ALTRINCHAM COLLEGE

MATHS DEPARTMENT NEWSLETTER

Spring 2022 (ISSUE 1)

"Mathematics is the poetry of logical ideas." — Einstein

Student voice: What some of the students think about Maths at Altrincham College

"Maths is more interesting when we relate it to the real world." NG y10

"I am really enjoying Maths in year 10 as I feel like I am learning something new. Something I didn't know yesterday." LCS y10

"After an assessment, ever since year 7, we get our own Personalised Learning Checklist. This means I can see which areas I need to improve and which Mathwatch video clips I need to revise from." JC y11

We ❤️ **Maths**

The students with the most positive points on Classcharts in the autumn term for their readiness and contribution to their Maths lessons were:
- L-G A in 8-5
- C B in 8- 4
- E S in 8-6
- F H-W in 10-3

Well done to all these students!

As Maths teachers we obviously love the world of maths! We love the beauty of Fibonacci in nature, the human body and even music,* and the way it allows us to think through problems and process our thoughts logically. Most importantly, we love that every day we get to share these fundamental pieces of knowledge with all of our students, to help set them up to enjoy maths beyond the curriculum at Altrincham College, and to become confident young adults as they head out into the working world. We hope that one day when they are sat in an office analysing the profits of the company they work for (or own themselves) they will think back to their statistics work they began in year 9. If they are pricing up work and estimating jobs in the construction industry we hope they recall their estimation knowledge from year 7 and can apply their understanding of geometry from year 9 to finding areas and perimeters. If they are modifying a prototype in the mechanical engineering industry, we hope that they apply their knowledge of mechanics from year 12 and 13. Or as we all love to do, if they are out, spending their well-earned cash, they are able to remember their number fluency all the way though school by being able to compare best buys or work out a percentage off in a Christmas sale.

Maths Video

*There is a **great BBC series** by Hannah Fry you may want to explore. Here is the episode where we discover how the Fibonacci sequence appears in nature in many ways:
https://www.youtube.com/watch?v=cyvDG8qjt-M

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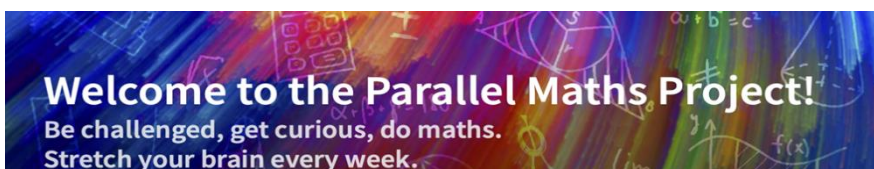EBG@altrinchamcollege.com

Going beyond the classroom - Maths

The Maths Masterclass Tutorials

This year we have our first students taking part in the excellent **Maths MasterClass Programme**. Students have been selected by the programme from schools across the UK. Our students who have joined the programme are settling into it very well.

The tutorials stretch students through weekly hour-long online sessions with experts. The programme starts in Year 7 through to Year 11.

Feedback on our students from tutors has been very positive, such as:

"… is a highly able and articulate mathematician. She volunteers ideas and contributes well to group discussions. She tackles all problems with confidence and is able to apply her knowledge to come up with solutions to some quite challenging problems."

Welcome to the Parallel Maths Project!
Be challenged, get curious, do maths.
Stretch your brain every week.

Every week, a 15-minute task is set on parallel.org.uk. This is aimed at students who are seeking to try interesting, fun and challenging material that goes beyond school maths: mystery and history, activities and oddities, puzzles and problems.

Students can sign up using the Teacher Code **1r1wq0**.

Each Thursday at 3pm, you will receive an email, giving access to a new set of online mathematical challenges. For more information, please visit http://parallel.org.uk/

The Alan Turing Cryptography Competition
(University of Manchester)

Do you like breaking codes and solving ciphers?

This competition is aimed at students in high school, **up to** Year 11. The first puzzle was released on the 17th January and weekly competitions are released on Mondays at 4pm.

You can sign up here:
https://www.maths.manchester.ac.uk/cryptography_competition/reminder.php and each week you will be emailed a new problem.

Example problems can be found here.

