ALTRINCHAM COLLEGE

MATHS DEPARTMENT NEWSLETTER

Autumn 2024 (ISSUE 5)

Maths is my SUPERPOWER
Being able to use Maths to problem solve, predict or support an opinion are very powerful skills. The Maths we learn in school is laying the foundations and working towards being confident and applying these skills once we leave school.

The students with the most positive points on ClassCharts since September for their readiness and contribution to their Maths lessons were:
S F-H y8
LC y8
CM y8
HM y8
Well done to all these students.

MATHS TEAM

Miss Whitworth
Head of Department
LWH@altrinchamcollege.com

Mr Mohammed
Second in Department
IMD@altrinchamcollege.com

Mrs Witchalls
Head of Year 11
EWS@altrinchamcollege.com

Mrs Hudson-Kirkham
Designated Safeguarding Lead
JHK@altrinchamcollege.com
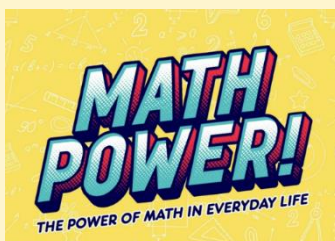
Mr Hill
Teacher of Maths
CHI@altrinchamcollege.com

Miss Bragg
Teacher of Maths
EBG@altrinchamcollege.com

Mrs Jones
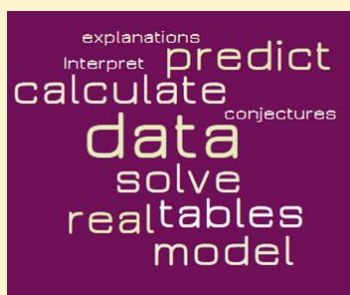**Teacher of Maths**
EJS@altrinchamcollege.com

Mr Spendley
Teacher of Maths
HSY@altrinchamcollege.com

Welcome (back) to Mrs Jones –

Hi everyone, I am Mrs Jones and I am the newest member of the Mathematics Department at Altrincham College.

I qualified as a Secondary Mathematics Teacher in September 2008, and started my first teaching job here, at Altrincham College of Arts as it was called at the time. I worked at Altrincham College until December 2021, when I took a break for a couple of years to look after my young family. During this time, I also worked as a private tutor, tutoring pupils both online and in person for their GCSEs and A-Levels. I was really excited to return to Altrincham College this year, and I'm really enjoying being back in the classroom.

In my spare time, I like to spend time outdoors, going for walks, and I also enjoy baking with my children.

www.altrinchamcollege.com

What is POWEFUL about the maths I am learning this month?

Year 7	Working with Fractions	To move **freely and confidently** between fractions and decimals using them to **calculate and support predictions, explanations, and conjectures** in the workplace.
Year 8	Compound units Sequences	To form, substitute and solve **equations in real life contexts**. To spot patterns and links to **predict and model problems.**
Year 9	Graphs	**Interpret data that is summarised and represented** in a variety of ways (tables and charts), and to represent data using charts and tables, as well as to **compare data** sets that have been represented in this way.
Year 10	Algebraic equations	Form, substitute and solve equations in real life contexts to **predict, solve and model problems.**

- **Maths improves brain function**: Maths proficiency enhances brain regions linked to attention and decision-making, boosting cognitive abilities.
- **Maths helps with time-telling**: Understanding fractions and maths concepts is essential for reading analogue clocks accurately.
- **Maths aids financial management**: Maths skills help manage budgets, balance accounts, and avoid debt.
- **Maths enhances cooking and baking**: Maths allows for easy conversions and adjustments when cooking or baking, ensuring correct measurements.
- **Maths improves problem-solving skills**: Maths develops critical thinking and reasoning, essential for solving real-life problems.
- **Maths is essential in many careers**: Maths is used in various professions, from retail to manufacturing, for tasks like budgeting, calculations and analysing data.
- **Maths helps us understand the world**: Maths provides a deeper understanding of patterns in nature, technology, and daily life.

www.altrinchamcollege.com

Going beyond the classroom

The **UKMT Maths Challenge** competitions are the UK's biggest and most popular maths competitions. www.ukmt.org.uk/

The UKMT Senior Maths Challenge took place on Tuesday the 1st October. Altrincham College had 17 entries across Year 12 and Year 13 all with varying levels of success. OJ got "Best in School" receiving the Silver Award whilst LT also received a Silver Award "Best in Year Group".

