

THE BIDDENHAM *DISCOVER* MAGAZINE

DNA: WHAT IS IT?

- The structure behind the universal genetic code in all living organisms.

THE UNIVERSE

- Is it actually expanding?



THE CHRISTMAS SPECIAL

- Fun fact about Christmas
- Christmas activities



MENTAL HEALTH

- The importance of mental health in a pandemic

CREATIVE SUBMISSION

- Artistic Piece
- A Poem



CELEBRATING BLACK HISTORY

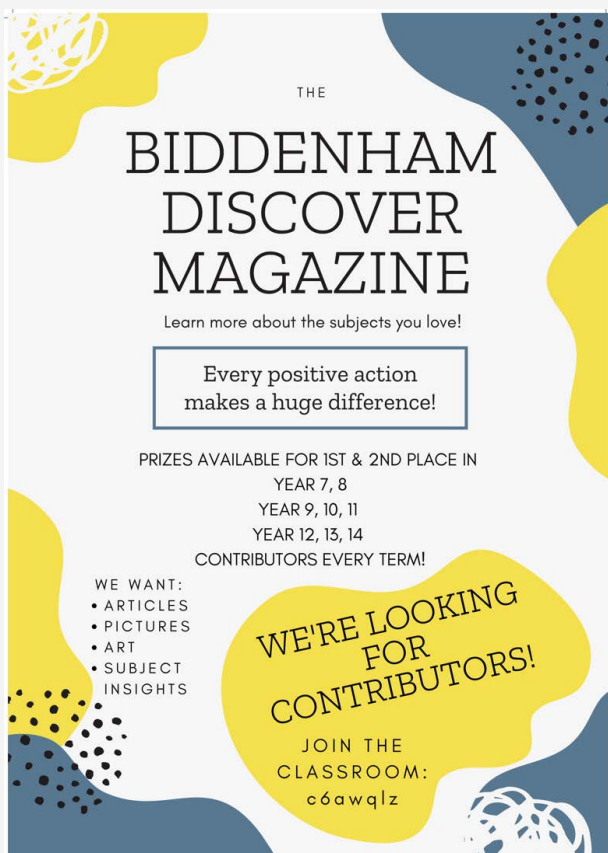
LOTS OF
INTERESTING
ARTICLES INSIDE



EMAGAZINE
AVAILABLE



THE BIDDENHAM DISCOVER TEAM
'EVERY POSITIVE ACTION MAKES A HUGE DIFFERENCE'



Thank you to everyone who submitted their submissions. We at the Biddenham Discover team apologise to those who hadn't had their submission put in this issue of the Biddenham Discover Magazine. We're still wanting more submissions for our next issue so please send them in (details in the poster). We anticipate having the next issue out before Easter so keep a lookout. Thank you once again.

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WELCOME TO THE FIRST EVER ISSUE OF THE BIDDENHAM DISCOVER MAGAZINE!

Welcome to the very first edition of the Discover Magazine! We've spent a lot of time perfecting this and we're very excited to start this and we hope you enjoy what we have to say. To set us off, here are a couple messages from the heads of school.

Dear Reader,
Welcome to the inaugural edition of the Discover Magazine. This is a high concept idea that incorporates a Discover Society, offering workshops and talks on various topics , by the students for the students.

The Discover Magazine is a platform where students from all years can get involved, whether that's to write articles on academic topics that they're interested in, or to do a piece that unleashes their creative passions and talents. This magazine, established by Sixth Form students, is open to all students at Biddenham to contribute. Under the guidance and supervision of

Mr. Shakoor. The Biddenham Discover Magazine is a great opportunity for students to express themselves in addition to establishing and strengthening their academic writing, reading, and oracy skills - necessary in higher education.

The Biddenham Discover Magazine is structured to help students and guide them to potential future prospects. This is the first time our Sixth Form students have devised something like this and we are excited by its potential for students to support each other and to develop their writing and indeed thinking skills. This is something that will reach all

students and give our community the opportunity to express their views on topics they are passionate about.

This, during these difficult and strange times, is a real dose of normality and illustrates that our students can still create forward thinking and innovative projects that will support and move our community here at Biddenham forward. We congratulate them on this great idea and initiative.

BY MR D BAILEY
MS GRYLLS



THE SEARCH FOR THE PHILOSOPHER'S STONE

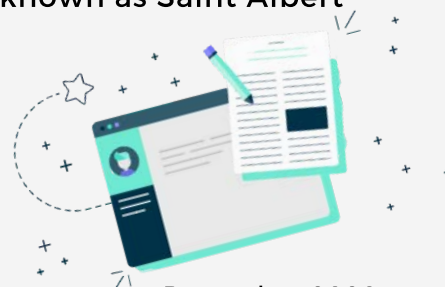
BY NATASHA AITCHISON YEAR 12

During the Renaissance period in Europe, alchemy was considered a part of mainstream science. Alchemy is an ancient branch of natural philosophy that was practised throughout Europe, Africa and Asia. Alchemists had many aims, including the creation of a universal cure for all diseases, a potion for eternal youth and the discovery of the legendary philosopher's stone.

The philosopher's stone was believed to be a chemical substance which would be able to cause the transmutation of base metals (common metals that are not considered precious) into gold, extend life,

heal illness and possibly create a homunculus (a microscopic, but fully formed human being). Most alchemists considered the philosopher's stone to be magical, as it was fabled to enable immortality. It is also sometimes called the elixir of life. The theory of the stone's creation originated from Greek philosophy. Plato's concept of the 'first matter' was a key element in the formation of the stone. This 'first matter' was what Plato assumed the four elements later believed was the starting ingredient of the philosopher's stone. In the early medieval Islamic world, Many

alchemists were highly interested in the thought of metal transmutations. This is the process by which a chemical element or isotope is converted into another chemical element; it only naturally occurs in a supernova (the explosion that happens at the end of a star's life). However, after many failed attempts to carry out this process, there was a debate amongst Muslim chemists as to whether transmutation was possible at all. Albertus Magnus, also known as Saint Albert



December 2020

the Great, was a philosopher and alchemist of the church in the 13th century. He was declared the patron saint of natural sciences in 1931 and, according to legend, is said to have discovered the philosopher's stone. He never confirmed this discovery; however he did write that he witnessed the creation of gold through the transmutation of another metal.

