AVANTI HOUSE
EXCELLENCE · VIRTUE · DEVOTION

SCIENCE WEEK @ AVANTI HOUSE PRIMARY SCHOOL

On Monday 15th March, we launched this year's Science Week at Avanti House Primary School! After a year of Covid and vaccines making daily headlines and becoming such an important part our lives, it was imperative that the Science Week would be based on 'Innovating for the Future'. At Avanti House we strive to support children to become well rounded global citizens through intellectual, moral and spiritual growth and so make the world a better place. What better way to do this than by making innovations for the future keeping in mind the wellbeing of all. During this week, a mixture of practical and creative activities fuelled our pupil's imagination and they came up with many innovative ideas for the future. Teachers set up a challenge three days of the week and on Friday we had in class presentations to vote for the best innovative ideas, designs or creations in class. Here are some highlights from our investigations during the week.

RLL

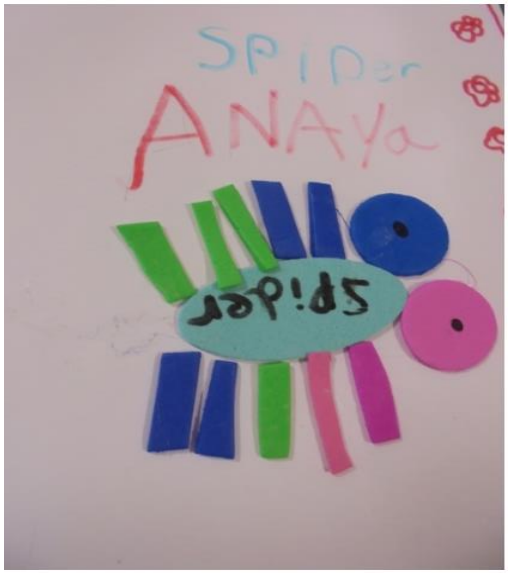
Yogiraj and Aarav worked together to create their own musical instruments using junk modelling for the CREST experiment. They explored the different sounds they could make. They also reflected on their work and achievements and wrote some sentences about their work.

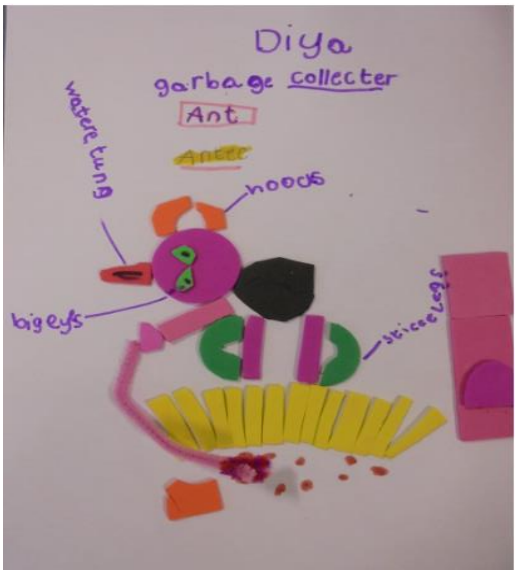
RBB

RBB would like to recognise the innovative musical instruments designed and created by Vraj and Govinda. They explored the different sounds made by various materials, then constructed their musical instrument carefully. Both pupils took pride in sharing and demonstrating their learning with peers.

1TT

1TT designed and created a RoboBug . The two Science winners were Anaya for super spider innovation to help people with arachnophobia and Diya for designing a garbage collector to help the environment and make the world a better place.

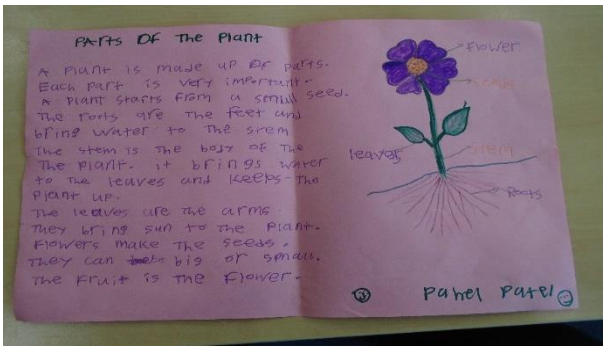


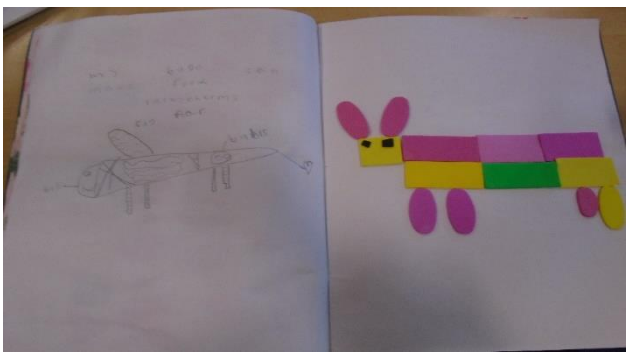


1DD

Nivana 1DD designed and created a RoboBug that would make food! 'I don't want anyone to be hungry, so my bug will make food for everyone and make sure they sleep with a full tummy'.

