



AROUND THE PALACE

Dear all,



In the words of Perry Como (or Michael Bublé if you are younger than me!) 'it is beginning to look a lot like Christmas'. From the Christmas Fair at the weekend to the Christmas lunches at Prep and Seniors along with the enjoyment of the OPA Carol Service on Monday, the festive season is certainly upon us.

We are looking forward to this continuing next week...but please be reassured that we are continuing to monitor the situation re: Covid closely.

Wishing you all a relaxing weekend.

Jane Burton, Head



The last Bulletin for this year will be on **Friday, 17th December**, not the last day of term which is Thursday, 16th December.

Prep: Christmas Jumper Day *continued on page 6*



A letter from Mrs Nike



Dear all,

It was an absolute delight to attend the Christmas Fair last Saturday. The highlight for me was most definitely purchasing such lovely items from the class enterprise stalls. I am really impressed with your entrepreneurial spirits. All the planning, designing, creating and budgeting really paid off, as I believe quite a profit was made and your customers certainly looked very happy as they left with their purchases. Well done!

Yesterday, we had a lovely time partaking in Christmas Jumper Day and our annual Christmas lunch. With pigs in blankets, stuffing, turkey and golden roast potatoes alongside a choice of Christmassy deserts,

we had a truly delicious meal and a great time together chatting and pulling Christmas crackers. I would like to say thank you to the catering team for making our meal so special!

I also thoroughly enjoyed our Informal Concert, Mini-string and Speech and Drama performances. The quality of the music and drama at our school is exceptional. Keep up the hard work girls!

Mrs Nike
Head of Pre School & Preparatory

Reception Makes Treats for the Christmas Fair

Last week, Reception were very busy making lots of treats for our class stall at the Christmas Fair. We decorated different festive pictures to make Christmas tree hangers and gift tags. We also had so much fun making our own delicious jam which sold out very quickly!

Our raffle was popular with many visitors and we are very pleased to announce the winners of our three prizes:

1st Prize: Snowy the Teddy
Sophie (Reception)

2nd Prize: Snowman keyring
Mrs Burton

3rd Prize: Santa's key
Isabella (Reception)

Thank you to everyone who came to visit and support Reception's stall!



PTA Christmas Fair

After an absence of a year, the PTA Christmas Fair was back on Saturday and what a fun day it was. Mrs Burton writes:

"The stalls that the girls ran were lovely and I know that doesn't happen without a huge amount of input and support from staff and the PTA. I am now the proud owner of numerous Christmas decorations, a gingerbread fridge magnet, a new hot chocolate mug, chutney, jam and so much more! My thanks to the steel pans and Miss Fitzgerald for the music during the event; it was lovely to see the Prep pupils perform after such a long while. The atmosphere at the event was really positive; Mrs Nike and I were on door duty and so got to talk to families as they left. They certainly all enjoyed themselves."

It was lovely to see so many familiar faces once again at this event.

The PTA would like to thank the student, staff and parent volunteers who helped run stalls, the external vendors for hosting stalls at the fair and the caretakers, catering staff and Mrs Jordan - for their invaluable help and support in the run up to this event.

We wish all our students, staff and friends a blessed Christmas and a Healthy and Happy New Year.

Old Palace PTA



With thanks to Mr Parris for the photographs.

PTA Christmas Fair *continued*



OPA & Friends Carol Service

On Monday, we held the OPA & Friends Carol Service, which despite being held in the Banqueting Hall rather than the chapel was still a very special evening.

We were particularly delighted to welcome residents from the Whitgift Care Home; we know they really enjoyed being out for the evening and it was so nice to chat to them after the service.

Mrs Homatas, chair of the OPA added: *"We all enjoyed the choir's beautiful singing; it was very kind of the girls to give up their time for us and make the evening so special. We would also like to thank Father Andrew, Mr Griffith, Miss Orr, Miss Kolpaktchi and Mr Haigh-McLane and his catering team for the refreshments."*



Year 7: Creative Workshops

DT Workshop

In the DT workshop, we learnt how to draw isometric cubes and shapes in the first few lessons. After that we used computers to log in to an online website called Tinkercad, which talked us through building and creating 3d shapes. It was a very interesting experience and it really improved our knowledge of interior and exterior designing.

