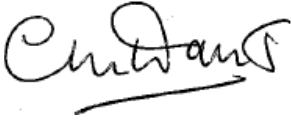





Dean Trust Rose Bridge

NUMERACY POLICY

Version and Date		Action/Notes
1.0	July 2020	Version 1
2.0	July 2022	Version 2
3.0	July 2023	Version 3
4.0		

Policy Reviewed:	July 2023
Next Review:	July 2024
Signature of Chairman of Local Governing Body: 	
Signature of Head Of School: 	

Mission Statement

At Dean Trust Rose Bridge, it is our belief that all teachers are teachers of numeracy. We are committed to developing numeracy skills in all subjects across the curriculum, believing that it will support the learning of all students and raise standards in every subject. We therefore believe that:

- All students should leave Dean Trust Rose Bridge as competent mathematicians who are confident in their ability to apply skills and knowledge learned in the classroom in real-life situations.
- Every teacher is responsible for the development of numeracy regardless of their specialist subject.



- Numeracy should be developed across all areas of the curriculum and the links between subjects should be made explicit to students.

Purposes of Our Numeracy Policy

- To develop, maintain and improve standards in numeracy across the school
- To ensure consistency of practice including methods, vocabulary, notation etc.
- To assist the transfer of the mathematics skill threshold concepts and knowledge threshold concepts between subjects
- To make explicit the interleaving topics across the curriculum so that students do not see numeracy as a mathematics concept in isolation
- To aid and support teachers of non-mathematical subjects so that they themselves become confident using and applying numeracy skills

Numeracy in Mathematics

Mathematics teachers know the importance of applying mathematical concepts to problems in the real world. Though mathematical fluency is very important, teachers find opportunities to embed mathematical reasons and problem solving into every mathematics lesson wherever possible, making explicit links as to where key mathematical concepts can and should be applied in real-life. In addition to this, the maths department does whatever it can to promote the maths used across the curriculum in mathematics lessons. Examples of this include using scientific formula in algebra lessons, geographical charts and graphs in data handling lessons, etc.

At KS3 students at Dean Trust Rose Bridge follow a curriculum that is based on mastery and depth not breadth. This allows students to explore topics in more detail so that they develop an abstract understanding of topics and not just a concrete understanding. This includes allowing students to apply the knowledge and skills covered in variety of ways and in different interleaving topics. Students are also encouraged to explore the generalisation of topics in ways that involve abstract application; for example, using algebraic rather than numerical values. The curriculum doesn't just extend and challenge students but it also revisits prior knowledge year-on-year so that students have the fundamental skills and knowledge to succeed and progress throughout their time at Dean Trust Rose Bridge.

For each unit and topic covered at KS3 there are a number of knowledge threshold concepts and skills threshold concepts that pupils are expected to meet and apply to demonstrate their understanding of the topics. If students don't evidence that they have met the thresholds they are given additional time in RAP lessons to improve and provide the evidence needed. Also included throughout the schemes



of learning for each topic are interlinked career and real-life examples for pupils to see the 'bigger picture.'

At KS4 pupils follow either a foundation or higher GCSE mathematics. The skills and knowledge needed are developed throughout the curriculum and all lessons prepare students for their GCSEs with specific exam activities. Revision sessions are provided before and after school for extra coverage of key topics and skills.

To promote independent study away from the classroom, all year groups are given weekly homework which is set on Google classroom. At KS3 the homework is recall based and is used to consolidate and develop the skills and knowledge that are transferable across interleaving topics in mathematics. These questions also cover and develop the skills that are needed to answer some questions that appear on the GCSE exam papers consistently year-on-year. At KS4 the homework is focused upon GCSE topics. It is a key tool used to consolidate and extend student's understanding of topics that are covered in lessons. These questions range in difficulty and provide students with the opportunity to identify challenging topics and revise them.