What is the UKMT and are there other challenges?
The UKMT runs a series of mathematics challenges to encourage children's interest in mathematics and to develop their problem-solving skills. The Intermediate Challenge runs for our Y9, Y10 and Y11 students and The Junior Maths Challenge runs for our Year 7s and Year 8.

29th January 25	1st May 25
Intermediate Mathematical Challenge	**Junior Mathematical Challenge**

If you are looking for resources to use at home, try the link below for a calendar of activities that can be used to support Maths development outside of school:

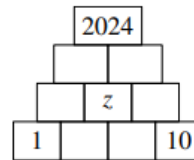https://www.stem.org.uk/home-learning/secondary-maths

The challenges are full of mind-bending maths puzzles. **Why not have a go yourself with this question taken from this year's challenge**:

The diagram shows a partially completed number pyramid. When correctly completed, the number on any brick above the bottom row should be the sum of the two numbers on the two bricks on which it rests.

What number should appear on the brick marked 'z'?

A 176   B 617   C 671   D 716   E 761

Question: I am in year 7-11. Will I be doing the UKMT?

Answer: Your teacher will have told you if you are taking part in the challenge. Year 9, 10, 11 on 29th January. Year 7 and 8 on 1st May.

There are challenges set for you on Dr Frost to help you warm up and prepare for the challenges.
Username: your school email address. Password: Password1 – or reset with "forgot my password"