Sofia, Year 7

Drama Creative Workshop

In the Drama Creative Workshop, we were looking at *Alice in Wonderland*. We were put into groups of three or four and given different scenes to act with. We also had lessons on how to emphasis our words and how to present to the audience nicely.

Hanna, Year 7

Music Workshop

In the music workshop, we learnt a song called 'You Gotta Be', a song about being courageous and brave. We learnt section by section, and once the whole song had been learnt (which was fast because of the efficiency of the system we learnt it in), we recorded a visual and audio video, then another audio recording. I had lots of fun and found the workshop very interesting and engaging, with incredibly supportive teachers.

Maths Puzzle Fun

If $9 \rightarrow 63$
 $8 \rightarrow 48$
 $7 \rightarrow 35$

Then $4 \rightarrow ?$

- A) 4 B) 8
C) 12 D) 16

Answer on page 19

Christmas Dinner at Prep



On Thursday, pupils at Prep had great fun dressing up for Christmas Jumper Day and enjoying our annual Christmas lunch.

With pigs in blankets, stuffing, turkey and golden roast potatoes alongside a choice of Christmassy deserts, we had a truly delicious meal and a great time together chatting and pulling Christmas crackers together.

Thank you to the catering team for making our meal so special!



Christmas Jumper Day at Prep

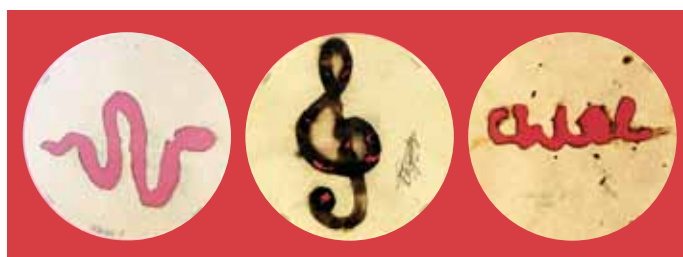


ChemSoc – Lights for Winter Nights



As the nights draw in and darkness falls, students at last week's Chemistry Society meeting explored some of the more luminous aspects of Chemistry.

The session concluded with the magical effect of students combining two chemicals in a beaker to create chemiluminescence in a pitch-black lab. Our little glowing "lamps" gave the feeling of another world. Amazing!



Lilia and Dimanthi in Year 12 write:

This week at Chemistry Society, we had the opportunity to participate in three fun experiments. Our favourite was the first one in which we filled small tin discs with 20 drops of methanol and then added a metal compound of our choice. When the methanol was ignited with a splint, beautiful coloured flames appeared, caused by the metal ions in the compounds. Dimanthi's favourite was copper chloride which produced a vibrant blue-green flame. Lilia's favourite was potassium chloride which produced a lilac flame. We thoroughly enjoyed this Chemistry Society session and look forward to the next one!



Lilia and Dimanthi were also announced as the winners of the Practical Potions competition.

Suraiya in Year 12 writes:

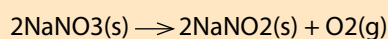


As part of ChemSoc this week, one of the three main activities was 'writing with fire'. In this experiment, we used a small paintbrush to draw a line-drawing (i.e. initials, abstract designs or even full first names!) with sodium nitrate onto a piece of filter paper. We then held a lit splint near to the point where we

started the drawing until the paper started to glow and char. We removed the splint and watched as the paper charred along the line where we had added sodium nitrate, revealing our drawings and leaving the untreated filter paper untouched.

Although initially we experienced some problems, with our design stopping burning mid-way through, we soon realised that we needed to thoroughly dry our filter paper using a hair dryer before bringing the lit splint near it. Almost immediately after, our 'fire-writing' experiment was successful, with most of us managing to reveal our full initial drawing. Several drawings were particularly impressive, with some even managing to write out their whole first name!

Not only was this experiment extremely exciting to carry out, but the science behind it was just as fascinating! After recapping the 'fire triangle' where oxygen, heat and fuel are needed to allow for a combustion reaction, we discovered that sodium nitrate decomposes to produce sodium nitrite and oxygen, and it is this oxygen which helps to sustain the burning process.