Who was Alan Turing?
In his relatively short life, Alan Turing — code-breaker, mathematician and founding father of computer science — made a unique impact on the history of computing, computer science, artificial intelligence, developmental biology, and the mathematical theory of computability.
Watch the film about his life.
The 'Imitation game'
Trailer:
https://www.youtube.com/watch?v=nuPZUUED5uk

The **Junior & Intermediate Maths Challenge** competitions are the biggest maths competition run nationally. The Intermediate Maths Challenge aimed at Y9, Y10 & Y11 will be held this Term on 2nd February and the Junior Maths Challenge aimed at Y7 & Y8 will be held in the Summer Term (27th or 28th April). The Challenges will be held at school.

Each month, we will set a 30 minute task on www.DrFrostMaths.com giving access to a selection of past paper questions.

Students can be awarded a Gold, Silver or Bronze certificate. In previous years, students who practiced regularly have done very well in the challenges.

Please let your maths teacher know if you are interested in taking part.

As well as setting homework (details of these can be found on ClassCharts), we encourage all students to work independently on a regular basis to boost the maths that they have learned at school that week. We provide Mathswatch Clip Reference Numbers to help our students to revise effectively for tests and assessments. We also encourage students to revisit topics after the assessments to fill any gaps in knowledge or understanding. MathsWatch is an ideal tool for this. All students have their own login, giving them access to videos, interactive questions that are marked online, and worksheets to complete.

www.mathswatch.co.uk

Please let your maths teacher know if you have forgotten your password.

February: Katherine Johnson Annual Maths Award
A series of short mind-bending challenges open to all students with activities that cross over into other subjects across the school. Prizes are offered to competition winners.

https://www.nasa.gov/content/katherine-johnson-biography

Career in focus

What will your future career be?
At age 16 you can't know exactly what you will do in the future, meaning you can't predict what maths you will need. Many people will change careers multiple times, meaning that you need to have a wide understanding of maths to give you the best possible job options.

Photographer: Many people have an interest in photography today. Most people have smart phone so always have a camera on them to capture that picturesque shot or a special memory. Mrs Diffley evens runs a photography club here in school on a Wednesday after school. You may think that taking a good photograph has nothing to do with Maths, but there is Maths behind taking that perfect shot:

- The Rule of thirds helps to proportion your image.
- Understanding the correct shutter speed, calculated as a fraction, to adjust how much light is allowed into the camera for a certain length of time.
- The cameras ISO levels will control the brightness of a photograph.
- If opening your own business, you will need a good understanding of percentages and personal finance.

Meet a photographer who has her own business: https://youtu.be/7SW96Dgk7MU

Here is some careers advice on how to become a photographer https://nationalcareers.service.gov.uk/job-profiles/photographer

Maths in the News

You might have heard about a **rise in inflation**.
The cost of living rose by 5.4% in the 12 months to December. It is the **highest rise in living costs in 30 years.**
This means that things like food, transport and clothes may be more expensive to buy this year than last year.

Inflation is calculated by the **percentage change of the CPI** (Consumer Price Index) between the same month 12 months apart.

A percentage change is calculated by : $\frac{the\ actual\ change\ in\ value}{the\ original\ value} \times 100$

The CPI is a 'basket' of 700+ products a services made up or all sorts of products from the cost of a packet of pasta to an average taxi journey.
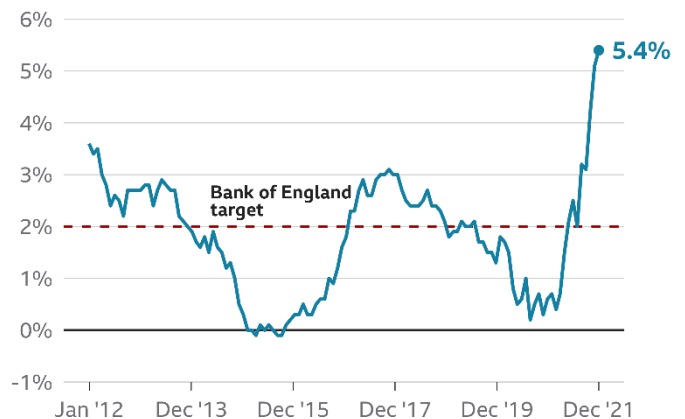The CPI in December 2020 = 109.2
The CPI in December 2021 = 115.1

$\frac{115.1-109.2}{109.2} \times 100$ = **5.4% = inflation rate for December 2021**

The target is 2%. A 2% rate of inflation so a good rate of economic growth.

UK inflation rose to 5.4%
Consumer Prices Index

Source: Office for National Statistics

BBC

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