My Homework

✗ Junior Maths Challenge 2004

Practice papers and solutions can also be found on the UKMT website:
Intermediate: https://ukmt.org.uk/competition-papers/jsf/jet-engine:free-past-papers/tax/challenge-type:70/#free-past-paper-anchor
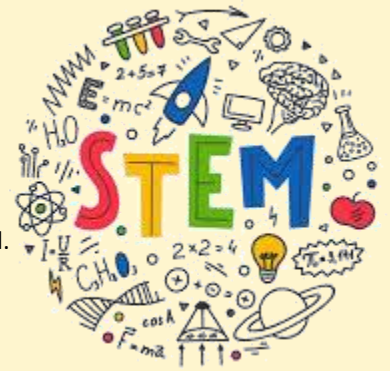
Junior: https://ukmt.org.uk/competition-papers/jsf/jet-engine:free-past-papers/tax/challenge-type:67/#free-past-paper-anchor
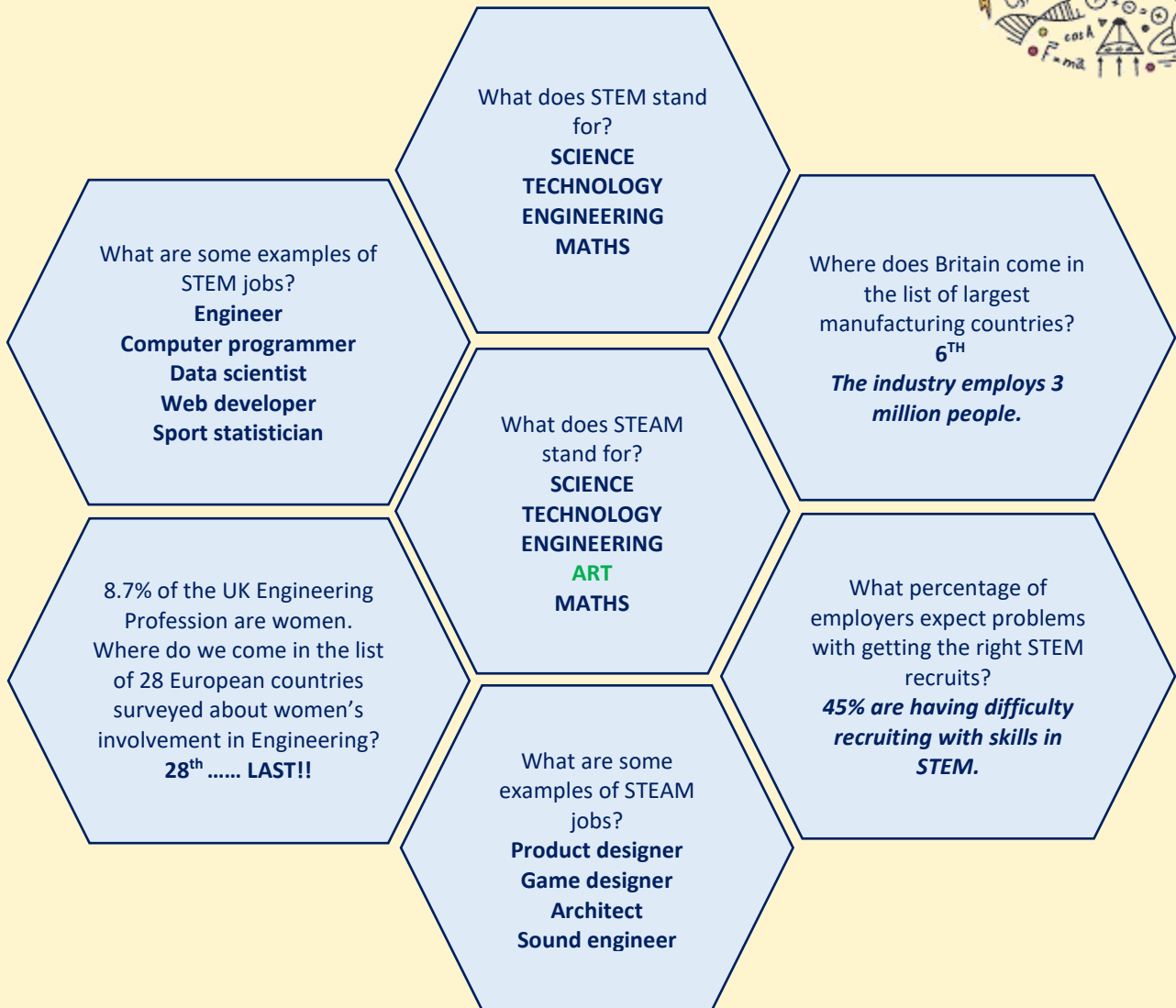
www.altrinchamcollege.com

Career in focus

Instead of focusing on one career, I would like to bring to your attention the **STEM** working world.

What does STEM stand for?
SCIENCE
TECHNOLOGY
ENGINEERING
MATHS

What are some examples of STEM jobs?
Engineer
Computer programmer
Data scientist
Web developer
Sport statistician

Where does Britain come in the list of largest manufacturing countries?
6TH
The industry employs 3 million people.

What does STEAM stand for?
SCIENCE
TECHNOLOGY
ENGINEERING
ART
MATHS

8.7% of the UK Engineering Profession are women. Where do we come in the list of 28 European countries surveyed about women's involvement in Engineering?
28th ...... LAST!!

What percentage of employers expect problems with getting the right STEM recruits?
45% are having difficulty recruiting with skills in STEM.

What are some examples of STEAM jobs?
Product designer
Game designer
Architect
Sound engineer

I TEST THE GEARS

3D OBJECTS

www.altrinchamcollege.com

Altrincham College

Maths in the News

As part of Maths lessons here at Altrincham College, we always give students the opportunity to discuss how and where the mathematics they are learning is featured within the world around them - giving them food for thought on potential careers paths but also a platform for discussion about how they feel about what is featured within the news mathematically.
This term has been no exception!

