



Hednesford Valley High

Numeracy Across the Curriculum Policy

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1. Introduction

The **purpose of the whole-school numeracy across the curriculum policy:**

- To develop, maintain and improve standards in numeracy across the school by sharing good practice.
- To ensure consistency of practice including methods, vocabulary, notation, etc.
- To indicate areas for collaboration between subjects.
- To assist the transfer of Students' knowledge, skills and understanding between subjects.

The Development of the Concept of "Numeracy":

1995 (OED) – numerate means acquainted with the basic principles of Mathematics

A Current Definition of Numeracy:

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

(Framework for Teaching Mathematics – Yrs 7 to 9 – DfES)

Numeracy is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential for life in modern society, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. It is also vital that Students achieve a level of numerical fluency to enable them to access other aspects of the curriculum. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics and a sense of enjoyment and curiosity about the subject.

2. Policy Aims

- To adopt a whole school approach to numeracy across the curriculum in keeping with the principles and practices established in the National Numeracy strategy.
- To enable all Students to reach their potential in the key numeracy skills of number, shape and space, data handling and using and applying mathematics. Particular emphasis is placed on use of time and money.
- To support the development of numeracy skills throughout the curriculum.
- To raise Staff awareness of key numeracy strategies through Staff meetings, INSET and the dissemination of good classroom practice.
- To encourage Staff to take responsibility for the development of numeracy in their subject areas through the inclusion of differentiated and appropriate schemes of work and lesson planning.
- To establish procedures for monitoring numeracy across the curriculum.

3. Strategies

Raising Standards through Strategies

Raising standards in Numeracy across Hednesford Valley High School cannot be solely judged in increased test percentages. There is a need to evaluate the Students' ability to transfer mathematical skills into other subject areas, applying techniques to problem solving. The Students' confidence in attempting this is initially as important as achieving the correct solution. Student response and work sampling will be the main

processes for evaluating the success of the school's practice. There are some key roles within school that will ensure that this policy is effective and becomes a well-established practice. The Senior Leadership Team has a commitment to the implementation and evaluation of this work and is aware of the need to create time for liaison and sustain the cross curricular links **forged between subject areas. The effectiveness of these links will reduce the replication of work by teachers and Students.**

At Hednesford Valley High we implement the following to support classroom learning:

- Variations of formats for writing the date (SSM) (all lessons).
- Using a stopwatch to time an event (SSM) (PE, tech, food tech, science).
- Recognition of the different types of money, including coins, notes, cards and cheques (N) (ASDAN, PSHE).
- Understanding a bank statement, and the concept of going overdrawn (N) ASDAN, PSHE).
- Using ICT to display data (Excel for graphical representations) (DH) (ICT).
- Number recognition up to 100 (N) (all lessons).
- Number bonds to 10, 20 (N).
- Creating symmetrical patterns/pictures (SSM) (Art).
- Creating repeating patterns using shapes/colours (SSM) (Art).
- Creating progressive patterns with shapes/colours/numbers (SSM, N, U&A) (Art).
- Percentages for calculating VAT, or when discussing alcohol in PSHE (N).
- Ratios for adapting recipes (N) (Food tech).
- Using play to develop number skills, e.g. who goes 1st, 2nd, 3rd, last; using dice; probability in games of cards/dice, matching dominoes (N, DH, SSM, U&A).
- Understanding that the more people are included in a survey, the more reliable the outcome e.g. looking at advertisements for new products (N, DH, U&A).
- Playing at shopping (N, U&A).
- Sorting objects e.g. by colour, shape, purpose (DH, U&A).
- Identifying the odd one out (DH, U&A).
- Can identify the equipment necessary to solve a problem e.g. a pencil if asked to draw (U&A) (all lessons).
- Knows names of standard units of measure and their application e.g. for length m, km, mm, cm, mile; for capacity pint, litre, gallon, ml, etc. (U&A, SSM) (technology/Food tech/science).
- Can measure length/mass/capacity (SSM) (technology/Food tech/science).
- Symmetry; use of paint mixing as a ratio context (Art).
- Comparison of two data sets on word and sentence length (English).
- Recipes as a ratio context, reading scales (Food Technology).
- Representing data, use of Spreadsheets (Geography).
- Timelines, sequencing events (History).
- Representing data; considered use of graphs (Computing).
- Dates, sequences and counting in other languages; use of basic graphs and surveys to practise foreign language vocabulary and reinforce interpretation of data (MFL).
- Addition of fractions (Music).
- Collection of real data for processing (PE).
- Interpretation and comparison of data gathered from secondary sources (internet) on e.g. developing and developed world (RE) Measuring skills, units of area and volume (DT).
- Calculating with formulae, three way relationships (Science).
- Scale, practical equipment, proportion (Textiles/Art).

National Curriculum strands and suggestions for appropriate subjects are included in brackets. More subjects are encouraged to incorporate more ideas as far as possible. All topics will be covered in

Mathematics lessons at the appropriate level.

Golden Skills Time

There are many mathematical misconceptions in which young people carry throughout their schooling. A list of these have been put together to give KS3 and 4 Students the opportunity to revisit the skills more than once in any one academic year and to reinforce the skills at a higher level in year 11.