I really enjoyed ChemSoc this week! Each of the activities was brilliant and really exciting to try out. It was also great to apply the chemical reactions we learn in class to unfamiliar experiments, producing some truly beautiful results.

Community News

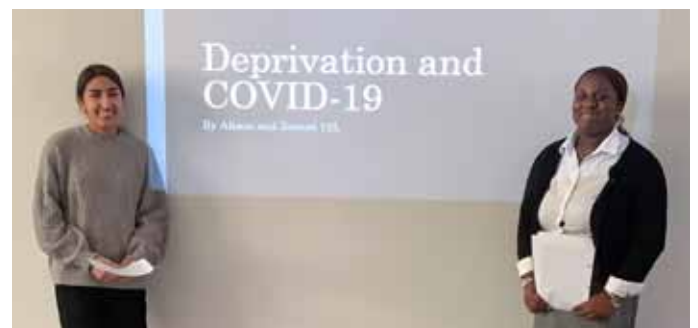
POD (Point of Departure) Week at Seniors

The week beginning the 22nd November was POD week at Seniors. PODS (Point of Departure) are events at which an expert speaker delivers a mini-lecture to an audience on a topic area in which they are interested in. Traditionally these events have been run by staff, but this year Sixth Form students took the lead to deliver some excellent PODS!

Subject areas covered included the Psychology of Fear, Marvel Design, Alexander McQueen fashion, social media and how things glow in the dark. Many students throughout Year 7 to 13 came along to learn more about the fascinating topics. One audience even had an audience of over 80 students - a nerve jangling prospect for the presenters!

This was a really exciting and interesting week thanks to the organisation, dedicated research and outstanding presentation skills of our Sixth Form students.

Well done to all involved – you should all be very proud of your achievement!



Year 12 & 13: Biology Mentoring Project



During the course of this term, Year 12 and 13 biologists have been mentoring in the biology department. The aim of this project is for the Year 12 and 13 students to have the chance to aid the younger years with their practical skills.

The sixth formers have successfully helped Year 7 and Year 9 classes prepare and observe slides, and the Year 13s were able to assist Year 6 to dissect hearts. I think this is a great way for the sixth form biologists to not only build connections with the younger students, but also for them to be able

to put their passion for biology into action. I think being in the classroom with the younger students creates a different, but positive atmosphere from what they are used to, and it's a fun and engaging way for them to carry out their biology practicals.

Overall, I think this has been an amazing opportunity for Sixth Formers and younger years alike, and I am looking forward to the next time I can help out in the classroom.

Amelie, Year 12

'What I enjoyed the most was explaining and demonstrating the practical skills to the younger years.'

Chloe Marie, Year 12

'I enjoyed enthusing the students and supporting their knowledge and understanding'

Vishali, Year 13

'I found it useful because it allowed me to think back on the skills I have learnt and present what I know to younger students.'

Abhirra, Year 12

'I found it useful as it helped me to build communication skills with the younger students'

Madeleine, Year 12

'You get to know more people and learn about their own experiences, and it makes me feel more motivated and comfortable.'

Dana, Year 9

'They helped a lot by showing us how we can improve our work and what we should be doing better during the experiments which helps for the next time we do them.'

Mosfera, Year 9

'It was helpful to have extra help around the classroom. It was interesting to see how the sixth formers performed their work.'

Isabella, Year 9



Clubs: Spotlight on...Drama

In addition to rehearsals for 'Beauty & the Beast', the Drama Department has had a busy week of lunchtime clubs.



Year 7 Drama Club

Year 7, Drama Club performed the devised piece they have been working on this term, with a focus on storytelling. The piece they devised was an eerie murder mystery. Our suspect, Gloria Clark, was found dead in an abandoned glass house in the middle of the woods, and the only clue was a slingshot wound. The piece was set in the house only hours after the murder, where our two detectives gathered all of the suspects and, one by one, interviewed them to find who was guilty.

Year 7 students gave a fantastic performance and demonstrated all the skills we had been building on in the lead up to this performance. The piece was also directed by Nia in Year 8 who did a fantastic job coaching these young actors and helping them structure the plot of the piece.



