KING EDWARD VI
HANDSWORTH GRAMMAR
SCHOOL FOR BOYS

KING EDWARD VI
ACADEMY TRUST
BIRMINGHAM

HGS MATHS

START OF YEAR INFORMATION
YEAR 13

www.hgsmaths.com

Introduction

This short presentation will outline how we will work in mathematics.

We will look at:

- **Reminders**
- **Booklets – Student and Task**
- **Exercise Book and Equipment**
- **Homework and Retrieval Practice**
- **Survey and Good Habits**
- **Assessments**
- **A Level Mathematics and A Level Further Mathematics**
- **Online Platforms – HGS Maths, Dr Frost and Active Learn**
- **Revision and Past Papers**
- **Enrichment**
- **Support**
- **Motivation and Success**

Reminders

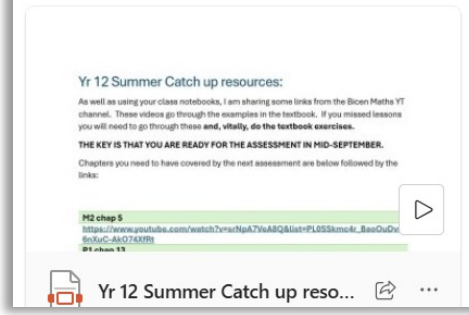
- **Before the holidays you were sent the following Teams posts:**

1. Many of you have missed out on lessons due to work experience and other extracurricular activities. However, **it is vital that you cover this content as it will NOT be re-taught in year 13.** Contact your teachers to find out how to catch up. If you need printed booklets see Mr Dhillow as I have lots of spares in my office next to the staff room.
2. **IN YEAR 13 YOU WILL HAVE A TEST ON THE FOLLOWING CONTENT AT THE START OF TERM.** We will take this into account when deciding your final UCAS grades. Therefore, it is vital you do what I said in point 1 above.
3. **IF YOU GOT LESS THAN A GRADE C in your EoY Maths exam** – you must do the DFM task assigned to your called **YR 12 SUMMER INTERVENTION TASK**

MATHS SUMMER RESOURCES AND SEPT TEACHING PLAN

Year 12 2024 Please read the attached carefully which covers:

- resources to cover the work which will be covered in the Sept assessment (1st page)
- Which chapters you teachers will begin with (2nd page)

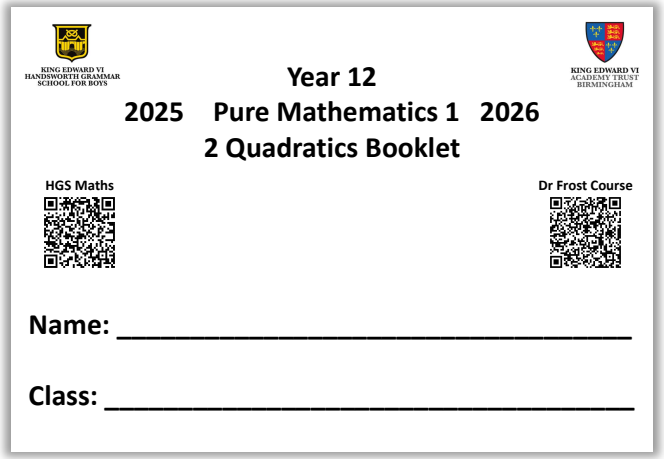


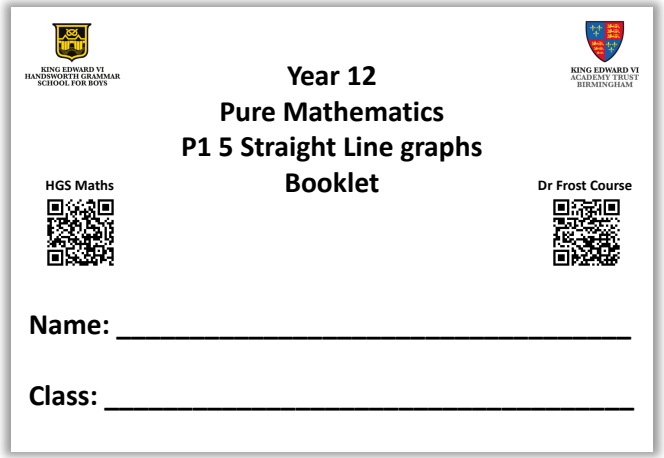
Mechanics 2	
Chapter 5 - Forces and Friction	5.1 - 5.3
Pure 1	
Chapter 13 - Integration	13.1 - 13.7
CA4 End of Year w/c 09/05 **FR**	
Mechanics 1	
Chapter 11 - Variable Acceleration	11.1 - 11.5
Pure 1	
Chapter 14 - Exponentials and Logarithms (Part 2)	14.2 - 14.3 & 14.7 - 14.8
Mechanics 2	
Chapter 4 - Moments	4.1 - 4.5

Pure 2	
Chapter 5 - Radians	5.1 - 5.5
Statistics 1	
Chapter 5 - Probability	5.1 - 5.4
Statistics 2	
Chapter 2 - Conditional Probability	2.1 - 2.5
Statistics 1	
Chapter 6 - Statistical Distributions	6.1
Statistics 1	
Chapter 1 - Data Collection	1.1 - 1.5
Statistics 1	
Chapter 4 - Correlation	4.1 - 4.2
Statistics 2	
Chapter 1 - Regression, Correlation and Hypothesis Testing	1.1 - 1.3