Pahel 1DD brought her learning of Plants to life by creating a plant made from paper, labelling the four main parts: roots, stem, leaves, flower. She then created a poster providing more information of why each part of a plant is important!



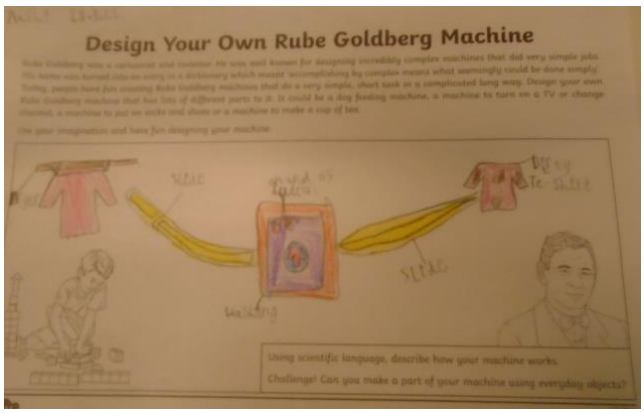


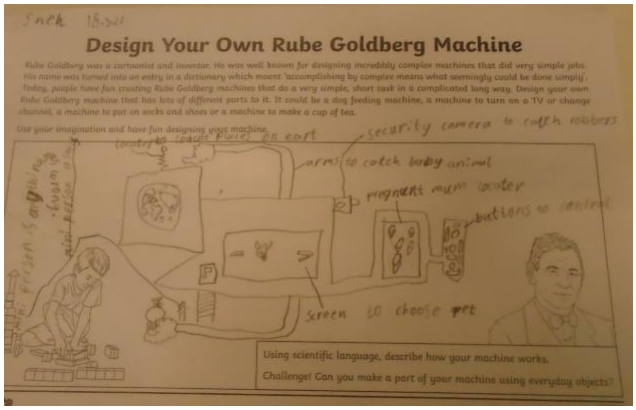
2PP

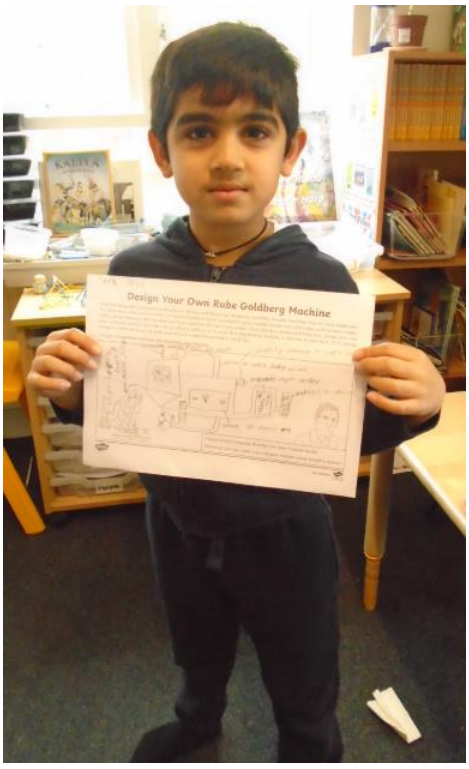
Children from 2PP designed their own Rube Goldberg Machine.

We designed our own machine and pointed out the useful things that my machine could do. My machine can do lots of useful actions. It has a security camera to catch robbers. The machine will also have a 'mini person' stay inside the machine to fix it if something goes wrong – Sneh Haripara

My machine washes clothes and dries them on a washing line with pegs by itself. You put the dirty clothes from one side of the machine, the machine washes it and finally it hangs the clothes on a washing line to dry in the sun – Aashi Hirani







2FF

In Year 2 we kicked off Science Week discussing the theme of 'Innovation' and what that meant to us. From the simple pencil to space rockets, we discussed how we are surrounded by innovation. The children then found out about Rube Goldberg and how he created 'complex machines for simple tasks' – after watching a stimulating number of examples the children then designed their own machines! There were designs for complex machines that could water your plants, make a pizza or put on your socks!