Improvisation Club

Improvisation club, which is open to Years 9-13, had a final rehearsal in preparation for their end of term performance next week. This term, students have been developing their improvisation skills through comedy sports games.

Next week, students will play these games in front of a live audience. The improvised performance will be competitive, with the winning team decided by the audience.



The Palace Players

The Palace Players have also been working hard planning their event for next Monday. The Palace Players is a leadership Drama Club for students in Years 10-13. These students plan different workshops and activities for students. On Monday, they have planned an escape room for Years 7-9. Students will need to use their acting skills to escape the Drama Studio!

They are also organising a playwriting competition. The deadline for submissions is the end of term. If you want to participate in the escape room, please complete the Microsoft Form emailed to students last week.

Next term, Drama Clubs will be working towards a May evening performance as part of the Drama Festival.

More information will be released next week. We encourage students to get involved. Come join us!

Senior School Dance Show: Limitless

The Old Palace Dance Department has been looking forward to welcoming back our audiences for many months now. Last Thursday, students and staff showcased a fantastic array of 22 different dance performances – all on one night, with nearly 90 dancers!

It has been two years since our last whole school dance production and for many students this was their first dance performance at Old Palace. With a variety of styles, genres and cultural influences, Limitless truly showcased dedication, passion and enthusiasm for Dance.

Over the course of the last few months, students from Years 7-13 have been working extremely hard learning new choreography, ready to perform to an advanced level in the production.

The initial audition process allowed students to audition in solos, duets or group pieces that could be selected and placed in the show. Alongside the auditioned pieces, students from clubs such as Indian Dance, Street Dance, Afro-Beats, Dance Ensemble and Old Palace Dance Company, were able to perform larger group performances that were choreographed by teachers and Sixth Form students. We also had many students help devise and perform pieces from their Dance GCSE and Dance Leadership courses.

This experience enabled students to collaborate in different ways, as they were able to take on leadership roles and organise choreographies that proved a great success in the overall performance of the show. The result of everyone's hard work meant that the show was well organised, professional and had one of the widest selections of dance performances yet!

A huge well done to the dancers. You performed with true passion and love for dance. It was clear to see from the production how many talented dancers we have at Old Palace!

DVDs will be on sale and available on WisePay as of next week.

Ms Khan
Head of Dance



Senior School Dance Show: Limitless *continued*

I felt a bit nervous before it started. But I was excited to experience doing a dance show at Old Palace. It went a whole lot better than I had thought.

People were very supportive and kept reminding me it is fine to make mistakes. I saw my mum and sister looking proud in the audience. I could tell they were beaming with excitement before I went on and danced. They were both very proud of me when it was over, and I am proud of myself.

A huge thank you goes to Ms Khan and Mrs Barber for putting so much effort into producing something that we could be a part of.

Serwa, Year 7

I have only been in one other dance show in this school and that was when I was in Year 8. I had a passion for Street Dance so I leaped at the chance to join the Club, not knowing that it would lead to such an amazing performance!

When it came to the dance show, I was so inexplicably ecstatic to see so many costumes and dance styles. Now, I had the chance to play a bigger part in it and appreciate everything about dance and the show, but ten times more!

Every rehearsal and practice at break time and lunchtime and the rush of stage fright was all so worth it, as we got to see what had come from it and I know all the other dancers felt the same.

Stephanie, Year 10

I really enjoyed developing my leadership skills with the Street Dance group. It's been great to see the progress the group has made as a whole and there was a notable difference from the start of the sessions to the final product.

Having the freedom to be creative and using my artistic vision is something I really appreciate at school and I enjoy the challenge of mixing the sound track to transforming my ideas into movement and seeing the performance come alive.

Jaeda, Year 11



I found the Dance Show fun and enjoyable and I had a great time. In rehearsals it was interesting seeing all the other amazing dances that were put together by students in different years.

Opening the show with Year 10 dance GCSE was nerve racking but when we started dancing it was exciting. All the solos, duets and groups dancers were curious to watch and all had a different and interesting story behind it. Having Old Palace dance company end the show was very nice as it is full of lots of different dancers from different years and with different dance styles. This dance included lots of dance techniques like canon and accumulation, as did lots of other dances. Overall the dance show was a huge success and was very popular as we had a full house.