Throughout history various descriptions of the philosopher's stone have been recorded. Most accounts agree that the stone appeared in two states, a white stone or a red stone. The red stone was used to create gold and the white to create silver. Some medieval records claim that the red stone is actually orange, but red when in powder form. Due to its magical properties,

many modern scientists regard the quest to find the philosopher's stone as deluded make believe. Nevertheless, many of the greatest minds of the era devoted their lives to search for the legendary stone. Alchemy was regarded as the only real science of matter and laid firm foundations for the development of modern chemical science.

WHAT IS DNA?



BY MILLIE SUSSAMS YEAR 12

DNA is an information storing and carrying molecule with a double helix structure. RNA stores genetic information as well but it only has one chain. DNA is stored in one place and can't move, however, RNA can send messages and transcribe genetic material as there are different forms of it such as tRNA and mRNA. In RNA the four nitrogenous bases are cytosine, guanine, adenine

and uracil. However in DNA there is no uracil but there is thymine. DNA is made up of nitrogenous bases, a phosphate backbone which is bonded to a deoxyribose sugar but in RNA, the sugar is just a ribose sugar. In the lesson we used sweets to model the double helix structure and how the bases bind to it. We also used them to show how the different backbones of DNA and RNA were formed.





ENGINEERING

BY EMMANUEL ASARE YEAR 13

According to Google, an engineer is “a person who designs, builds or maintains engines, machines, or structures” I would like to think that being an engineer spans a broader range of fields, from Biochemical to Motorsports; there’s a field within engineering for everyone.

For many, Engineering isn’t something that comes to mind when thinking about University courses, everyone always talks about Law, Psychology, and English.

Engineering is an underrated field in which we need more alumni so much so, that an estimated 1 million engineers are needed by 2025.

Engineering is all around us. We benefit from the work of engineers in every aspect of our lives.

Most things we have/do are only possible due to their work. In this segment, I will try and explain to you why



engineering could be a possible career path you may be interested in. Engineering degrees span 3 years for a Bachelors and 4 Bachelors and 4 for a Masters, many universities offer years within the industry for students to gain experience and understand the environment they will be working in. The jobs are also well paying, with salaries starting from £23,000 to £70,000 on average within all the different sectors. By becoming an engineer, you can help solve problems that are important to society. You could be controlling and preventing pollution, developing new

medicines (creating and developing new medicines), creating advanced technologies, even building satellites and rockets for space exploration. The possibilities in this field are endless. Being in such a vast field allows you to express your creativity, travel, collaborate with other professionals, establish your own businesses all while being paid a high salary! I strongly believe that anyone with even the faintest interest in STEM subjects should look to engineering as a career path, being such a flexible degree path, it is highly likely that you will end up somewhere you really like.

THE

BIDDENHAM DISCOVER MAGAZINE

Learn more about the subjects you love!

Every positive action
makes a huge difference!

PRIZES AVAILABLE FOR 1ST & 2ND PLACE IN

YEAR 7, 8

YEAR 9, 10, 11

YEAR 12, 13, 14

CONTRIBUTORS EVERY TERM!

WE WANT:

- ARTICLES
- PICTURES
- ART
- SUBJECT INSIGHTS

WE'RE LOOKING
FOR
CONTRIBUTORS!

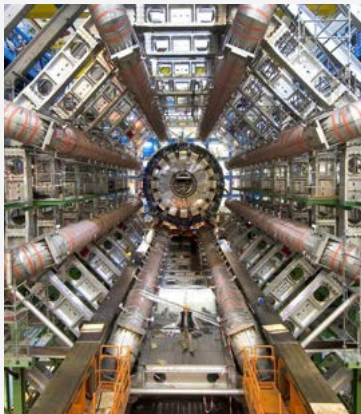
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**WE'RE LOOKING OUT FOR ALL
YOUR SUBMISSIONS**

**KEEP SENDING US YOUR
SUBMISSIONS!**

WHAT IS THE LARGE

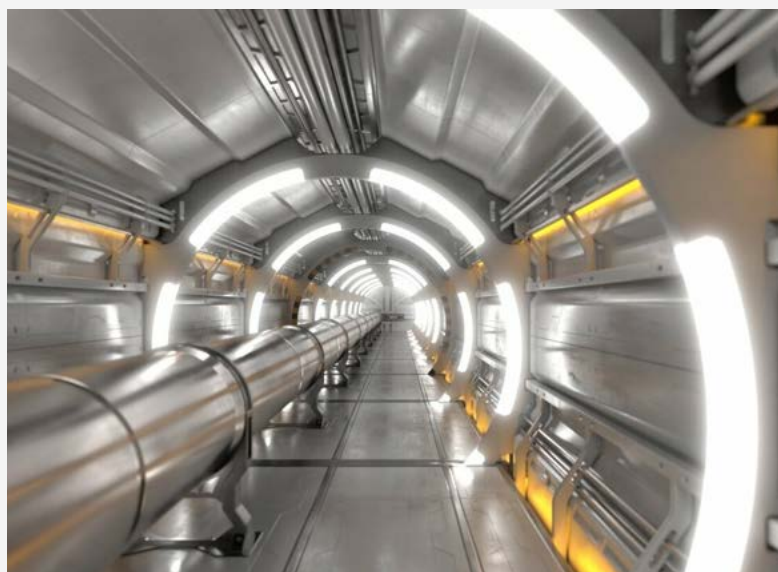
Particle accelerators and colliders, such as the Large Hadron Collider (LHC) in Geneva, accelerate small particles such as protons, alpha particles and light ions. They have been at the centre of many discoveries in the subatomic particle world, such as the Higgs boson.