Student Booklets

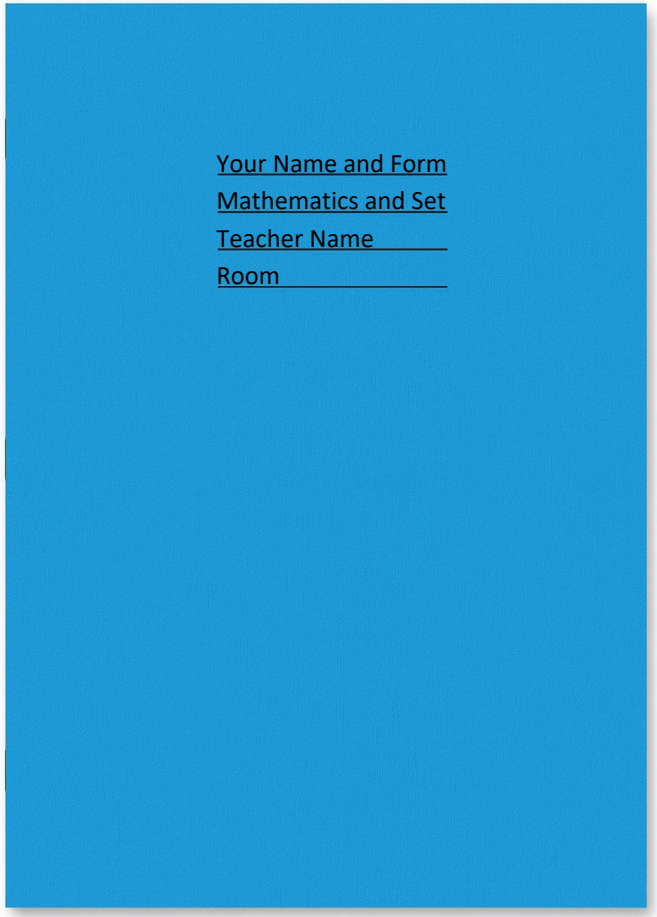
- All notes and examples will be completed in printed booklets.
- You must keep your booklets neat and up to date.
- **You will take the booklet home and must bring it to every lesson.**
- It is recommended that you buy a folder to keep these in, as well as any other paper or worksheets printed for you.
- An electronic version of the booklets will be available on your **OneNote Class Notebook** so you can stay up to date.





Exercise Book

- This is your book for all classwork and homework exercises. You should keep it neat.
- All **classwork** is done at the **front** of the book.
- All **homework** is done at the **back** of the book.
- All marking will be done through self-assessment or peer assessment.
- You should always include:
  - **Dates**
  - **Headings**
  - **Margins**
- **You must take this book home and bring it to every lesson.**



Equipment

- You must bring the following equipment to every lesson, along with your exercise book:
  - **2 pens (ideally black)**
  - **1 red or green pen**
  - **Pencil**
  - **Ruler**
  - **Sharpener**
  - **Eraser**
  - **Calculator (Casio fx-991CW)**

- The calculator can be purchased from the school – details will be posted on Microsoft Teams.

Fake Calculators

- Fake **Casio** calculators are being sold online.
- They look and feel real – but give wrong answers.

How to Buy Safely:

- Buy from school – it's cheaper and guaranteed genuine.
- Or buy from trusted shops like Tesco, Asda, or WHSmith.
- If using Amazon, only buy direct from Casio or "Sold by Amazon" (not third-party sellers).