Teachers of mathematics at Dean Trust Rose Bridge collaborate a number of times each term to discuss best practice, agreeing on a common and consistent approach to teaching mathematical concepts. In addition to this, the head of faculty meets termly with other trust heads of faculty at the TIP meetings where they work collaboratively to develop schemes of learning and a consistent approach across the trust.

We provide a number of opportunities throughout the school year for pupils to put their mathematical understanding into wider contexts, away from the usual school setting. Opportunities include, but are not limited to:

- Year 7 catch-up sessions during form time. A group of Y10 students' mentor and support year 7 pupils. This is overseen by a maths tutor
- Year 7-10 Mathletes club one lunchtime per week
- Year 7-10 Darts Club one day per week after school
- Year 7-9 STEM club combines maths, science and technology to investigate, design and build
- Year 10 Maths Council members write the newsletter, run maths clubs and mentor low ability pupils
- Top set year 8 and 9 students have taken part in the UKMT Maths Challenge in 2022
- Groups of Year 10 students have taken part in problem solving days at MMU



- Year 11 students have taken part in GCSE skills labs with expert exam markers

Numeracy Across the Curriculum

All teachers at Dean Trust Rose Bridge are teachers of numeracy. Teachers regularly find opportunities to incorporate mathematical concepts into lessons, with the majority of these occurring naturally. Students are encouraged to discuss any mathematics that is taking place in lessons, and posters will be placed at the front of classrooms to prompt students to look for what maths has been used. In the coming academic year, the maths department will regularly request examples of such activities and will look for opportunities to share best practice.

The maths department will work with other departments to ensure a consistent approach and to support changes in curriculum content where there is a greater focus on mathematical concepts, such as in science and geography. An audit of mathematical concepts across the curriculum has been carried out which will help support subject areas with ensuring they are embedding and promoting numeracy and mathematics in as many opportunities as possible. A “Maths Methods Guide” will be given to all staff to refer to so that the approaches to teaching maths is also consistent. Each half term staff are given a Numeracy focus and cpd is delivered to both teaching staff and support staff via the teaching and learning portal. The aim of the cpd is to ensure consistency on approach and notation when mathematical skills are being taught across school. The cpd sessions should also instil confidence in teachers of non-mathematical subjects. Historically maths has a negative image in society due to the perceived difficulty of the subject and sadly this can remain when people qualify as teachers. The sessions will go some way to change this image amongst the teaching and support staff at school.

(Planned for implementation 2022/23) Each department around school will be given their specific numeracy audit map. This is a document that will show teachers of other subjects the cross-curricular links between their subject and maths and when they are taught in the two subjects and also careers that use the combined knowledge of both maths and the non-mathematical subject. The skills threshold concepts and knowledge threshold concepts that pupils use when working on the relevant topics will be explicitly stated. The purpose of this document is to support the planning and teaching of lessons in other subjects that contain mathematical processes. Teachers of these subjects will quickly be able to see when the topic is/was covered in the maths scheme of learning and they can refer to this when instructing pupils to complete their work. To assist in the teaching of the topic in other subjects the relevant Mathswatch video clip reference will be stated so that teachers can use this resource to assist their teaching.

(Planned for implementation 2022/23) A key resource that will be given to each department around school will be which of their past GCSE exam questions need mathematical or numeracy skills to answer. This will take the form of a booklet that will have how the non-maths subject question appears on the relevant GCSE exam paper next to how the same topic appears in the GCSE maths exam. This should be used as a visual prompt to show students how the same skill/knowledge is assessed in two different subjects around school and to make the links between the two. The Mathswatch video link will be included in the document also.

Numeracy Throughout the School

In addition to explicit numeracy in mathematics and all other subjects, Dean Trust Rose Bridge take steps to regularly encourage the use of numeracy skills in many different ways. These include, but are not limited to:

Form Time Numeracy Activities

Every tutor group in Years 7-10 participate in a weekly numeracy activity. Sessions have been specifically designed to provide pupils with the appropriate knowledge that will help them in their future financial decisions. Topics covered include; banking, credit, debt, budgeting, cost of living. Students are encouraged to interact with their form tutor in discussions and activities to gain knowledge of financial products, terminology and potential benefits and risks. The purpose of these sessions is to directly link to the school's mission to best prepare pupils for the future ahead and improve pupil wellbeing.