As the political landscape has changed over the course of the last few months, we've established that everyone has been impacted in some form or another! A topic that has caught our students' eyes and resulted in some open discussions has been…Student Finances – Is it worth it? Does every career need a graduate degree?

It has been interesting to hear pupils discuss the average debt for students who started their course in the UK in 2022-23 is £45,600, according to the Student Loans Company. Since the 2012 student loan plan was implemented by the previous government, most graduates have also been faced with interest rates of Retail Price Index plus up to 3 per cent depending on their income. The new Labour government has a myriad of problems to solve in the education sector, with around 40 per cent of UK universities facing budget deficits this year.

Tuition fees: How much does university cost in the UK?
4 December

https://www.bbc.co.uk/news/education-62237170

We've had opportunities to test out some of the proposed government changes mathematically in lessons and calculate the real costs of student loans using a vast array of maths which has included,

• Compound Interest
• APR and Repayment Methods
• Percentage Changes
• Tax Calculations

Youth to get 'guaranteed' training in jobs overhaul

https://www.bbc.co.uk/news/articles/cqxwv3n87g4o

Here at Altrincham College, we encourage everyone to maximise their potential whatever path they choose to follow. With the increase of non-academic traineeships, companies offering in house fully funded courses and the rise of many young entrepreneurs who go on to become successful business owners…it has certainly opened the minds of our pupils as to the many alternative routes that are available beyond a traditional university course.

Altrincham College

www.altrinchamcollege.com

Springboard To Exams… Year 11 and Year 13 Students

This term has been a busy one with exams taking place for final year students, completing their mock examinations in both GCSE & A Level. Pupils performed extremely well and by now all students will have received:

- Feedback
- Their physical exam papers
- Guidance from their class teacher detailing individual achievements
- What they should be focussing on over the coming months to maximise their outcomes in Summer 2025.

The festive period will hopefully provide some down time for pupils after all their hard work during the exam season, but we would also encourage you to utilise this break as an opportunity to reflect on yours / your child's results.

- What worked well?
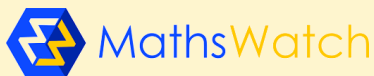- Plan revision timetables ready to hit the ground running in January.

We will of course continue to support in keeping this momentum going on their return with after school revision drop-in sessions recommencing. The first session will be on **Tuesday 14th January in the hall and will then continue every Tuesday after school until 4pm.** This is a great opportunity for students to practice exam questions within a supportive environment with both peers and maths teachers available. Year 13 are also offered drop-in sessions on Tuesdays, in room C0-13.

Everyone is Welcome.

In addition, and as always, pupils are encouraged to continue with learning outside of the classroom. We highly recommend these platforms as part of your independent studies. These websites feature a range of exam questions, past examination papers (with mark schemes) and detailed step by step guidance on how to tackle mathematical problems for individual topics.

Year 11 only
Mathswatch – www.mathswatch.co.uk

Year 11 and year 13
MathsGenie – www.mathsgenie.co.uk
Dr Frost Maths – www.drfrost.org

Year 13 only
ActiveLearn – www.pearsonactivelearn.com

Lastly, with only 20 weeks! to go until the first exam, key GCSE examination dates are.
GCSE
Thursday 15th May: GCSE AQA Paper 1 Non-Calculator 90 Minutes
Wednesday 4th June: GCSE AQA Paper 2 Calculator 90 Minutes
Wednesday 11th June: GCSE AQA Paper 3 Calculator 90 Minutes
A-Level
Wednesday 4th June: A-Level Edexcel Paper 1 Pure Mathematics 2 hours
Thursday 12th June: A-Level Edexcel Paper 2 Pure Mathematics 2 hours
Thursday 19th June: A-Level Edexcel Paper 3 Statistics & Mechanics 2 hours

www.altrinchamcollege.com