We also looked at making our own amazing lava lamps. The children created their own using oil, water and food colouring, noticing the changes and behaviours of the liquids. During the week children were encouraged to ask 'What happens if..? and 'I wonder why..?' to stimulate thinking, discussion and theorising.

On our second day the children explored special adaptations and innovations belonging to the natural world…in this case bugs! The children learned that bugs have their own special innovation for survival and how sometimes these innovations are used by use to design new innovations. The children then designed their own robot using the special features of insects to help them reach a goal. For example, a research and rescue robot that could crawl over rough terrain used the same feature as a centipede as well as a dragon fly so it could fly anywhere. Lastly the children explored static electricity using balloons, paper, and a drinks can. The children watched in wonder when pieces of paper seemed to 'dance' and attract to the balloon, as if by magic. Through investigation they also explored how using static electricity (by rubbing the balloon gently or vigorously on their hair/jumper) made a cans drink move!

It was a week of wonder and the children really enjoyed their time during Science Week. Our worthy recipients of the Science Awards are Jaynaa for her investigation at home, observing the effects of adding bicarbonate of soda to hot and cold water. Also Kriya for her work throughout Science Week including her creation of a 'Litter Bug' using elements of nature to design her useful robo-bug as well as designing her own feeding machine inspired by the work of Rube Goldberg. Well done.

3KK

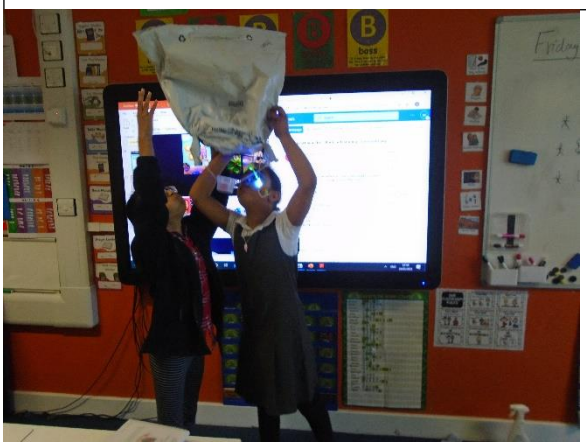
Science Week was a week full of fun activities. Children did three activities – crafty rafts – making the strongest raft, Spectroscope – splitting light and Plastic polymer inventions where children made their own unique creations out of plastic.

Crafty Rafts – *by Yuvraj and Amaiya*

We made crafty rafts out of different types of paper. Each pair was given different types of paper. We had to make a raft that was the strongest. We used the scientific skill of identification and observation of the different properties of the materials given to us. We knew that the foil paper is the strongest and lightest. We used foil and used a video presentation to make our foil boats. We tried to make the boat small so it does not have much weight of its own and does not sink. Then we swam the boat in a bowl of water. Our boat could carry 77, 1pound coins and it was the strongest in the class. Through this activity we learnt the value of teamwork, perseverance and resilience. When we did not know how to make a boat, we persevered and finally learnt how to build it.

Polymer problems *by Danya, Dvira and Anvi*

We made a hot air balloon or a parachute out of plastic. We took a plastic bag and attached string to the handles of the bag. This made it look like a basket. Then we attached the other two ends of the strings to a small container. We also attached a light to the parachute to combat the safety issues at night. At night, the light would guide us so that we will not bump into a tree. We used the skills of observation and identification of the properties of different materials to help us to make this parachute. We learnt the values of team work, self-discipline and sharing through this activity.



3GG

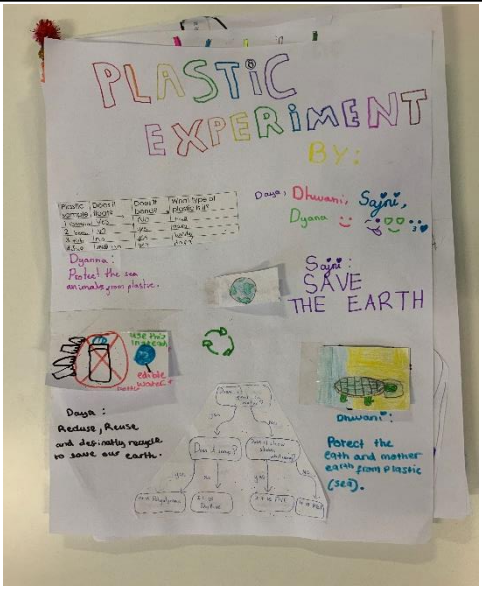
For science week we did three investigation. The first one was making and testing crafts, spectroscope, and Polymers. My favourite investigation was the polymer investigation as the email from Dr Poly Murs made me curious about creating something new and practical. So, I decided to make a recyclable and reusable bow that you can change the colour according to your outfit. I can't wait create more items using polymers – Leeya