Q> Who will access Golden Skills?

A> All of your Students will access this programme.

Q> When do we do Golden Skills?

A> Golden Skills takes place once per week in tutor time this can also be used as a starter, plenary or as extension activities.

Q> How do we choose which activity we do with our Students?

A> You can print out different activities for Students to choose from or work through the list as a class.

- $HTU \div TU$
- $TU \div TU$
- Division
- Long Multiplication
- +/- Fractions
- Fractions of a quantity
- Time – analogue 12 & 24 Hour Clock
- Naming shapes – 2D & 3D Shapes
- Area & Perimeter Concepts
- Types of Number – Factors, Multiples, Primes, Square, Cube, Powers
- Algebra – Equations
- Algebra – Collecting Like Terms
- Negative & Positive Numbers – Rules $+/-/\div/x$
- Missing angles – Triangles, At a Point, Straight Lines, Corresponding & Alternate

Resources to accommodate these skills have been put together and placed on launch pad under Subject - Maths.

Vocabulary

The following are all important aspects of helping Students with the technical vocabulary of Mathematics:

- Use of Word Walls
- Using a variety of words that have the same meaning e.g. add, plus, sum and encouraging Students to be less dependent on simple words e.g. exposing them to the word multiply as a replacement for times.
- Discussion about words that have different meanings in Mathematics from everyday life e.g. take away, volume, product etc
- Highlighting word sources e.g. quad means 4, lateral means side, so that Students can use them to help remember meanings. This applies to both prefixes and suffixes to words.
- Use different vocabulary during 'starters' to introduce new numeracy words.

Students should become confident that they know what a word means so that they can follow the instructions in a given question or interpret a mathematical problem. For example, a Student reading a question including the word perimeter should immediately recall what that is and start to think about the concept rather than struggling with the word and then wondering what it means and losing confidence in his/her ability to answer the question. The instant recall of vocabulary and meanings can be improved through flash card activities in starters. Try to do this twice a half term with each group; this may be key

vocabulary at the start of a unit of work or recalling vocabulary from previous mathematics. Students should be given practice on the wording used during KS3 and KS4 examinations. Students should link words to pictures, diagrams and concepts.

4. Roles and Responsibilities

SLT

Lead and give high profile to numeracy.

Mathematics Coordinator

Supports teachers in the implementation of strategies and encourages teachers to share good practice; identifies and coordinates numeracy training opportunities; sets targets termly for IEPs and assesses Student progress.

Mathematics Department - Teachers of Mathematics should:

1. Endeavour to be aware of the mathematical techniques used in other subjects and provide assistance and advice to other departments, so that a correct and consistent approach is used in all subjects.
2. Provide information to other subject teachers on appropriate expectations of Students and difficulties likely to be experienced in various age and ability groups.
3. Through liaison with other teachers, attempt to ensure that Students have appropriate numeracy skills by the time they are needed for work in other subject areas.
4. Seek opportunities to use topics and examination questions from other subjects in mathematics lessons.
5. Provide Students with the knowledge, skills and understanding they need to develop mathematical fluency.
6. Use consistent approaches across the school to enhance coherent learning of numeracy.
7. Set weekly mathematics homework for all Students.

Teachers across the Curriculum (subjects other than Mathematics) should:

1. Ensure that they are familiar with correct mathematical language, notation, conventions and techniques, relating to their own subject, and encourage Students to use these correctly.
2. Be aware of appropriate expectations of Students and difficulties that might be experienced with numeracy skills.
3. Provide information for mathematics teachers on the stage at which specific numeracy skills will be required for particular groups.
4. Provide resources for mathematics teachers to enable them to use examples of applications of numeracy relating to other subjects in mathematics lessons.
5. Contribute to Students' development of numeracy since number, shape, time and money are, to a varying degree, integral to all lessons.

Students

Take increasing responsibility for recognising their own numeracy needs and making improvements, particularly by completing tasks set and responding to feedback from Staff.

Parents/Carers

Encourage their children to use a range of strategies taught at school to improve their levels of numeracy, ensure Students complete homework in a timely manner.

Governors

An identified Governor could meet with Staff and Students to report progress and issues to the Governing

Board.

5. Including all Students

The needs of each Student are identified in their statements. These needs are reviewed on a yearly basis from the statement date or, when a suitable date can be arranged for all stakeholders to attend.

When writing an Annual Review Staff will follow the guidelines provided by the LA. Parents/Carers and Students are encouraged to express their opinions as part of the Review meeting.

The Students at Hednesford Valley High are entitled to our highest expectations and support. Some will need additional support and others will need to be challenged and extended. Strategies include:

- Questioning
- Adjusting the demands of the task
- Use of additional support
- Use of group structures
- Resources
- Making objectives clear
- Creating an atmosphere where Students evaluate their own and each other's work

The Governing Board believes that all Students, regardless of ability and behaviour, are valued equally at Hednesford Valley High School. SEN Students are not to be viewed as a separate entity but are part of the whole school approach, and different Students' needs are recognised and met through varied and flexible provision throughout the curriculum.

6. Dissemination and Review

The policy will be disseminated widely both Staff and Governors through appropriate meetings.

The policy will be reviewed October 2025.