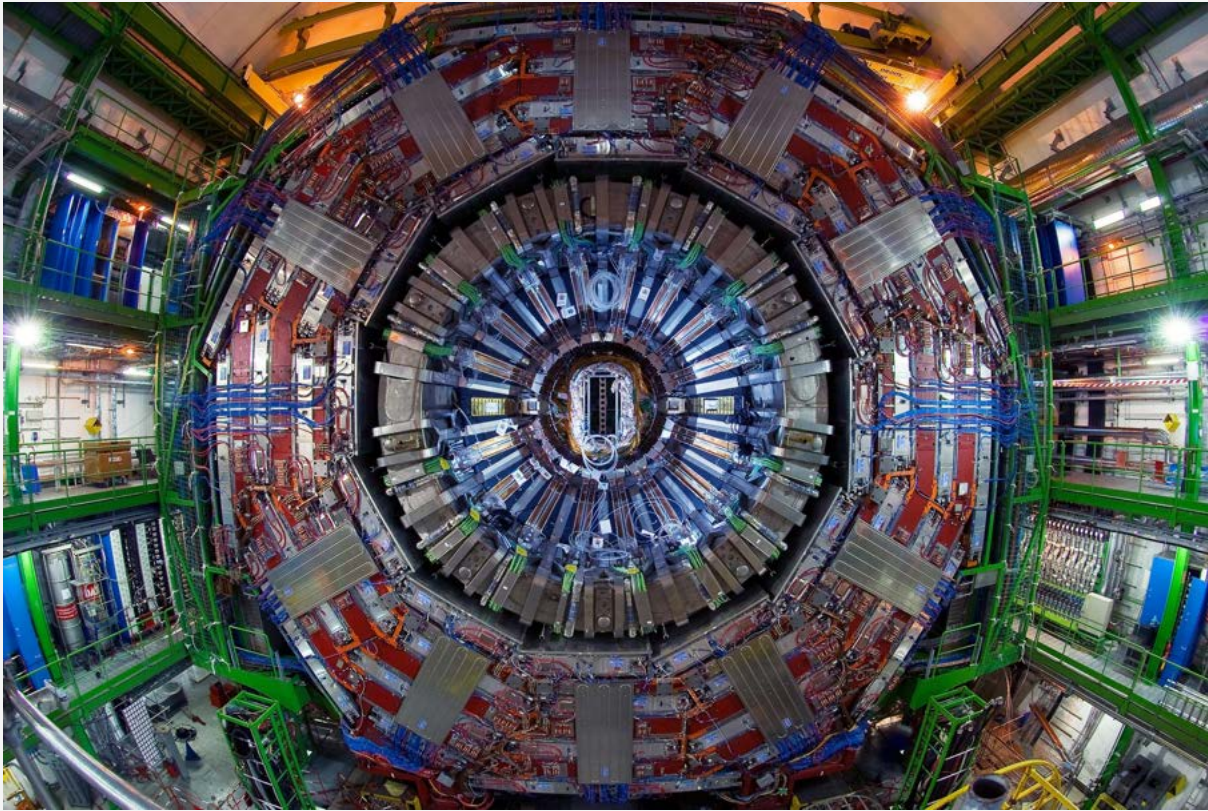
The LHC sits 100 metres below the ground in both Geneva and South-Eastern France. It is 27 kilometres long and is circular in shape. Within the LHC (the largest particle collider accelerator in the world) two high-energy beams of particles are accelerated to almost the speed of light (99.99991%) before they are made to collide. The beams travel through two tubes, which are kept at ultrahigh vacuum, in

opposite directions. The kinetic energy of a proton at this velocity is 6.5TeV (Tera electron Volts). Since the LHC is circular, the path of the beam is manipulated by a strong magnetic field, created by superconducting electromagnets. The magnets are kept at -271.3°C by liquid helium so that they conduct electricity efficiently, before they are made to collide. When the LHC is made to accelerate protons a particular process occurs before the protons are forced to accelerate. First, electrons are stripped from hydrogen atoms, which then become protons (the most

common isotope of hydrogen consists of one proton in its nucleus, and has one electron orbiting it, hence removing the electron leaves the proton). Following this, a magnetic field alternates at a given frequency. An electric field can attract and repel charges. The LHC takes advantage of this. Within the LHC, there are many chambers through which the proton beam passes through. When the proton beam enters a chamber, the first half of the chamber has an electric field that attracts the proton towards the centre, and the second half has an electric field that repels



HADRON COLLIDER?



the proton. When the proton passes the centre of the chamber, the fields switch so that the field in the first half repels the proton and the field in the second half attracts the proton. This process is repeated throughout the LHC. Electric fields are also used to ensure that the protons follow the LHC's circular path. The protons are then forced to collide (with a collision energy of 13TeV collectively, each proton having a kinetic energy of 6.5TeV) and the data is analysed. On an active day, the

LHC can generate up to 140 Terabytes of data. Therefore, supercomputers around the world are asked to analyse the data. This group of computers is named the "LHC Computing Grid". As of 2012, the network consists of over 170 computing centres in 36 countries, and utilises both private fibre optic cable links and public high speed internet infrastructure. By 2012 over 6 quadrillion proton-proton collisions were analysed, and the LHC

has become the world's largest computing grid. In addition to their own computing grid, they also invented the World Wide Web in 1989.



BY ROBIN MASIH
YEAR 13

THE EVER EXPANDING UNIVERSE

The most popular and supported theory that astrophysicists and astronomers have come to believe in our day to day world is the origins of the universe. With much research and evidence, we have come to believe that it is an explosion of a small singularity that gave birth to an entire galaxy. The idea centred around an event that we now refer to as the Big Bang. It is a principle that has taught us many things: from the beginning of time and space, and the great substantial speeds at which planets move further away from us in our solar system.