During the science week, I was creative, self-motivated, and patient. I showed patience while working in a group and sharing my ideas. We created the helping car which was made from recycled polymers. During the spectroscope and craft investigation, I was self-motivated and followed the steps. I was excited to do three investigations as it helped me build my attributes. - Vanaiya

4HH

Group 1- Dhruv, Rian, Tanay, Sathya Sai
For this lesson, we were looking at the many different forms of plastic and how they were made. The group created an amazing poster to identify and categorise the different plastic samples. They were able to use a flow chart to correctly identify the plastic samples and showed curiosity to investigate their different properties (such as how some plastics sank and how some showed stress whitening). They were able to write careful instructions of how they conducted the experiment and present their findings in an interesting and eye-catching manner

Group 2- Nikita, Sanjana, Hari, Saburi, Niam and Maani
For this session we were looking at how toothpaste was made. The whole group showed co-operation and curiosity to investigate how small changes in the ingredients affected the outcome. The children identified that they needed corn starch to help thicken the mixture. The children also investigated the effectiveness of their toothpaste by attempting to brush out permanent marker from a penny. They remembered that the penny was a rough comparison to Teeth as the rust was compared to the enamel.

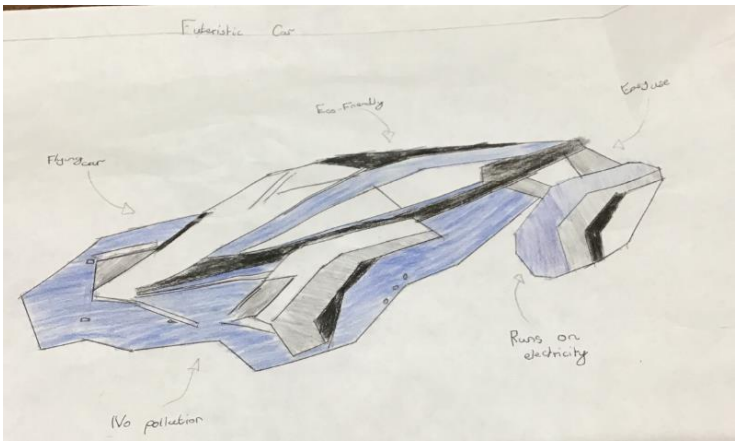


4RR

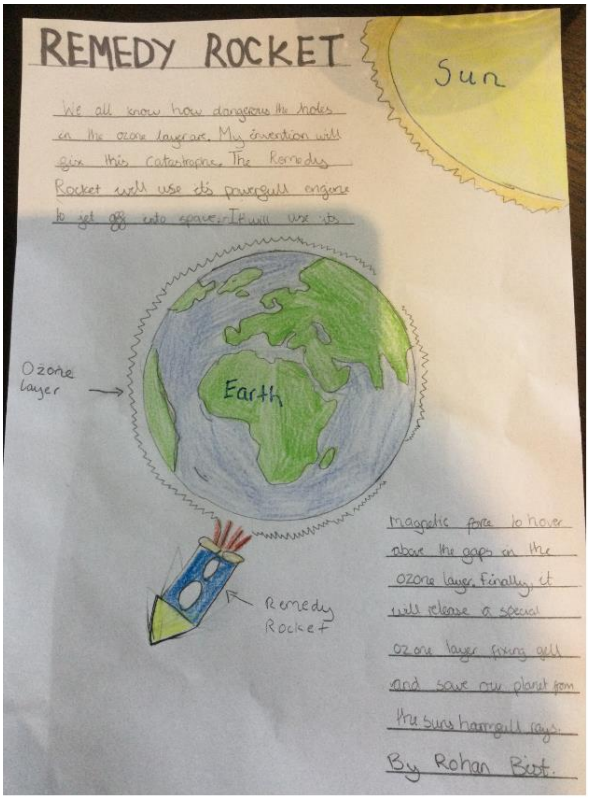
My winners are:
Devam Patel 4RR for great in depth questioning during the activities . He was able to use the scientific skills of planning and carrying out simple investigations about plastic and making toothpaste. Devam was also able to reflect upon what he learnt from the investigations- such as' although plastic is useful it needs to be recycled as its harmful to the planet , as it fills the seas and kills animals '. Devam also made links to what he had learnt about teeth from the topic of Animals including Humans, from autumn 2, to test the effectiveness of the toothpaste his group made, by deciding to rub toothpaste on the oxidized copper coins to see how effective they would be at removing stains (copper oxide).
Krisha Patel 4RR for reporting findings of her group's investigations in an organised manner, reflecting upon the usefulness of the innovation in real life. From her research, Krisha realised the importance of the work of STEM people and how all the different roles they play help move science forward. She recorded on how her group also reflected about the science behind the making of toothpaste- its the taste, colour, texture, smell and thickness that counts as well how effective it is at removing stains.