Thank you everyone who took part and performed amazingly and for every student and teacher who helped out. A huge thank you to the two incredible dance teachers who put in a lot of effort and choreographed dances to make this night possible. Thank you Mrs Barber and thank you Ms Khan!

Grace, Year 10



Computer Science Education Week at Prep



Computer Science Education Week is an annual global event in December designed to promote awareness of

Computer Science and its importance in our everyday lives. In 2013, Hour of Code was added. This is also a global initiative which teaches the basics of coding.

During CSEd Week, all classes from Reception to Year 5 have taken part in a coding lesson tailored to their age group, whilst also learning key vocabulary. Reception and Year 1 had great fun programming Beebots to travel around a grid to reach pre-determined destinations. Years 2 to 5 enjoyed using Scratch Junior and Scratch 3.0 to build their own algorithms, including speech bubbles, motion, sound, controls and loops to repeat chosen commands. Girls in KS2

took the opportunity in their lunchtime to work independently in the IT suite on follow-up activities.

In addition, Year 5 have learnt about Binary code and the Binary alphabet. They used it to write their names and also worked out the numerical value of individual letters.

Two useful websites, with free coding activities for use at home or at school, are listed below. We hope you enjoy them!

<https://hourofcode.com/uk/learn>

<https://www.barefootcomputing.org/homelearning>

Year 7 Science Challenges Club

The last two challenges have seen Year 7 attempt the 'Egg Drop' challenge and the 'Water Clock' challenge.

Egg Drop Challenge

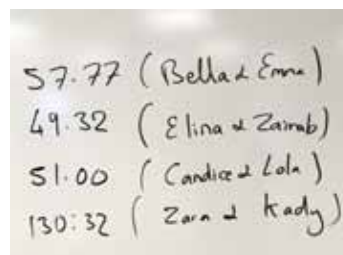
The students had to use the science of inertia to get the egg to drop in the cup of water. The first attempts were with boiled eggs, but at the end of the challenge all students had the confidence to use a raw egg. A SMASHING time was had by all.



The Water Clock Challenge

Water clocks are one of the oldest time measuring systems. It is so old, the origins and original creators of the water clock are not known. Evidence of water clocks in Ancient Egypt date their use to the 16th Century BC.

However, some historians believe water clocks have been used in China as far back as 4000 BC. There are two types of water clocks: one measures time using inflow, the other measures outflow.



The students clocks involved collecting water into a vessel with markings to track the passage of time. Well done to Bella and Emma, who managed to use their clock to accurately time 1 minute.



Talking COP 26

The 26th UN Climate Change Conference, also known as COP26, took place in Glasgow in early November. The aim of the COP26 summit was to bring countries from around the world together and to agree how to achieve a net zero future, by phasing out coal, decreasing deforestation, speeding up the switch to electric vehicles, and encouraging investment in renewable energy.

Senior students have been exploring the issues surrounding climate change in a wide range of settings this term following our assembly from Sonnedix in early November.

Here are some examples:

Geography: Although climate change will have an effect on all our daily lives, some places will be impacted more than others. Year 8 Geographers have been learning about the causes of climate change, and through a mini UN climate conference they have learnt about the impacts of climate change in the Maldives, Australia, USA, Bangladesh and Kiribati.

History: Year 8 historians have been studying Environmental History this term, considering whether the impact of the environment on History is predominantly natural or man-made. They began by looking at humanity's relationship with nature, considering how in the past humans often found themselves at the mercy of the environment but how, especially in the 19th century, they began to see the environment as something they could control and exploit. The next lessons looked at the causes of the Dust Bowl catastrophe in the 1930s in the United States, the Great Smog in London in 1952 and Hurricane Katrina 2005, considering how much of the devastating impacts were the result of human failure and how much simply a 'natural' disaster. This was followed by exploring a series of case studies of different wars and how their outcomes were shaped by environmental factors (winds and storms, disease, extreme cold).

Design & Technology: In Year 7 students have been learning about energy generation and storage (renewable and non renewable) and Year 7 Scientists have been studying the topic of 'Energy and Fuels' in their Science lessons. This has included independent research on alternative renewable sources of energy. Following this they will be taking part in bp's Ultimate STEM Challenge: My net zero community. This competition invites young people to look at the things they can do locally and to use science and technology to come up with a net zero plan for their own community.