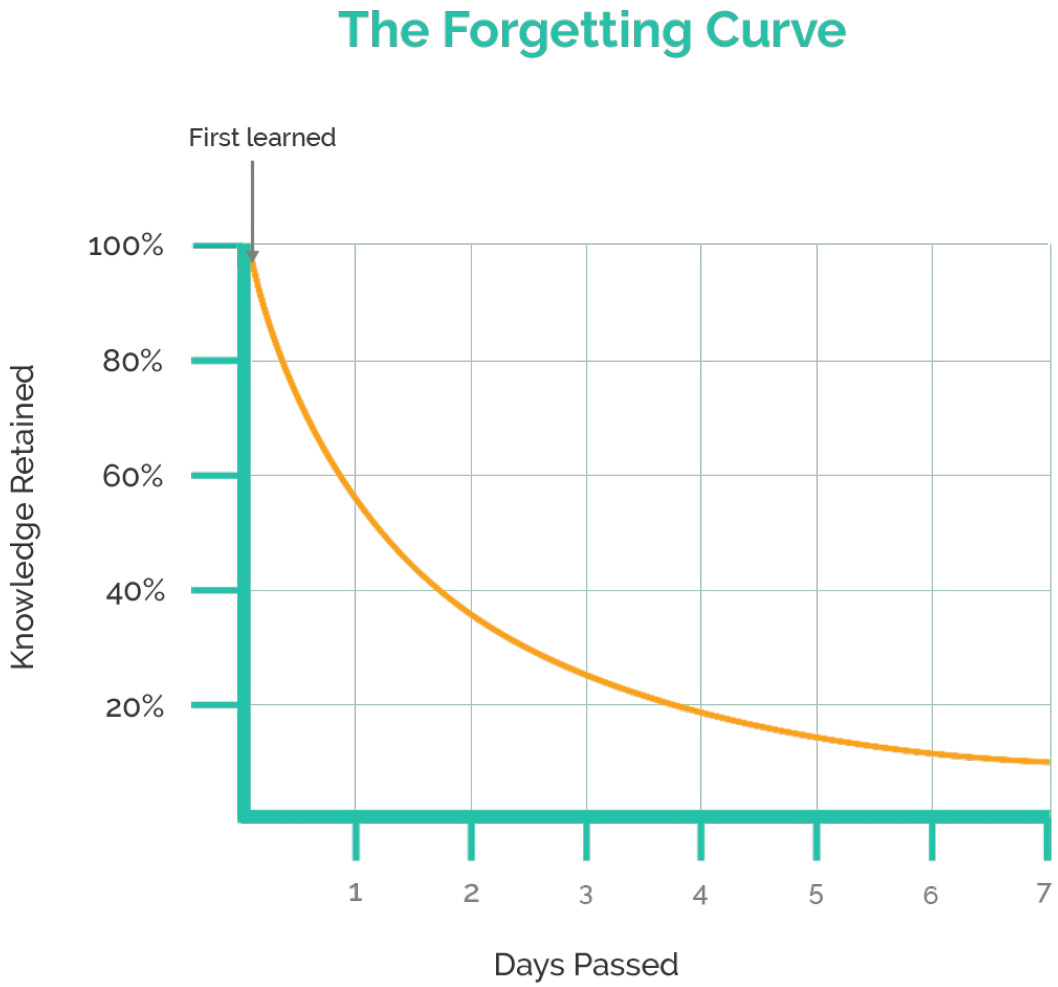
Homework

- You will receive **three homework tasks per week**. They will be **recorded on Satchel One**.
- One homework will be a retrieval task set online using Dr Frost, completed by the entire year group. This begins after half term for Year 12.
- The **other 2 homework tasks** will be set by your classroom teachers. This could be another Dr Frost task or an exercise from the textbooks.
- **Always show your working at the back of your blue exercise book for any Dr Frost homework.**
- **If you score 100% on a Dr Frost homework, you will be awarded a house point.**
- **If you fail to complete your homework, you will be sanctioned (see the policy below).**

Stage	Sanction	Contact
1	Verbal warning/reprimand	Email FT/Parent
2	Short teacher detention (5 minutes)	Email FT/Parent
3	Longer teacher detention (break or 15 minutes after school)	Email FT/Parent
4	Department detention (30 minutes)	Email FT/Parent and HoY
5	Department detention (45 minutes)	Call home + Email FT/HoY
6	Department detention (60 minutes)	Call home + Email FT/HoY
7	Whole school – parents called in	HoD/HoY meeting

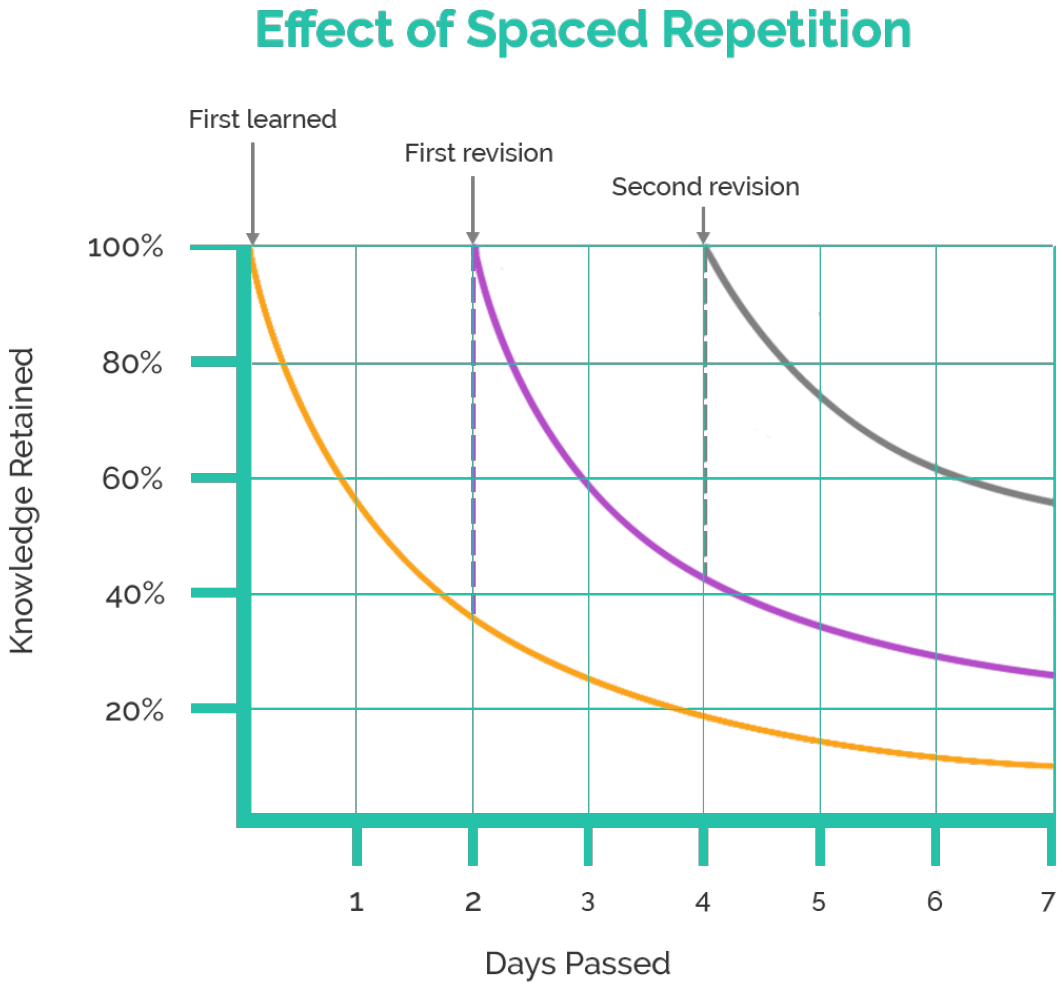
Retrieval Practice – What Is The Point?