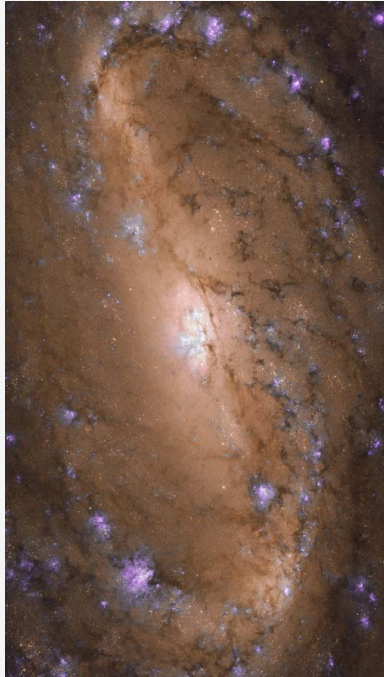
It was originally theorised by a Belgian Priest, Georges Lemaitre, who in the late 1920's, proposed an assumption about the origination of mankind. He believed that the moment before the universe became this wide scale galaxy, the only fundamental



quantity present was what we now know as the smallest unit of matter, the atom. His experiments and work came with very positive responses, and famous scientists such as Edward Hubble admired his work, as their observations at the time were also deemed true by Georges' principle. It also came with strong praise through the later discoveries of microwave radiation in the 1960's, that evidently represented signs of the Big Bang.

However, like any theory, new discoveries in the latter time

couldn't prove that these previous theories were true, thus this new idea of how the universe expanded was made. What we now know is that all of the matter and energy that makes up this galaxy was all confined in a small point at the beginning of time, evident to be 10 billion times smaller than the atom. With natural forces such as electrostatic attraction between opposite and like charges acting on this point, this unknown, substantially dense singularity became unstable, with all of its



BY MATTHEW BROWN
YEAR 12

energy dissipating light and expanding outwards at an exponential rate. The universe was said to rise to a fluctuating temperature of over 10 billion degrees, heating up the internal energy of this dense matter, resulting in weaker inter-molecular forces that cause the universe to expand and become less dense. With various mathematical principles being applied to this physical discovery, there is much proof that the universe is still expanding at this moment in time and will be till the end of the next decade or century, but, at a much

lower rate. Over time, the temperature declined to a stable temperature, causing particles to condense and form planets and stars. The remaining matter that was present in an empty vacuum of space survived for billions of years, until single celled organisms inclined to complex multicellular beings became what we now call homosapiens. Proposed by Charles Darwin, his theory of evolution states that humans developed from micro structures and grew and adapted to the environment around us, living in an ever expanding universe.

THINKING BACKWARDS

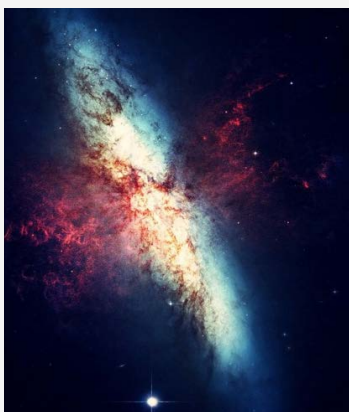
The Big Bang Theory is a model of the growth of the universe from 10-35 seconds after it came into being onwards. The theory states that all energy

and matter that is now spread out across the universe started out as a single concentrated point and then suddenly exploded outwards, causing rapid

expansion that has been going on for the past 13.8 billion years. In 1927 Georges Lemaitre was the first to propose the universe started with an

explosion called “The Big Bang”. The foundations for the discovery of the first piece of key evidence for The Big Bang were laid in 1842. That same year something called the doppler effect was discovered. The doppler effect is the change in the frequency of a wave based on where the observer is relative to the moving source of the wave.

A simple example of this is the change in pitch of a siren on a police car as it passes you. Since the frequency changes, the wavelength also changes which is expressed in the equation $\lambda = v/f$ (λ = wavelength, v = velocity, f =frequency). If the frequency increases the wavelength decreases. As the source moves closer to the observer, the frequency increases and as it moves further



away the frequency decreases. This applies to all electromagnetic waves, including light. This change in wavelength shifts visible light to either the red end of the colour spectrum (if the wavelength increases) or to the blue end (if it decreases). Therefore a light source that is moving away from the observer will slowly turn to the red end of the visible light spectrum.

This is called redshift. By 1929 many scientists found data that showed we were experiencing redshift from distant galaxies, implying that they were moving away from us. In the same year, Edwin Hubble measured the speed of galaxies and their distance from earth and then plotted a graph which showed

that the speed and distance were directly proportional. He then developed an equation that became known as Hubble’s law - $v = H_0d$ (v = velocity, d = distance, H_0 = Hubble's constant). Hubble’s Law was a key piece of evidence for the foundation of the Big Bang Theory as a legitimate theory worth serious consideration.

Hubble’s law was a crucial foundation of the Big Bang Theory as it proved that the universe is expanding in all directions . There are some blue shifted galaxies but the majority of them are red, providing evidence for a constantly expanding universe because almost everything in the universe is moving away from us and the galaxies must

therefore have enough space to continuously move in one direction. Since the universe appears to be

expanding outwards in all directions we can ascertain that everything started expanding from a

singular point after an explosion. Therefore the Big Bang Theory had some potential evidence behind it.

BY SAMUEL ELLIS YEAR 12

PREJUDICE

Prejudice - The definition of prejudice is a preconceived opinion that is not based on reason or actual experience - this is sadly what I'd like to talk about. I'd like to talk about prejudice and discrimination because it happens and it shouldn't. I spent some time thinking about what I wanted to write for this; at first I wrote a beautiful paragraph, and in that paragraph I called homophobes and racists, idiots & narrow minded slugs - my friends quite liked that, but I realised all it did was insult some people. I actually want to write this to the people who have to face discrimination for something they should be proud of facing.

To the people who face discrimination I'd



like to say - don't just accept it. It isn't fair that you have to have a harder time because of something like race, sexuality or gender - it's wrong - people are people no matter what they look like or who they're attracted to. If anything, I think the different ones are the people who choose to put sexuality and race above personality and friendship. So if you have faced discrimination or you've seen it happen, tell someone about it,

challenge what that person is saying because TRUST me, if you challenge it they won't know how to defend it - prejudice is not based on reason or experience - just on ignorance.