For more details go to:

<https://bps.bps.com/ultimate-stem-challenge/list>

Physics & Geography: GCSE students have been assessing the advantages and disadvantages of non-renewable and renewable energy resources, and how it is possible to achieve energy security and sustainability at the same time by using renewables. In addition Biology & Geography: GCSE have been exploring how the equilibrium of ecosystems can be affected by humans.

Recommended Reading and Watching:

The library recommends these books if you would like to find out more (see pic attached). The Earthshot Prize on



BBC iPlayer is also an excellent programme, and this also inspired **Amy and Indraani's POD: COP26: An engineer's perspective. How will we reach net zero?**

The Earthshot Prize founded by Prince William, and it will award £1million to 5 projects each year for the next 10 years. This means that there will be 50 prizes awarded, providing at least 50 solutions to the world's greatest environmental issues by 2030. Companies and individuals came up with amazing ideas to protect and restore nature, clean our air, revive our oceans, build a waste free world, and to fix our climate. Here are two examples:

- Tackachar was the winner for the Clean Our Air category. This clever innovation is designed to fight climate change by transforming massive amounts of waste biomass in India into marketable products around the world. This is helping to reduce air pollution and CO2 emissions, by for example converting waste biomass into solid fuel, fertilizer and other specialty chemicals.
- Vinisha Umashankar proves that you are never too young to help the environment and make a difference. She is 14 years old and she developed an innovative solar powered ironing cart, to be a clean alternative to the charcoal powered street irons that press clothes for millions of Indians a day. The solar powered cart also has an integrated a built in phone charger, meaning the vendors can charge for this service too.

Small actions can make a big difference. Here are some ideas to get you thinking... and to be more ethical – at Christmas and beyond!

- Support a charity when you shop: for example using *Amazon Smile* rather than Amazon allows you to nominate a charity to receive a donation with every purchase.
- Use an ethical search engines such as "Ecosia" or "Ocean Hero". Ecosia plants trees when you search and Ocean Hero removes plastic from the ocean!
- Use brown paper instead of wrapping paper & decorate it
- Reuse gift bags and boxes, recycle cards to make crafty new ones.
- Give experiences rather than things e.g. theatre outings, meals out, Thames Clipper trips, cookery
- Do a "reverse advent calendar" and donate an item each day.
- Buy gifts from charity shops.
- Send e-cards instead of physical cards or use ethical cards such as 1Tree
- Re-plant your Christmas tree



Seasonal Reads



Student librarian *Ella* recommends...

The Very Merry Murder Club by a variety of award-winning authors, edited by Serena Patel & Robin Stevens.



Suitable for Years 7 and upwards

"Containing 13 festive-themed short stories, each unique, fun and will keep you guessing.

My favourite was the first story, Shoe-Dunnit by Elle McNicholl. I also enjoyed the final story, The Cove(n) at Christmas by Sharna Jackson"

If you like this, you should also read...



Student librarian *Olive* recommends...

The House in the Woods by Yvette Fielding.



I recommend this for those in Year 8+ that like fast paced, gripping horror books to read - In three words: Intriguing, Frightening, Brilliant! 4.5/5"

"Three friends, Clovis, Eve and Tom have found an interest in the paranormal. When they use an Ouija board for a laugh on Halloween, it unleashes a spirit with unfinished business. Will they help the spirit rest in peace, or will it be forever restless.

If you like thrillers*, try



If you like the supernatural*, try



* Some have adult themes, suitable for older readers

Student librarian *Natalie* recommends...

Stay Another Day by Juno Dawson is a thought-provoking, heart-warming festive, family-centred, cheesy-Christmas read.



Suitable for Year 9 and upwards

If you like relationships stories, try...



Year 12 and 13 Physics in Action Conference

The *Physics in Action* Conference was an amazing trip. The Year 12 and Year 13 physicists had the opportunity to listen to five of Britain's top physicists who led us through an inspiring day, delving into physics and its applications, and taking us beyond our classroom experience with cutting-edge research and demonstrations.