- **Bad news:** We forget new information quickly after learning it.
- **Steep forgetting curve:** Memory fades rapidly unless reinforced.
- **Normal brain function:** The brain filters what's worth remembering based on repetition and importance.
- **One-time exposure isn't enough:** If you only think about something once, the brain likely won't retain it.



Retrieval Practice – What Is The Point?

- **Good news:** Actively trying to recall information slows forgetting.
- **Retrieval signals importance:** Each effort to recall tells your brain the memory matters.
- **Repeated retrieval strengthens memory:** The more you retrieve it, the more deeply it's embedded.
- **Practical tip:** Try to recall material during repeated tasks (like RP homework, Do Now, Entrance Tickets, or quizzes).
- **Why it matters:** Using your memory this way helps you retain knowledge long-term.



Survey

If you could have told yourself ONE thing at the beginning of year 12 to have made a better start to A level Maths, what would it have been?

Responses from year 13 students:

- **Do every single textbook exercise as homework as soon as it is set**
- **Try to do past paper questions as soon as you can**
- **If you don't understand something, ask someone and try to watch YouTube videos that explain topics you struggle with**
- **Pre-read content before the lesson**
- **Revise more consistently and more often**
- **DO NOT underestimate the jump from GCSE to A level, it takes many more hours of work**
- **Start on entrance exams earlier, e.g., STEP, ENGAA, etc.**

Good Habits At Home

To succeed in maths, you need good habits at home:

- **Get enough sleep**
  Aim for 8-10 hours – your brain needs rest to focus and learn.

- **Avoid distractions**
  Do homework somewhere quiet, without phones or games.

- **Use technology wisely**
  Tools like ChatGPT can explain topics clearly, but it is important that you try the work yourself.

- **Build a routine**
  Set a regular study time each day. A little every day is better than cramming.

Assessments

- You will complete **entrance and exit tickets in class** to check your understanding of current or previous work.
- You will also have **formal assessments throughout the year.**
- There will be a **separate end-of-year exam**.
- **The scheme of work and assessment schedule is shown on the right-hand side.**

Teacher 1 - Pure and Mechanics		Teacher 2 - Pure and Statistics	
Pure 1 and Pure 2 Chapter 7 - Algebraic Methods and Chapter 1 - Algebraic Methods Proof	P1 7.4 - 7.5 & P2 1.1	Pure 2 Chapter 1 - Algebraic Methods	1.2 - 1.5
DEPT INTERVENTION w/c 15/09 (2 weeks)			
Pure 2 Chapter 2 - Functions and Graphs	2.1 - 2.7	Pure 2 Chapter 6 - Trigonometric Functions	6.1 - 6.5
Pure 2 Chapter 3 - Sequences and Series	3.1 - 3.8	Pure 2 Chapter 7 - Trigonometry and Modelling	7.1 - 7.7
CA1 1st Mock w/c 17/11 (2 weeks) **PR1**			
Pure 2 Chapter 4 - Binomial Expansion	4.1 - 4.3	Pure 2 Chapter 8 - Parametric Equations	8.1 - 8.5
Pure 2 Chapter 9 - Differentiation	9.1 - 9.10	Statistics 1 Chapter 6 - Statistical Distributions	6.2 - 6.3
Pure 2 Chapter 12 - Vectors	12.1 - 12.4	Statistics 2 Chapter 3 - The Normal Distribution	3.1 - 3.7
Mechanics 2 Chapter 6 - Projectiles	6.1 - 6.4	Statistics 1 Chapter 7 - Hypothesis Testing	7.1 - 7.4
CA2 2nd Mock w/c 02/03 (2 weeks) **FR**			
Mechanics 2 Chapter 7 - Applications of Forces	7.1 - 7.6	Pure 2 Chapter 11 - Integration	11.1 - 11.11
Mechanics 2 Chapter 8 - Further Kinematics	8.1 - 8.5	Pure 2 Chapter 10 - Numerical Methods	10.1 - 10.4

A Level Mathematics

- Exam board: **Edexcel**.

- You will sit three papers at the end of Year 13:
  - **Paper 1: Pure Mathematics 1**
  - **Paper 2: Pure Mathematics 2**
  - **Paper 3: Statistics and Mechanics**

- Each paper is **2 hours**, worth **100 marks**.

- All papers are **calculator papers**.

- A **formula booklet** will be provided in the exam.

A Level Further Mathematics

- Exam board: **Edexcel**.

- You will sit four papers at the end of Year 13:
  - **Paper 1: Core Pure Mathematics 1**
  - **Paper 2: Core Pure Mathematics 2**
  - **Paper 3: Further Pure Mathematics 1**
  - **Paper 4: Further Pure Mathematics 2**