BY EMILY HALL YEAR 12

CREATIVE SUBMISSIONS



A Polluted Future for You and I

BY HALA ELABD YEAR 8

Remember the beautiful, bright blue sky?
Now, it's covered by the ugly brown clouds that force
me to cry.

Remember the animals that were all cute and great?
Now, they're disappearing at an alarming rate.

Remember the waters that were clear and clean?
Ha, that must've been out of a dream.
I don't think you'll ever see such streams as these.



Remember our beloved trees?
Yeah, we've turned them into money to pay for our
deeds.

Remember the wind that blew and cooled in
wondrous ways?
Now, it's the air that's as hot as a blaze.

Clearly, we all remember these amazing things,
Now all gone in a blink.



But...
There must be some mistake.
We're only in our youth! What will happen to our
vulnerable future?
We have to save our scared Mother Nature.
It's time to make people see how we're damaging our
Earth.
It's time to realise what it's truly worth.

If we don't finally work together,
It may really be... too late.





When coming up with the concept of this design I tried to base it on a personality type, so I created a person in my head and tried to draw what their room would look like. In this case the person I imagined was someone who has an appreciation for plants, someone who is organised yet unbothered by their

occasional messes. I want to do more of these in the future. As well as drawing the picture I went in with watercolour. I knew from the start I wanted it to all be one colour, however choosing the colour was the hardest decision I had to make because I knew it could completely change the feel of the work. The design has

been done in a one point perspective. Perspective drawings have become my favourite type of art to do, because after many failed attempts I have finally grasped the concept and got my head around how it works. I love how accurate and proportionate they look and I will be definitely doing it again.

BIDDENHAM DISCOVER SOCIETIES

PERSONAL STATEMENT WORKSHOP BY SAHAR HOUSSAINI YEAR 13

Our first workshop session of the Biddenham Discovery Society was on 'How to write your Personal Statement'. The room was full, many students attended and all seats were occupied. This session enabled the year 12 students to have an early insight into what the Personal Statement is and also what it should consist of. Not only did we cover the do's and don'ts, but we also spoke about the structure and extra-curricular opportunities students can experience and embed in their statement. In addition to



this, I also arranged for some of our early applicants, Wasim (medical applicant) and Robin (Cambridge applicant) to speak about their Personal Statement and what they would advise current students to do as well. I hope that this workshop has cleared all questions and worries surrounding Personal Statements and also encouraged the year 12's to begin writing now!



The key points from the session -

- Length limit is 4,000 characters and 47 lines - **STICK TO IT**
- Write about your experience and extracurricular - shows your interest and motivation
- Make it flow - don't jump between unrelated topics
- Be honest
- Don't copy - Be original - Show your thinking skills

CV WRITING WORKSHOP BY ANNA-ELLEN KENNEDY YEAR 13

The second session held by the Biddenham Discover Society was a workshop based on CV writing skills. There were plenty of eager Year 12 and 13's in attendance who were looking to apply to jobs and wanted some advice on how to create the best CV in order to aid them in this. We first started off by asking everyone to think about what they would include in a CV, and then collating our ideas together. We covered all the key information that needs to be included in a CV, from personal details to relevant work



experience. Everyone left much more confident about writing their CVs!



The key points from the session -

- Include your contact information
- Include a small personal introduction
- Include your education - GCSE and A-Levels
- Include relevant work experience
- Use Arial, the font size of 11 and your CV should be no longer than 2 pages

TRANSITION INTO YEAR 12 WORKSHOP BY EMMANUEL ASARE, WASIM RAFIQ, AND TYLER ALBARELLA YEAR 13

The third session hosted by the Biddenham Discover society was a seminar on 'transitioning from year 11 to year 12'. Once again, with a full room, we gave the aspiration year 12 pupils tips on managing time, workloads, looking after their mental health, and tools they can use to aid them in their Sixth Form years. We stressed the importance of looking after your mental health especially following the difficulties and missed exams of the past year, the current year 12s have yet to experience the exam environment, we think we

did the utmost to prepare them for what's to come. We felt the seminar was very successful in providing guidance and sent out best wishes to the year 12s!

The key points from the session -

- Manage your free time - use a timetable to manage your time
- Note exam dates
- Find revision techniques that work
- Have frequent breaks during revision to prevent burnout
- Have activities that helps you relax and destress

THE CHRISTMAS SPECIAL



TWELVE INTERESTING FACTS FOR CHRISTMAS

BY XAVIER DELOUBES - YEAR 13

1. Robins on Christmas cards were started as a joke 150 years ago because Postmen wore red tunics and so were named after them.
2. It's technically illegal to eat mince pies at Christmas in England because in the 17th century Oliver Cromwell banned the eating of Christmas pudding and mince pies with the Law never being changed.
3. The typical Yule log pudding actually comes from the old tradition of choosing a pine log and burning it for the 12 days before Christmas.
4. To reach every house in the world to deliver presents Santa would have to travel at 650 miles a second.
5. In 2016 a survey found that 57% of U.K adults would gladly sacrifice seeing family on Christmas day if that meant they could spend more time on Facebook.
6. The abbreviation Xmas isn't rude as many think it is actually the letter X in the Greek abbreviation for Christ.
7. During the 20th century there were only seven official white Christmases in the United Kingdom.
8. In recent polls, Home Alone was voted the most popular Christmas film with Muppet's Christmas Carol coming second.
9. In the UK alone it is estimated that £700 million will be spent on unwanted Christmas presents.
10. 62,824 is the record for the most amount of Christmas cards sent by a single person, making a total in first class stamps of £40,207
11. In 1999 the US state of Maine built the tallest snowman who stood at 113FT tall.
12. The first Christmas pudding was made of raisins and wine.



