaching.
- Establish procedures to monitor and evaluate the numeracy provision for all students in the college.
- Set priorities and targets to be achieved with assistance of above personnel.
- Help identify training needs of staff in relation to numeracy and ensure that training needs are met.

<u>Timing of implementation.</u>

- The whole college policy on numeracy will evolve commencing with Year 7. (base-line testing Autumn Term), and moving on to other year groups.
- All Departments will need to show clearly where they are using numeracy objectives, across their own subject areas. Regular work scrutiny will take place so that this can be checked.
- Implementation of the policy will begin in the 2006-2007 academic year
- The audit, review and monitoring process will be repeated in succeeding years with the policy eventually applicable to all year groups. This will allow the policy to proceed gradually based on identifiable needs and experiences of the students to date.
- In the interim the Transition set will have basic numeracy intervention in place and some training will be given to specific TA's from Transition staff, using a series of twilights.
- Numeracy Co-ordinator will audit intervention tools/programmes of work

Monitoring progress and provision.

- The Numeracy Co-ordinator and Head of Maths and Intervention TA, will meet with Subject Leaders to review and plan for numeracy developments.

Parental Involvement.

- Parents will be encouraged to help their children with homework/investigations/table knowledge
- Parents will be kept informed of developments in numeracy
- Parents can discuss progress or problems on open evenings/consultation days

Additional Activities (ideas)

- Maths Fun Days
- Maths competitions
- Numeracy noticeboard
- Maths quizzes/ mental arithmetic games in Tutor times

Appendix

1. Mathematics is a study of the interaction of number and space.
2. Mathematical concepts are made up of the following elements:
    - linguistic
    - conceptual models
    - procedural
3. Levels of knowing in maths.
    - Intuitive
    - Concrete
    - Pictorial (representational)
    - Abstract
    - Application
    - Communication
4. Learning styles.
    - 29% of people are mainly visual learners- (pictures are important to them)
    - 34% of people of people are mainly auditory learners- (talk and lectures are important)
    - 37% of people are physical learners- (hands on, physical experience is important)

    A range of activities must be provided to take account of the different learning styles of the students.
5. Examples of using maths across other subjects

Geography-

a) Co-ordinates/Grid references
b) Bearings/Angles
c) Bar graphs/Line graphs- basic rules of labelling x and y axes
d) Scatter graphs
e) Pie charts- segments largest to smallest-clockwise from 12:00
f) Statistical terms-concepts of maximum, minimum, range, mean (could be in relation to temperature)

Science-

a) Teach accuracy of measuring work- different scales etc
b) Give more concrete experiences- more practical work in maths/science

c) Teach presentation and drawing of graphs; axes, scales and plotting of points
d) Teach estimating and approximating both with and without a calculator
e) Emphasise the importance of basic mental arithmetic (times tables)

Plan of Action

- Identify students in yrs 8,9,10 who are needing intervention below level 3 through base-line testing. Re-test at end of year-suggested time last week in June.
- What can be put in place at tutor times for Numeracy?
- Train specified TA's in intervention to support Numeracy?
- Heads of Year support tutors with ideas eg. Booklet with numeracy.
- Base line testing.
- Audit of intervention tools