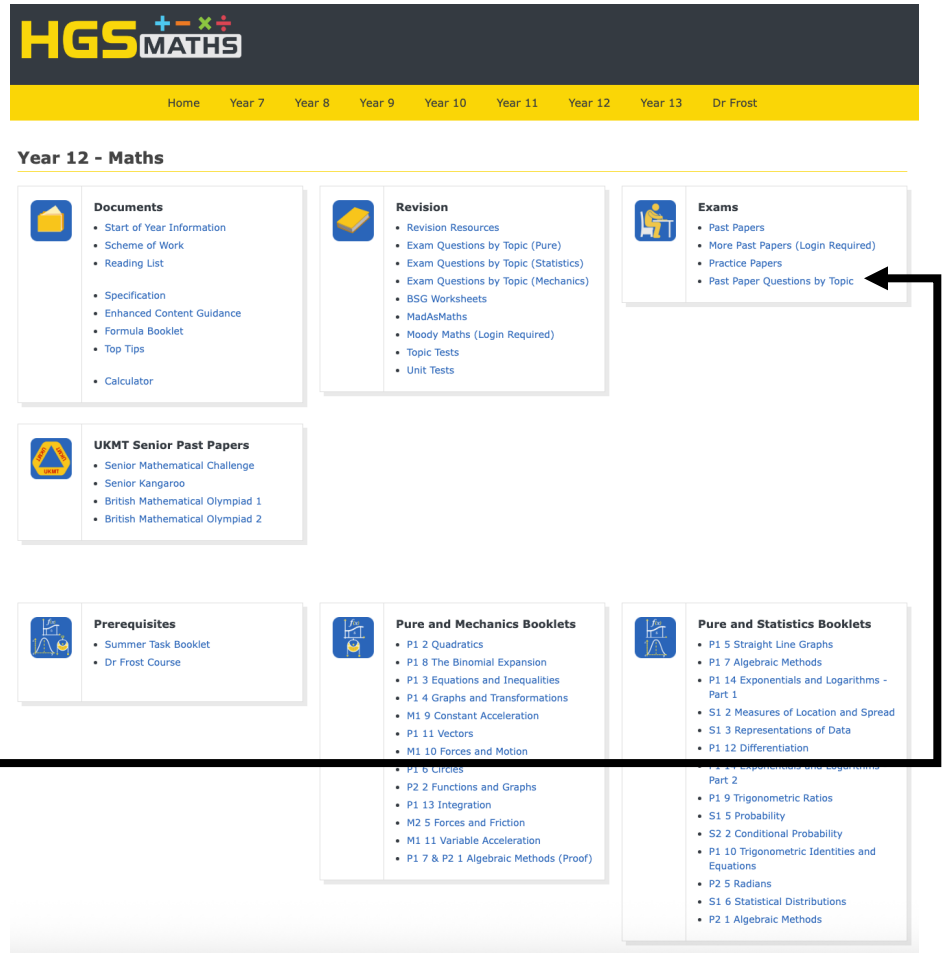
- Each paper is **1 hour 30 minutes**, worth **75 marks**.

- All papers are **calculator papers**.

- A **formula booklet** will be provided in the exam.

Website

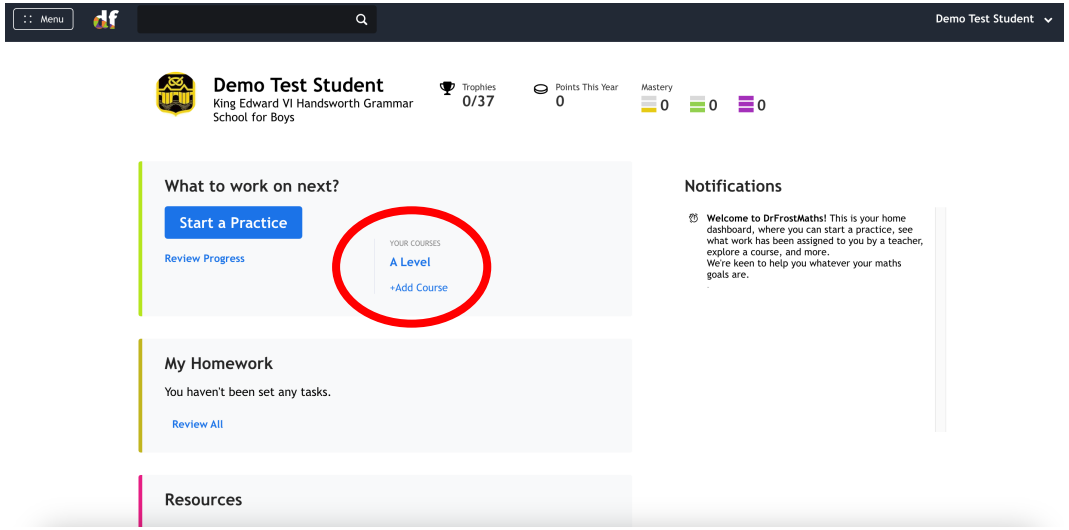
- The documents section contains the **scheme of work, a reading list of mathematical books, the specification, and the formula booklet**.
- The revision section contains resources with links to **PowerPoints, videos, questions by topic, and practice papers**. It also includes **BSG worksheets, topic tests, and unit tests** for you to use.
- The exams section contains all **past papers and practice papers**.
- **The recommended resource for past paper questions is the following link.**
- The booklets can be accessed using the links in the boxes at the bottom of the page.

