

Darland High School Numeracy Policy

January 2022

Introduction

At Darland High School we aim to equip pupils with numeracy skills so that they are as confident as possible with aspects of number and their application within a variety of academic and real life circumstances.

Expectations of pupils

We would expect pupils to:

- be able to interpret a (text-based) situation in a numerical way, establishing what is required and how it is to be used
- use and explain strategies to solve problems in context
- understand and appreciate the size of a number in context
- use a calculator when it makes sense to do so
- to understand what the calculator display means when it has been used in a problem (e.g. money)
- be able to draw sensible approximations
- be able to use proper mathematical language and syntax
- be able to make basic measurements and read dials and scales, making sensible choice and use of units
- make use of simple formulae and conversion processes (including scale drawings)
- understand and use everyday compound measures
- use and understand the meaning of probability in its everyday application (e.g. to risk or in board games)
- be able to use percentages and fractions, including in the context of proportional change
- be able to carry out reasonable mental calculations and more advanced calculations on paper
- be able to round off according to the context of the problem
- be able to interpret graphical and tabular representations of data
- use and understand averaging processes

Form time in Key Stage 3

In Key Stage 3, every Form will make use of one session each week to focus on numeracy work. The materials for these sessions will be provided and supported by the numeracy team. An on-going programme to monitor the effectiveness of the sessions will be implemented: pupils will be assessed at the start and end of each unit in order to judge progress. Answer and solution are provided in a power point format.

Multiplication tables

Being able to recall multiplication facts up to 10×10 (preferably 12×12 or further) is a useful life skill. Comfort with tables makes numerical procedures across the curriculum more accessible, as well as enabling sensible estimates to be made in practical circumstances later in life. A significant emphasis is placed on improving and securing multiplication facts in Key Stage 3 during Form time activities.

Knowledge of multiplication facts leads to being able to perform the reciprocal operation of division efficiently. This is another important skill which can be widely used across the curriculum and in general life. It will also form a major part of Form time activity in Key Stage 3.

Indirect problems

It is vital that pupils can explore a (substantial) piece of textual, tabular or graphical information, interpret it and develop a strategy in order to solve a problem based upon it. Form time activities are to be implemented which give pupils access to increasingly challenging problems of this nature.

Cross-curricular numeracy

Using numeracy

Aspects of numeracy to some degree are used or applied in every subject area. However, it is recognised that some subjects will make significantly more use of numeracy than others. Where it is possible, departments should attempt to explore the application of numeracy in their subject areas. It is expected that most subject areas will contribute at least one numeracy rich activity each year. This should be done as naturally as possible, making appropriate use of numeracy in a way which is relevant to and supports the topic which is actually being taught, and which must retain priority. In the spirit of cross-curricular numeracy, as much of the Numeracy Framework as possible should be explored by as wide a range of departments as possible.

The Numeracy team will support departments in the development of numeracy rich tasks in their subject areas. The team will also agree with departments the most appropriate strands of the Numeracy Framework to be used, assessed and reported upon. Whilst more than one department might use the same strand of the Numeracy Framework, it is expected that there will be no overlap in the strands used for reporting. Faculty contributions to numeracy will be monitored on an annual basis by the numeracy team.

Assessment and reporting

It is expected that some departments will make more use of numeracy than others. All departments which make a significantly high enough use of numeracy are expected to assess pupils in the strands of the Numeracy Framework which they have used. Furthermore, contributing departments are expected to report once a year on at least one strand of the Numeracy Framework. Subject teachers will report on numeracy in their annual report on the progress of the pupils, in line with the school's reporting cycle.

It should be noted that single responses to the occasional numerical problem is not sufficient. Assessment should be based upon a large single piece of numeracy rich work, or several smaller (but not insignificant, and still numeracy rich) pieces.

Teaching the skills

It is likely that pupils will gain their primary understanding of numeracy skills in their mathematics lessons. The mathematics faculty will explore a variety of contexts in which the skills might be used, ranging from the abstract to real life.

It is essential that teaching staff outside the mathematics faculty should possess a high level of understanding of numeracy, especially in the areas they will be using. The numeracy team is available to be consulted for help and guidance in this respect, and will provide staff-centred numeracy workshops at least once per year.

Roles and responsibilities

Subject teachers

Subject teachers are expected to:

- be familiar with the Numeracy Framework
- take opportunities to use, explore and demonstrate the relevance of numeracy in the context of their subject
- ensure that their grasp of relevant numeracy is of a high standard
- liaise with the Numeracy team to familiarise themselves with efficient methods and strategies
- ensure that pupils show and explain numerical methods fully, efficiently, and with good mathematical syntax
- assess pupils' numeracy skills in the context of their subject

Faculty leaders

Faculty leaders are expected¹ to:

- ensure that Numeracy opportunities are contained within schemes of work
- liaise with the Numeracy team regarding aspects of the Numeracy Framework which are to be targeted
- inform the Numeracy team of modifications and updates to aspects of Numeracy which are being assessed and reported upon
- ensure that their staff are taking opportunities to explore and use Numeracy in the context of their subjects

The Mathematics Faculty

The mathematics faculty is expected to:

- teach the basic numeracy skills in an appropriate way, amongst the broader demands of the mathematics curriculum
- liaise with the Numeracy team and heads of department to ensure that numerical skills are taught before they are required in other subject areas
- to explore a variety of areas and contexts in which numeracy can be applied.

The Numeracy Coordinator

The Numeracy coordinator is expected to:

- liaise with heads of department to ensure that as wide a range of the Numeracy Framework as possible is used across the curriculum
- liaise with the SLT to ensure effective auctioning of the Numeracy Policy
- to attend relevant numeracy meetings
- to run workshops to improve or secure the numeracy skills of staff
- to monitor the implementation of numeracy in departments
- analyse data from national numeracy tests and make recommendations
- provide standardised, efficient methods for numerical calculation processes in the form of an annually updated guide to teaching numerical processes.

The Senior Leadership Team

The SLT is expected to:

- establish the role of the Numeracy team
- provide opportunities for staff to improve or consolidate their numeracy skills
- provide appropriate funds for numeracy programmes to be run
- provide opportunities for departments to consider and develop their inclusion of numeracy in their schemes of work
- provide appropriate opportunities for the Numeracy team to communicate to heads of department and other staff

¹ It should be remembered that some faculties will not be expected to run numeracy rich tasks due to the nature of the subject itself.

Parents

Parents are expected to:

- be aware and supportive of the need of their children to develop good numeracy skills
- give opportunities to their children to explore and use numerical methods and numerical reasoning in regular family life
- communicate with the school if they need help in terms of how they can best support their children in terms of numerical development

Closing remarks

This policy is to be reviewed and updated annually by the Numeracy Co-ordinator.