Themed Days

We find a number of opportunities throughout the school year to promote Numeracy and Mathematics in a way that is in addition to our everyday practice. Examples of these themed days include, but are not limited to:

- World Maths Day (23rd March 2023)
- National Numeracy Day (yearly 18th May)
- International Pi Day (yearly on 14th March)
- Jamboree Day activities e.g. a maths escape room (yearly in July)



Whole School Promotion of Numeracy

We have a number of ways that display the promotion of numeracy throughout the school, which include, but are not limited to:

- Every classroom has a Numeracy poster displayed with the whole school numeracy strategies on it
- Weekly maths problems released on the DTRB Maths newsletter which is written by the Maths Council members. Rewards are given to the first three pupils that submit correct answers
- A maths newsletter is published on a half-termly basis which promotes the work done in school and also the other ways that maths and numeracy are promoted and delivered by Dean Trust Rose Bridge
- House competitions (Maths challenge features once a term)
- Displays in maths exploring links between numeracy and careers
- Pupils are awarded the maths department badge if they fulfil a number of criteria. The selected students are ambassadors for the maths department and take part in open evening/day to showcase maths and numeracy at Dean Trust Rose Bridge. The criteria are:

No behaviour points in maths lessons 100% homework completed Attend or help at a maths extra-curricular club/activity/revision sessions Achieved or mastered their end of unit tests For year 11 attend a minimum of 4 maths revision sessions
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Work with Local Feeder Primaries

The maths department have assisted in taster days and transition days that have taken place for Y5 and Y6 pupils from the local feeder primaries. These are used as a way to showcase the work done by students at Dean Trust Rose Bridge and give primary students a taste of what to expect at secondary school.



STEM Club

A STEM club has been launched this year. The aim of the club is to provide pupils with another way to apply the transferable skills and knowledge across the STEM subjects and bring them all together to work towards completing a project. Pupils who complete 10 plus hours of STEM will receive a Crest award. It is hoped that this will raise and maintain standards of numeracy across school.

Use of Calculators

Every student at Dean Trust Rose Bridge must have their own scientific calculator, as they will be assessed on their use of a calculator in GCSE mathematics. Knowing how to use a calculator effectively is also important for many other subjects now, as the new national curriculum has seen a large increase in the amount of mathematical content now appearing in other subjects.

While we do not dictate which calculator students should buy, it must be scientific, and have the standard scientific functions on it, such as trigonometry (sin, cos and tan buttons), pi (π), powers and roots, and standard form.

Students are not allowed to use the calculators on their mobile phone as pupils are not allowed to have mobile phones on them during the school day. When at home students should also be discouraged from using the calculator on their mobile phone. This is to encourage students to practice using their scientific calculator, which is the only one they will be allowed in assessments and external examinations.

Calculators may be used at the discretion of teachers, but where appropriate, teachers should encourage students to recall mental skills first (e.g. to calculate a simple percentage of an amount, or to +, -, \times or \div simple numbers.)



Numeracy at Home

We are keen to involve parents in our work with developing numeracy and mathematics. Parents are invited to complete a maths problem in the maths newsletter and constructive conversations take place at parents' evenings. In addition to encouraging parents to engage in these opportunities, parents can also do the following to support their child with numeracy at home:

- Be positive about maths and numeracy. Try not to say things like "I can't do maths" or "I hated maths at school." Your child may start to think like that themselves.
- Point out the maths in everyday life. Include your child in activities involving numbers and measuring, such as shopping, cooking and travelling.
- Praise your child for their effort rather than being 'clever.' This shows them that sometimes we may not be able to achieve something first time but by working hard they can always improve
- Encourage conversations about financial mathematics and improve your child's knowledge and use of financial language