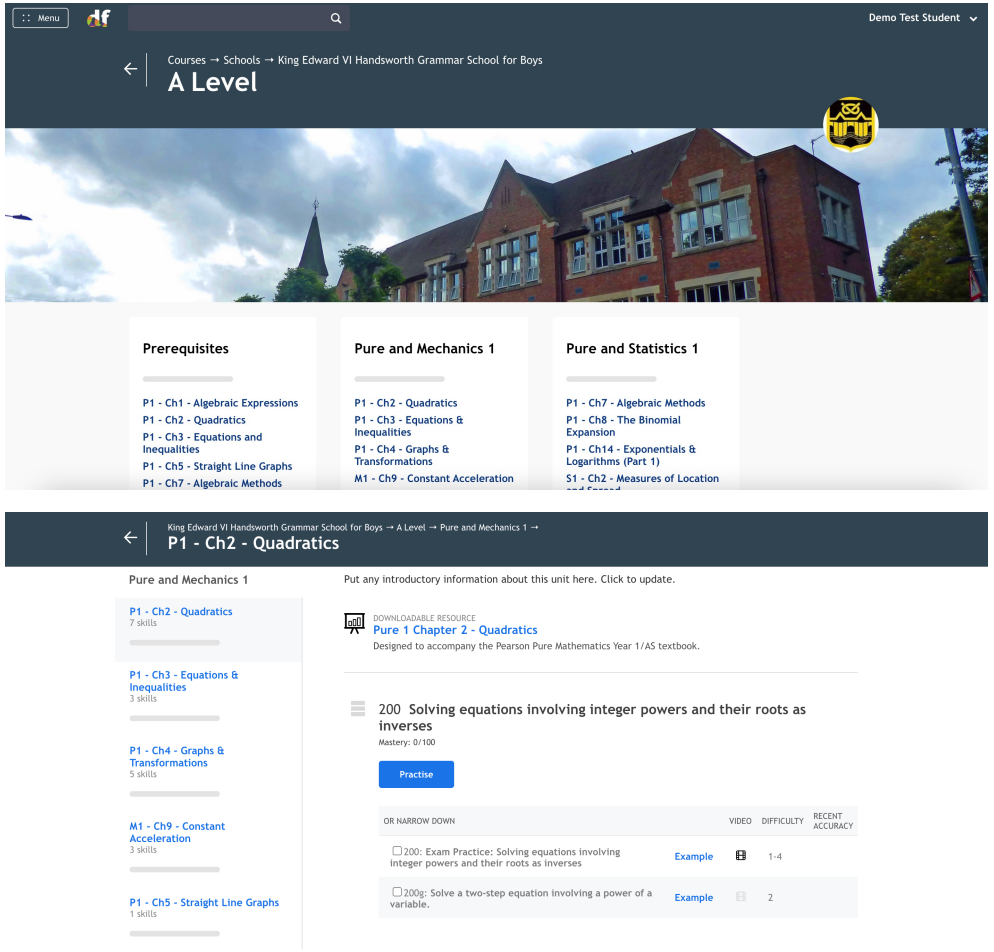


Dr Frost

- **We have uploaded our curriculum to Dr Frost** so you can easily complete independent work based on what you have covered in lessons.

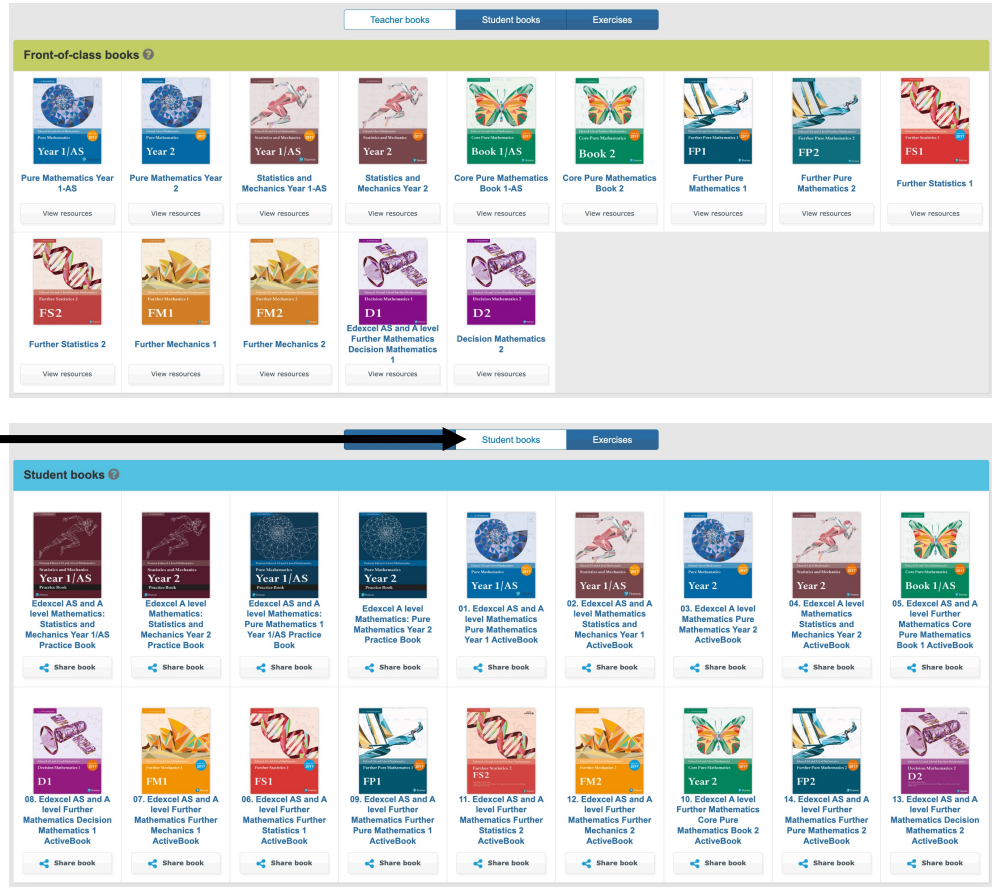
- In each course, you can **click through to the chapter and topic you want to practise, and complete key skills or exam-style questions**.





Active Learn

- You will find your online A Level textbooks here.
- Extra practice books are available under the "Student Books" tab.
- Login details will be provided soon.



Revision

You remember what you practise, not just what you look at.

- **Don’t just read notes** – practise questions regularly.
- **Use your booklets, Dr Frost, and past papers** to practise and test yourself.
- **Focus on topics you find hard**, not just favourites.
- Use your exercise book to write out full solutions and working.
- Mark your answers and learn from mistakes.
- Little and often is more effective than cramming.