CHRISTMAS SPECIAL CROSSWORD



ACROSS

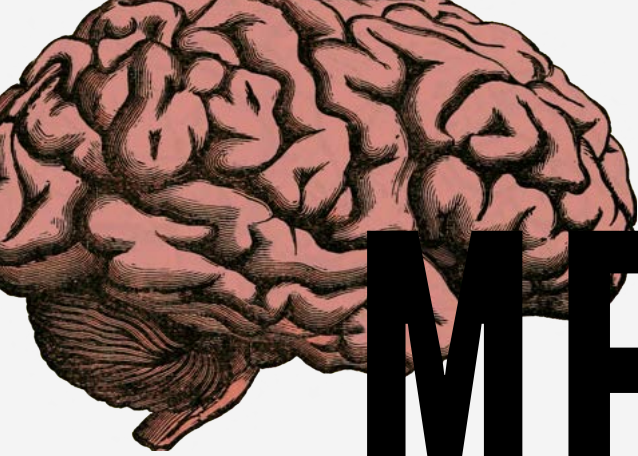
1. Pumpkin or Mincemeat
3. Santa's Ride
6. Celebration
8. Newborn
9. Northpole Crew
13. Words of praise
14. Words on a Christmas card
17. It's opened on Christmas

DOWN

1. Alternative word to 17 Across
2. Christmas drink
4. Christmas dinner centerpiece
5. Dec. holiday
7. Christmas warmer
8. "Jingle _____"
10. Christmas tree
11. O. Henry's "The Gift of the _____"
12. What carolers do
15. French Christmas
16. Snow glider



THE ANSWERS ARE ON THE
BACK PAGE OF THE MAGAZINE

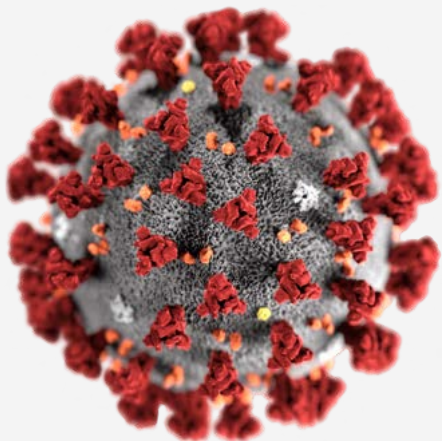


MENTAL

COVID & ME - MRS M. HANDS

I was pretty much a normal person up until COVID entered my life in March. I remember vaguely hearing about this disease towards the end of 2019. I think like many people it seemed to be out there somewhere but I didn't worry about it.

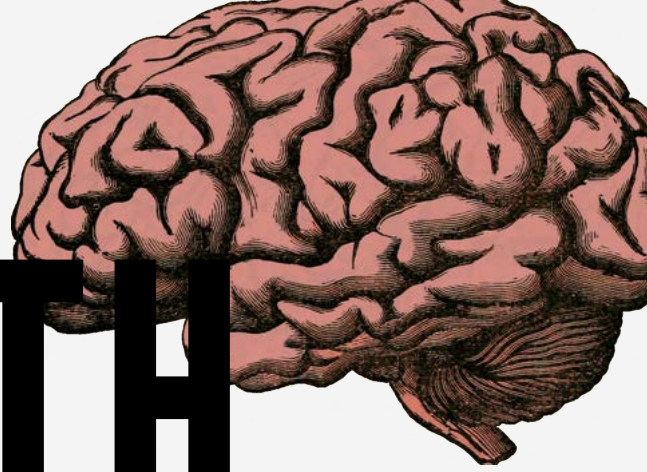
The first time COVID came to my attention was when I was planning a trip to Cork in Southern Ireland in February. As I was discussing on what date to book my flight with the friend I was going to visit, she asked me if I was OK with flying as apparently there was some risk of contracting the virus through the air conditioning on the airplane. I was so surprised and assured my friend that I would be fine. At that point, I really didn't understand the seriousness of COVID. There had been very little in the news here in the UK.



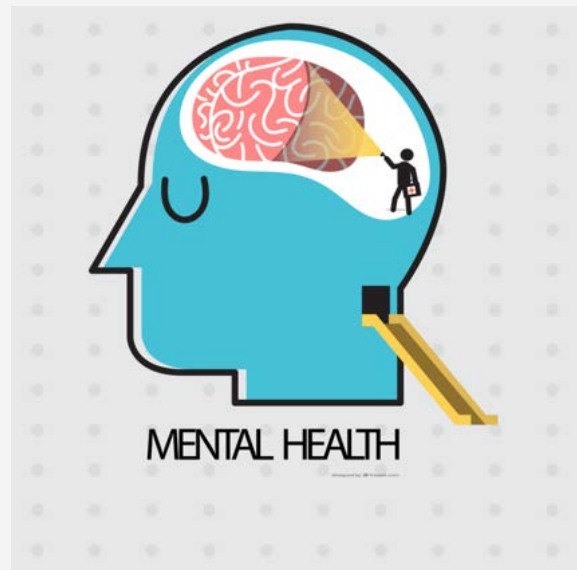
The next time I heard about it was at my annual asthma and hypertension review in early March. The nurse told me that I needed to think carefully about hand washing, and keeping my distance from others. She told me it would be best if I stayed at home as much as possible as I have severe asthma and other underlying conditions and was unlikely to survive COVID if I contracted it by the end of the week I was in lockdown. Then the whole country was. News of how the virus was affecting other countries started to filter through. I was terrified.

I went from being an outgoing person, meeting friends and going to the local pub, enjoying shopping trips to being a hermit. On my medical record there was a warning that I was very likely to develop complications from COVID. Letters from the NHS and the Government came advising me I needed to shield and stay at home as I was in the highest at risk group. I was advised not to go out at all, not even for a walk. I felt like I was in a cage, with the four walls closing in on me. As the days of staying in mounted I found myself getting

HEALTH



very down and anxious, overwhelmed with a feeling of helplessness. I've always enjoyed being creative, it was something I did in my spare time, occasionally doing some painting and drawing. So I decided that I would draw every day to give me something to do. I found that the hours and days passed really quickly as I became absorbed in art. It was fun but also a challenge as I set myself the task of drawing unfamiliar things, and trying out new techniques. In the summer I spent hours in my garden watching the birds feeding and drawing. Sometimes when I could think of nothing to draw I would just doodle, and found that as absorbing.