All the sessions were as good as one another. The topics covered included *Resistance is futile: the science of superconductors* by Andrew Steele - Scientist, author and presenter: *Body x movement = thrill* by Brendan Walker - Middlesex University: *Do you have what it takes to be an astronaut?* by Suzie Imber - University of Leicester and winner of the BBC 2 Series 'Astronauts: Do you have what it takes?'; *What we don't know about the Universe* by Chris Lintott - University of Oxford: *Lighting the way to a healthy brain* by Gemma Bale - University of Cambridge and an additional special session on examination success.



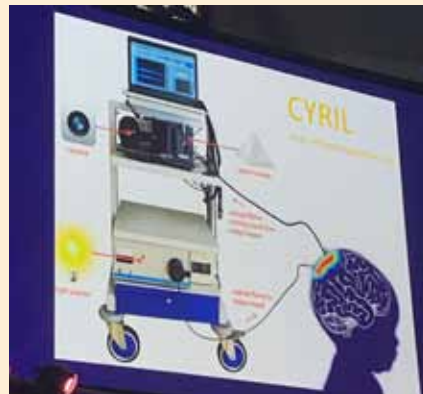
Lighting the way to a healthy brain – Innovative ways to look into the brain and Dimanthi making Old Palace proud!



Being able to attend the *Physics in Action* conference in London was such an invaluable experience, not only broadening the depth of our physics knowledge, but highlighting physics' key role in everyday life. An example of this was a talk lead by Gemma Bale, who went on to explain the application of Physics in Medicine. It was incredibly interesting to learn more about the conjunction of medicine and physics, especially as an aspiring biomedical engineer.

The talk was really engaging, and we were given the opportunity to physically test how the visible light spectrum is used for new born babies in the intensive care unit, to monitor their health.

We did this by using small coloured flashlights to prove how red light can be seen though human tissue. Gemma then went on to



explain how by using the same principle she helped design and make 'CYRIL', which uses optical fibres to monitor brain activity and ensure the baby is healthy without having to move them out of the ICU and putting the baby at high risk. She also demonstrated how the machine worked, taking a volunteer from the audience to have their brain activity measured.

The volunteer to our surprise and excitement, was our fellow old palace classmate *Dimanthi*, who represented us and the school brilliantly. She made the school very proud with her superb mental mathematics skills, to the point that the speaker ran out of questions to ask her. A member of the audience finally gave her a very hard challenge, which finally led her to start thinking hard, hence allowing us to see how oxygenated blood flew to her brain as she calculated the problem in her brain.

Overall this talk was the highlight of my day, and I am so grateful to have been able to learn more about the field I am interested in. I believe that I can confidently say on behalf of all my classmates; that we had a really great time and we all were really inspired by the amazing applications of physics.

Indrani, Year 12

Superconductors



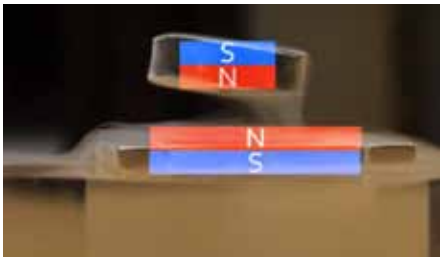
One of the speakers was Andrew Steele. He has PhD in Physics and has worked as a computational biologist and is also a presenter and author. He talks about his work on TV, radio, and YouTube. His talk was on superconductors - these are materials that scientists have known about for just over a century. When superconductors are below a certain temperature, they allow an electric current to flow inside them indefinitely without losing



any energy. Superconductors have many practical applications, such as perfectly efficient power lines, hugely powerful electromagnets for particle accelerators, hospital scanners and levitating trains.

It was fascinating to learn about the history of superconductors and their real-life applications, but the highlight of the talk was seeing them in action.

Continued on next page



The demonstration was carried out using liquid nitrogen to cool down a piece of superconductor, meaning it was able to float above a magnet. He then placed this superconductor above a small-scale magnetic train track, demonstrating how the superconducting magnetic levitation (or maglev) train really works.



I found this talk really interesting as superconductivity was a totally new concept to me. It has inspired me to do further research into the

applications of superconductivity.