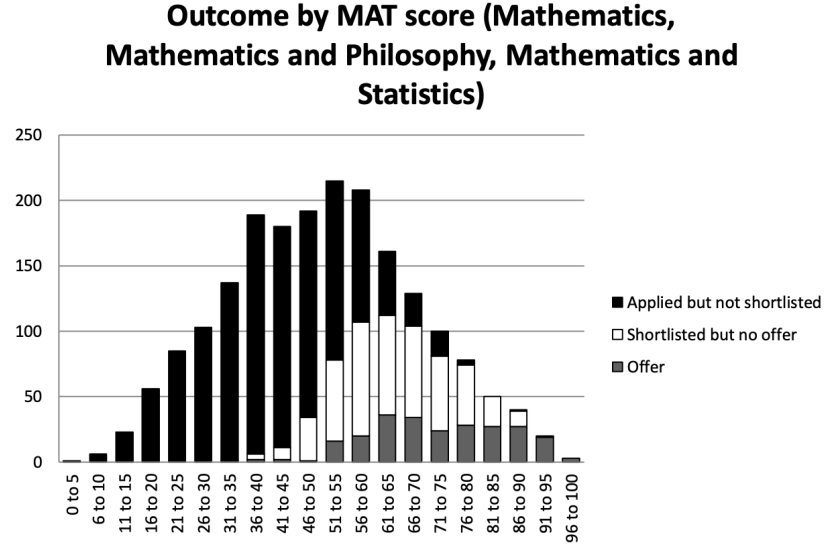
Past Papers

- **Start using past papers throughout Year 13.**
- Use the ones on the HGS Maths website or Dr Frost.
- **Do them under timed conditions where possible.**
- Focus on showing full working – marks are often in the method.
- Mark it yourself (use the official mark scheme or worked video).
- Review mistakes. Don't just move on – fix the gaps.
- **If you are not sure why an answer was wrong, ask at the Maths Clinic.**

Senior Maths Challenge – Thursday 9 October 2025

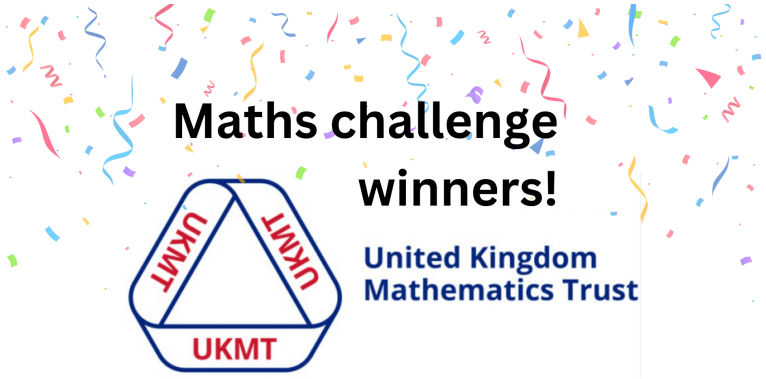
- National mathematics competition organised by the UK Maths Trust – a charity promoting advanced maths problem solving in schools.
- Success isn't easy, but if you achieve it, it means a lot: **university scholarships, mentorships, UCAS recognised certificates etc.**
- Depth not breadth. Questions are based on problems that test how deep your knowledge is. Famously no calculus.
- There is everything to gain, and nothing to lose. There are rewards for students who do well – but if you don't, nothing bad happens.

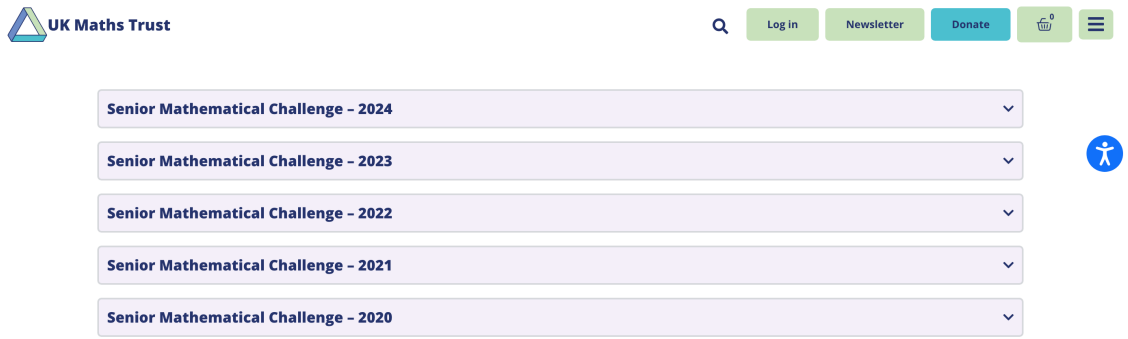
UK Maths Trust



Senior Maths Challenge – Thursday 9 October 2025

- Develop your ability to solve more complicated problems, like the ones in entrance exams.
- **Treat it like a mock for entrance exams.**
- **To practise, complete lots of past papers (you can find links on hgsmaths.com).**
- **Weekly support sessions are available if you would like extra help.**





Support

- Your mathematics teacher is your first point of contact for any questions related to your mathematics learning.
- **You can speak to them in person before school, at break, lunch, or after school.**
- **You can also message them on Teams or send a polite email using your school account.**
- You can ask about **homework, something you didn't understand in class, or help before a test**.
- Don't expect an instant reply to emails or Teams messages. **It is best to ask in person, and well before your homework is due or a test is coming up.**

Maths Clinic

There are two **break time clubs** running for Mathematics. These will be on **Tuesday**.

ROOM 27 – Maths Challenge and Admissions Test

- Prepare for the Senior UKMT Challenges Practising questions from the challenges.
- TMUA, MAT, STEP, etc. questions and activities.

