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Ripon Grammar School

Helping shape the future since 1555



NUMERACY ACROSS THE CURRICULUM POLICY

APRIL 2017

Mission Statement

Ripon Grammar School is committed to raising the standards of numeracy of all its students, so that they develop the ability to use numeracy skills effectively and confidently in all areas of the curriculum, and that they may achieve success in future education, employment and adult life.

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Approach to Numeracy

Ripon Grammar School's mathematics department encourages students to find **well-structured, logical solutions** to mathematical problems and to write mathematics formally. Based on the new primary curriculum, students are taught the formal methods of long multiplication and long division.

Definitions of Numeracy and the Numerate Student

Numeracy is:

the ability to cope confidently with the mathematical demands of further education, employment and adult life.

The Numerate student:

“...demonstrates mathematical literacy through their capacity to identify and **understand the role that mathematics plays in the world**, to make well-founded judgements and to use and engage with mathematics in ways that meet the needs of that individual's life as a constructive, concerned and reflective citizen.”

OECD (2003) *Glossary of Terms: Mathematical Literacy*, available at:
<https://stats.oecd.org/glossary/detail.asp?ID=5388>; accessed March 2017

Aims of the Policy

Ripon Grammar School aims to:

- maintain high standards of numeracy across the school;
- make use of opportunities to include numeracy in the teaching of all subjects;
- assist the transfer of students' knowledge, skills and understanding of numeracy between subjects.

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How the Aims will be Achieved

The Numeracy Co-ordinator:

- will seek opportunities to raise the profile of numeracy across the whole school community;
- will seek to provide an overview of the numeracy skills used across the curriculum;
- will liaise with all subject departments to enable them to find areas of collaboration between subjects;
- provides resources for students and staff to develop numeracy skills across the curriculum;
- will work with the SENCo to ensure support for students with numeracy problems is in place

The Mathematics Department:

- will provide support to colleagues from other curriculum areas in developing their own and their students' numeracy skills, and in building numeracy into their schemes of work;
- will seek opportunities to use topics and examination questions from other areas of cross-curricular subjects in mathematics lessons;
- will provide the Numeracy Co-ordinator with examples of maths schemes of work using topics or examination questions with a numeracy focus from other subjects;
- will inform the Numeracy Co-ordinator/SENCo of any students facing numeracy problems.

Subject Departments other than Mathematics:

- will be aware of the appropriate expectations of students and difficulties that might be experienced with numeracy skills;
- will provide resources for mathematics teachers to enable them to use examples of applications of numeracy relating to other subjects in mathematics lessons;
- will provide the Numeracy Co-ordinator with examples of work indicating where numeracy is touched upon in their schemes of work.

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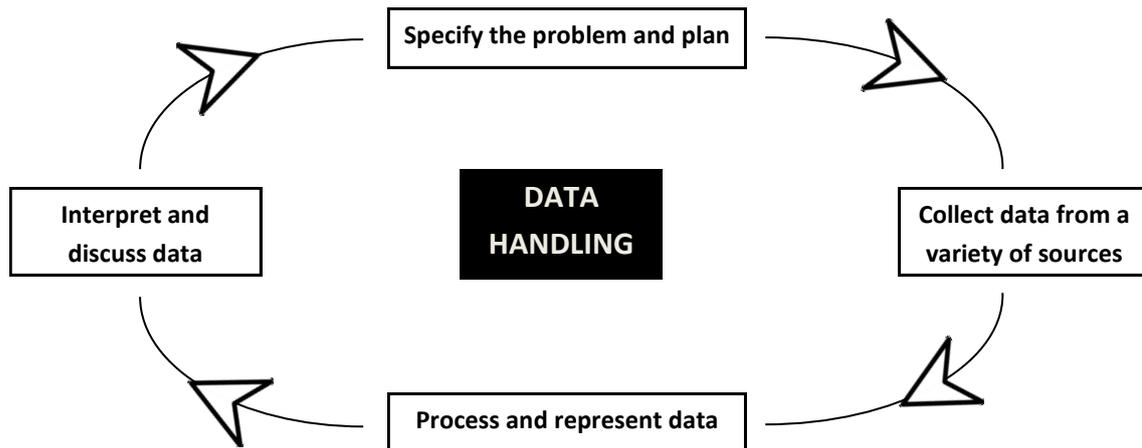
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Four Stage Cycle for Handling Numeracy

It would be useful for all subject departments to display this simple approach to data handling:



Expected Abilities at Year 7

See the Primary Curriculum for full details. Below is a non-exhaustive list.

Students should:

- have a sense of the size of a number and where it fits in the number system;
- know number bonds by heart, e.g. tables, doubles and halves;
- use what they know by heart to work out answers mentally;
- calculate accurately & efficiently using a variety of strategies, both written & mental;
- recognise when AND when not to use a calculator; using it efficiently if needs be;
- make sense of number problems, including non-routine problems, and recognise the operations needed to solve them;
- explain their methods and reasoning using correct mathematical terms;
- judge whether their answers are reasonable, and have strategies for

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checking;

- suggest suitable units for measuring;
- make sensible estimates for measurements;
- explain and interpret graphs, diagrams, charts and tables;
- use the numbers in graphs, diagrams, charts and tables to predict.

Expected Abilities at Year 9

See schemes of work for full details. Below is a non-exhaustive list.

Students should:

- have a sense of the size of a number and where it fits in 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 a 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;

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- 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;
- have some understanding of the measurement of probability and risk;
- explain their methods, reasoning and conclusions, using correct mathematical terms;
- judge the reasonableness of solutions and check them when necessary;
- give their results to a degree of accuracy appropriate to the context.

Monitoring and Evaluation

Raising standards in numeracy across our school, and evaluating the pupils' ability to transfer mathematical skills into other subjects, will be monitored in the following ways:

- The Numeracy Co-ordinator will meet annually with the Head of Mathematics to discuss strategy and develop the Numeracy Policy.
- Other curriculum departments will gather evidence of inclusion of numeracy skills in their subject teaching and report back to the Numeracy Co-ordinator.

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