Amy, Year 12

Body Thrill Adventure – The Physics Behind Roller Coasters

I specifically enjoyed the last part of the physics conference, which was “Body x movement = thrill”. We were able to discover how to generate G-Force on an amusement ride, and its relationship to thrill. In addition, we were able to understand why the first loop-the-loop coaster had a nurse on permanent standby and what delights a simulator’s six degrees of micro-motion can bring to future ideas.

I found this very interesting and there was a great overlap between engineering and neuroscience. The performance he gave was very interactive and everyone would definitely agree it was the best way of ending the physics conference.

It was very insightful to know how rides manufacturers can save thousands of pounds worth of steel work by knowing the exact drop required in a ride to create the maximum thrill created by ride users. It was very interesting to know the depth of the research done by people behind the creation of rides ranging from looking at the expression of people’s faces to arousal charts.

The session was run by Brendan Walker from the Thrill



laboratory. Brendan is the thrill engineer responsible for the stomach-dropping sensations on Alton Towers rollercoasters. His work has gained international notoriety. He says ‘There’s a tension in my work between creating discomfort and entertainment’.

Dimanthi, Year 12

Year 8: Athletics

On Wednesday, a small team of Year 8 students took part in a Sports Hall Athletics Event at Archbishop LanFranc School organised by the Croydon School Sports Partnership. The first section was based on field events including Speed Bounce, Standing Broad Jump, Vertical Jump, Standing Triple Jump and Shot Put.

After that the track events took place and varied from agility style obstacle races, distance races and a number of relay races. The Old Palace Team did particularly well in this part of the competition. Scores were then combined and we were placed a very respectable fifth overall.

Well done to Isobel, Keona, Maryam, Mariam, Tori and Olivia in Year 8



Seniors Sport: Swimming



In November, I competed in a Swimming Open Meet in Gillingham. I competed in the 50m and 200m Butterfly events. Butterfly is my favourite stroke.

My Coach says my best event is the longer distance 200m swim. That is eight lengths in our Old Palace pool. It is one of the hardest swimming events to compete in but I enjoy the challenge it presents. I swam a 17 second personal best time and finished second in my age group. I did not swim a personal best in the shorter 50m event however I was still pleased with my performance as I am not a sprinter.

Mrs Tamplin watched my swim, congratulated me and told me I am a tough cookie as there is no way she would ever have swum a 200m Butterfly!

Rosemary, Year 10

Seniors Sport: Water Polo



On the 28th of November myself and other Surrey Water Polo players competed in the U16 regional competition at Whitgift.

The Surrey team faced other teams from within our region. There were some very tough teams to play, however we came away in bronze medal position. It was challenging and a great opportunity to play at a high level. We learnt some valuable lessons in resilience.

It was an amazing honour and great experience to be chosen to represent Surrey. The rest of the Surrey team and I are very proud of our achievements. We are excited at the prospect of playing together again in the future.

Lily, Year 11

THIS WEEK IN HISTORY... ROSA PARKS REFUSED TO GIVE UP HER SEAT



On December 5, 1955, in Montgomery, Alabama, Rosa Parks refused to give up her seat to a white man. This triggered a year-long bus boycott by African Americans that finally ended when the US Supreme Court ruled in December 1956 that segregation on the buses was illegal.

Maths Puzzle Fun Page 4 Answer

Answer: B) 8

Explanation: Here given that $9 = 63$, $8 = 48$, $7 = 35$, ...

The given question follows a pattern that $9 \times (9 - 2) = 9 \times 7 = 63$

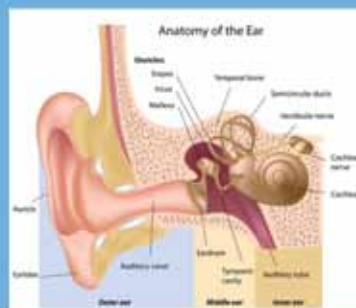
$$8 \times (8 - 2) = 8 \times 6 = 48$$

$$7 \times (7 - 2) = 7 \times 5 = 35$$

Similarly, $4 \times (4 - 2) = 4 \times 2 = 8$

Last week's winner was **Mahnoor** in Year 7

Classics Department Word of the Week 06/12/21



OSSICLES

Small bones in the middle ear.

From Latin *ossiculum*, diminutive of 'os' - bone.