Drawing and painting kept me sane. After lockdown ended I was advised not to just go back to my normal life and continue to be cautious, wash my hands frequently and keep a 2 metre distance from others. It felt wonderful to see people again and catch up with friends, but I continued my art practice. It had become a part of my life. In the media there was a lot of talk of the negative effects of lockdown and subsequent rules on socialising. As we entered the next lockdown I decided to do something to help others; if doing art every day helped me, why shouldn't it help others? I'm a great

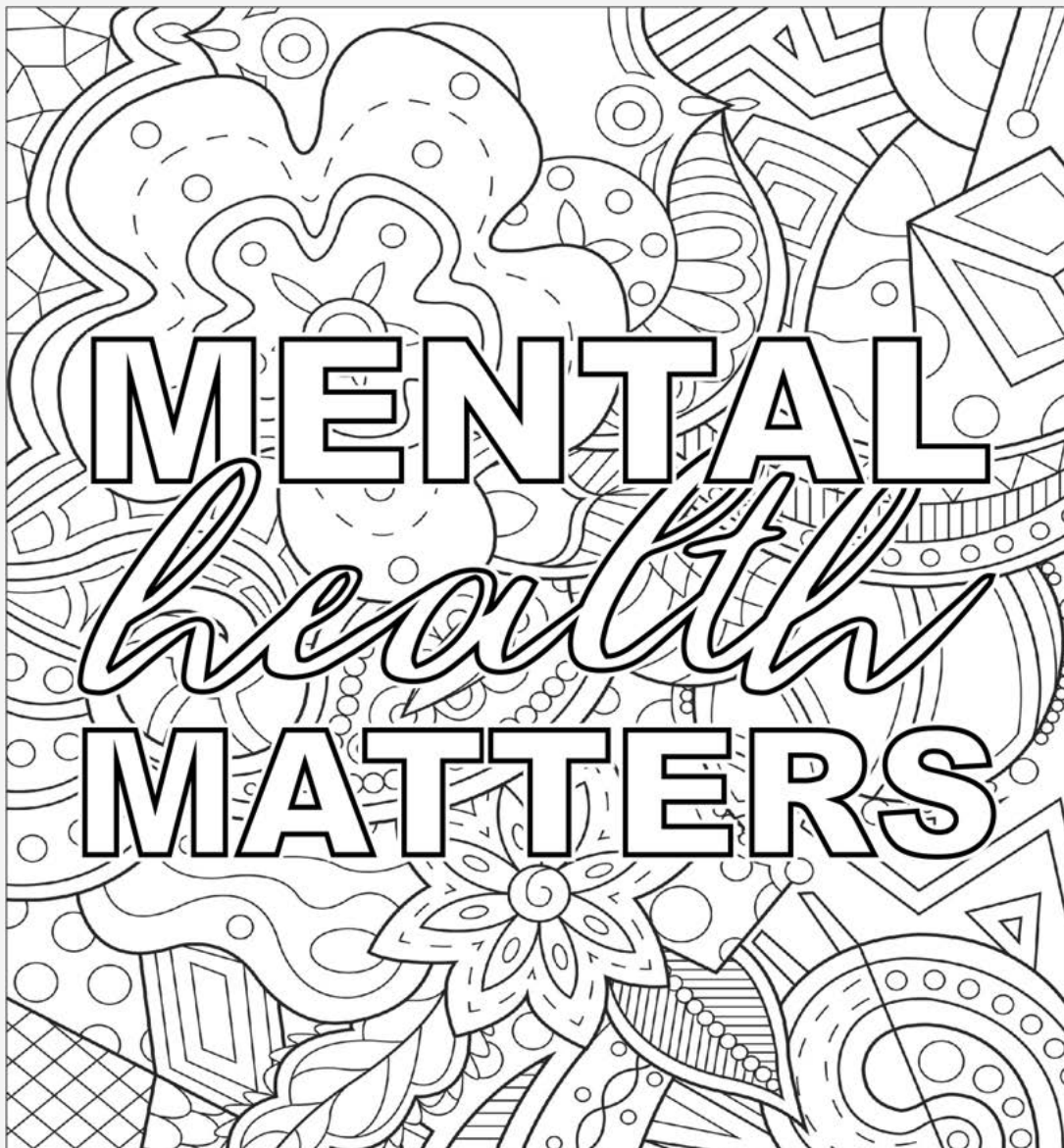
SELF-CARE ISN'T SELFISH.



believer in sharing. So I started live workshops on Facebook and that's how 'Art for Fun and Mental Well-being' was born. It's been quite a steep learning curve; I only have very basic knowledge of Social Media. It takes me hours to set up with my phone so that people can see what I'm doing, but I like a challenge and it has helped me to focus less on myself. That is the crux of it, finding something meaningful to do that is absorbing is good for our mental health. My workshops aren't about art techniques, learning

how to draw and paint, these can be found quite easily. My workshops are about taking very simple concepts such as basic shapes e.g. a circle and creating something based on that shape. So you don't need to be a 'serious' artist, just someone who recognises simple shapes and is happy to replicate them and have fun with them, playing with colours and exploring making patterns and marks on paper.

I plan to continue with the workshops, certainly until Christmas. After that, who knows?



CELEBRATING

BLACK HISTORY MONTH

Black History month is a time for black people to come together to remember important people, events and to celebrate the achievements of African people. You see, there are so many different people who impacted our lives and which we view as heroes like George Johnson, Mary Seacole, Diane Abbott, Aretha Franklin, Harriet Tubman, Malcom X

and Martin Luther King Jr. This month is a time for us to collectively appreciate where we come from and the path that has been paved for us. We are here, we are still here and we are standing strong. And I am hoping that this year everyone was able to learn a little bit more about our history and celebrate with us.

BY GIFT EZEH YEAR 13

DID YOU KNOW?