On some Enrichment days there will be dedicated sessions to both inform you about what admissions tests are and how we can support you with them.

We will also visit University Mathematics departments in the summer term.

ROOM 20 – Mentoring and Intervention

- If you need extra help, support and guidance Mr Dhillow (head of department) alongside sixth form mentors are available.

WE ARE LOOKING FOR VOLUNTEERS TO BE MENTORS TO LOWER SCHOOL AND YEAR 12s!

This is certainly something worthwhile that you could mention on your UCAS applications.

A Teams post will be out soon.

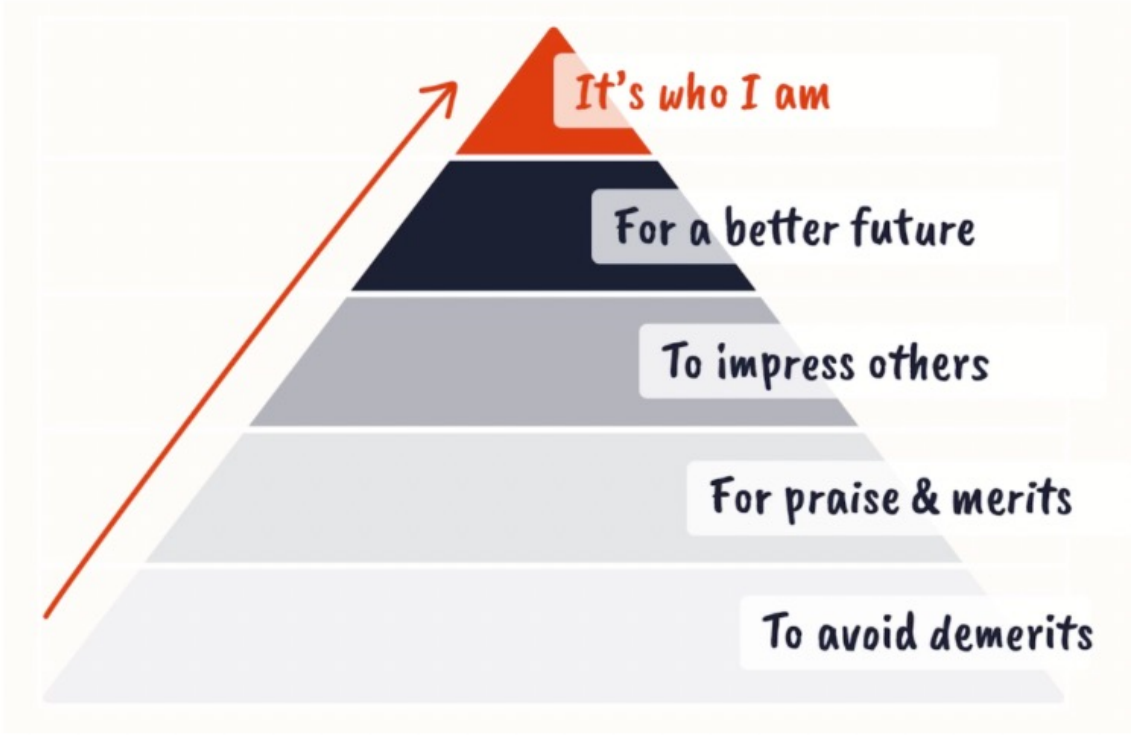
Details will be confirmed on Microsoft Teams.

Motivation

This pyramid shows different reasons why you might do the right thing – like doing homework, behaving, or working hard.

- **To avoid demerits**
  "I just don't want to get into trouble."
- **For praise & merits**
  "I want a reward or recognition."
- **To impress others**
  "I want people to think I'm clever or hardworking."
- **For a better future**
  "This will help me later in life."
- **It's who I am**
  "Doing the right thing reflects my values."

The higher you go, the more your actions reflect your identity, not just rewards or pressure.

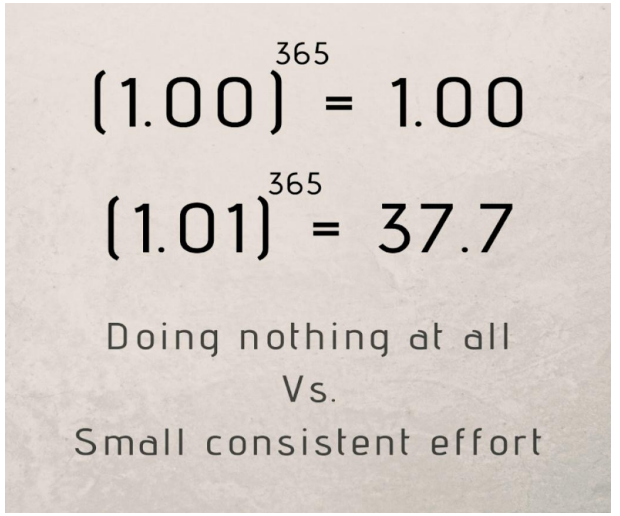


Success

You don’t have to be the best – just be consistent and improve.

- Completing all homework, including retrieval.
- Asking for help when needed.
- Showing full working and using correct methods.
- Taking pride in presentation and effort.
- Supporting your classmates and using support sessions.

Take small steps every day – progress adds up.



What Is Next?

That’s it! You're ready to start your Maths journey!

- You have the resources.
- You know the routines.
- You know how to get support.

Now it’s all about effort, curiosity, and making the most of every lesson.

Quick Reminders

- Bring your equipment every day.
- Complete your homework on time.
- Ask questions — that’s how you learn.

Aim for progress, not perfection.

We’re here to help you succeed — and enjoy the process too.

Need help or stuck on something?

You can email your teacher or send a message on Teams.