Lilian Bader was born in 1918 in Liverpool and went on to become one of the very first black women to join the British Armed Forces. Starting out as a canteen assistant at an army base in Yorkshire, she eventually trained as an instrument repairer, before becoming a leading aircraftwoman and soon afterwards earning herself the rank of Corporal.

The first Black Army Officer was Walter Tull in 1914. The Royal Mint produced coin to commemorate him in 2014. He was also one of The First Black Footballers playing for Northampton.



INSIGHTS



CHRISTMAS LECTURES BY SAHAR HOUSSAINI YEAR 13

This year we participated in the Royal Institution Christmas



Lectures. These are designed for children

and young adults who want to get into science in an interesting, fun and virtual way. We were given a task to draw characters in the shape of green-house gas molecules that are most abundant in our atmosphere. This activity enabled us to destress and express our creativity.

I chose to draw a molecule of ozone (O_3) as it absorbs the most UV radiation contributing to global

warming and climate change. Overall I found this activity interesting and interactive, probably the most simple task we have been given so far during A-levels. I would definitely recommend getting involved should you be offered the chance.



MY JOURNEY TO OXFORD BY MAURICIO TRONCA YEAR 14

Ever since I was young I've always been interested in biology, I was gifted a microscope (albeit a children's one) as a child after begging to get one. The main thing it taught me was to be inquisitive about everything around me, keeping an open mind and always striving to find out how things work (this mainly applies to STEM). Even as I grew older, small things still intrigued me, when one of my fish

passed away I decided to perform a fish-autopsy, trying to figure out how it died with the help of online diagrams. The main point here is to do what you love, and do it well by studying and practicing what you are passionate about. There is no point in striving to be a doctor if you truly want to be a game designer, so continue building experience by doing the things that you love because it will all pay off in the end.



ENGINEERING TALKS BY DR. S. MCGRATH

At the end of November I organised a virtual panel of three engineers to talk to twelve of our sixth form students who are interested in a career in engineering or an equivalent job.

The three engineers, who studied at the Universities of Cambridge and Salford, have taken very different paths from their original degrees, one managing several million pound projects below the streets of London, another starting up his own business and the third moving into consultancy. They spoke through their backgrounds and careers and the students had the opportunity to ask them questions relating

to their university experience. For example; the positives and negatives of the job,

A typical day (turns out there isn't such a thing as it's so varied!) and of course salaries! Listed below are some quotes from students who attended the virtual session:

"I learned about the courses available at university and the requirements and specification for specific types of engineering, eg. Civil, Mechanical etc.",

"I most enjoyed the part where they talked about what they do on a daily basis at work as it helped me understand what the job is actually about.",

"I enjoyed hearing about the wide variety

of different roles within specific engineering sectors. Before now I wasn't really aware of the range of career paths that engineers could pursue and this opened my eyes to alternative options available to me.",

"It was very interesting to hear that there are routes into engineering that don't require physics A level, this means I can consider it as a strong possibility."

Later in the year the Sixth Former will be hearing from doctors, a medical physicist, an astrophysicist, a medicinal chemist, a food technologist, a statistician and many more in order to help them decide potential career paths.



SPACE TRAVEL WITH LOCKHEED MARTIN

BY SHAZMIN ISLAM YEAR 11

Lockheed Martin is a company that works with advanced technology on aerospace. Year 11s spent a couple of lessons learning about this industry and types of careers we could make out of it. It was very interesting to find out about the events that occur and the subject on the whole was fascinating.

We were given the task to create a mission to the moon. We had to decide which sort of aircraft would be best to go to the moon according to a variety of scenarios. In groups, we presented our ideas to each other and a few members of the staff

from the company.

It was great to be given this opportunity this year as we have been given another option to help us decide what career path we would like to go down and also making us aware of



what qualifications we would need in order to study them.



Furthermore, it was also a simple session which gave us all an insight into this industry, so those who are interested will have a better understanding on where to look to find out more.

In conclusion, this workshop was helpful for us, these opportunities are much appreciated and will definitely help us to decide our future careers.

MY A-LEVEL OPTIONS AND HOW THEY WILL HELP YOU

BY LUCIA SCOZZARI YEAR 12



LANGUAGES

A level studies have many benefits from learning a subject in depth to the freedom to explore a subject and eventually specialise in it through a degree course for those who would like to go to university.

Taking a language at A-level is a fantastic opportunity to take. I am currently studying French at A-level and I studied French and German at GCSE. Languages have always been one of my favourite subjects. French is spoken worldwide by 300 million people. It is a diplomatic language and gives students a gateway into the European job market.

The A Level in French explores the literature, culture and way of

living of the french people and their history. The different elements studied from reading texts to listening to current affairs make it a varied and fun subject to learn and I would definitely consider it at university.

German is a language that offers business opportunities given Germany's leadership of the European nations. The teaching of the language and exploration of everyday affairs such as economy, technology, and culture allows a better understanding of how successful countries work and for me languages have been very beneficial.

LAW

There are many benefits to studying A level law. The subject itself can allow work opportunities in social work, police, solicitor or barrister careers but also local authority work. It is an area that affects all aspects of society, from simple decisions around street and taxi licences to complex matters such as criminal offences. I chose Law as it is a new subject that instantly interested me and it also helps students develop a range of transferable and useful skills such

as: analytical skills, attention to detail, research skills, essay writing skills and the ability to produce a balanced argument as well as expanding knowledge. For me, I will definitely consider studying law at university and I could not be more pleased with my decision to study it at A-level.



CHRISTMAS SPECIAL CROSSWORD - ANSWERS

ACROSS - ANSWERS

1. PIE
3. SLEIGH
6. PARTY
8. BABY
9. ELVES
13. ALLELUIA
14. GREETINGS
17. GIFT

DOWN - ANSWERS

1. PRESENT
2. EGGNOG
4. HAM
5. XMAS
7. YULELOG
8. BELLS
10. PINE
11. MAGI
12. SING
15. NOEL
16. SLED