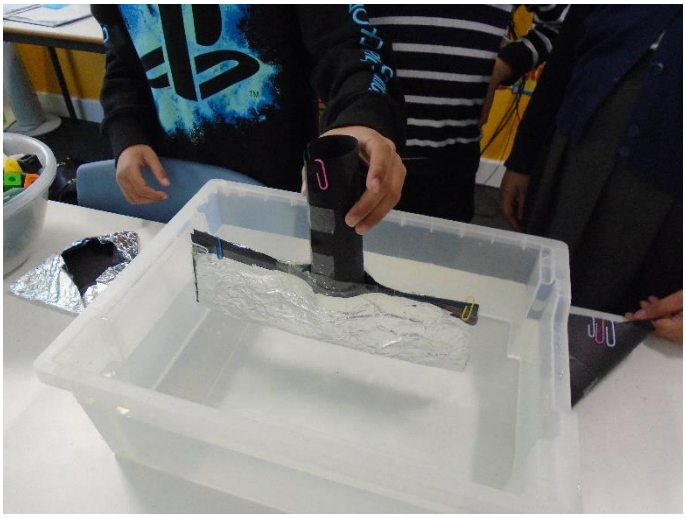
Walters Journey
Hello, I'm Walter and I'm going to tell you about what I do. I am a raindrop and I have a very important job as a special liquid called water. All water moves continuously and is recycled over and over again! This is called the Water cycle or hydrological cycle. It is the journey I will take from the sky to the land and back to the sky again. This means that the water we drink today has been around for as long as earth, so I am very old! Do you know the stages I will pass through on my journey?

5SS



The hover car that I have drawn is very easy to use. Even though it only has 2 seats, it's eco-friendly. Instead of running on fuel, it runs on electricity. Also, it isn't very fast because then it would be harder to control and you may cause an accident. I would recommend this car to others since it doesn't do anything bad to anyone and it helps make the 'World a better place'. **Aryan Vekaria – 5SS**





5JJ

Shayan, Shriya, Aashi, Krish H, Shyam, Mehek -This group was chosen for their critical thinking and teamwork. During the science week, we did an experiment about buoyancy. I recalled the Archimedes principle (the law of buoyancy) which states, “An object which is immersed either fully or partially in a liquid, it passes through an upthrust force. The liquid displaced by the object must be heavier than the object displacing the fluid to float.” We were asked to design a model raft that can float using black card, foil, and tape. We used marbles to test how much weight the raft can hold.

We first created plans to create 3 rafts. We all discussed the possible shapes of a raft. We then chose the 3 strongest shapes. To make the test fair we used the same amount of water.We took turns and put the marbles on the raft and tested our rafts. Our design worked and we proved that for a object to carry more mass it is based on 3 main variables ,the correct shape (good enough to block water coming in the structure) , volume (the bigger the size, the bigger mass it can lift) and material, which cannot absorb water. It was fun, and we worked nicely with cooperation. We all did a fantastic job and came up with fabulous designs and gave honest feedback. We evaluated our design and discussed the changes we can make to improve our design. By **Shyam Parikh 5JJ**

Innovations for the Future!

My invention is a medium sized aircraft that picks up rubbish whenever it senses it and it can clear the whole street in 5 seconds. Whenever anything is created in factories that can destroy the Earth, a special sticker will be placed on it that helps to make it easy for the aircraft to sense rubbish after it is thrown away and can collect it very easily. The sticker is magnetic to the bottom of the aircraft. The sticker is stuck with a chemical that makes it impossible to separate the thing with the sticker. Along with that, the aircraft also has the capability to dissolve all pollution and smoke into a chemical that does not affect the Earth. Also the dirty water gets evaporated by a gas that the aircraft produces, however this does not work on clean water. This will make the plastic out of the water and so that the Atlantic animals won’t die.

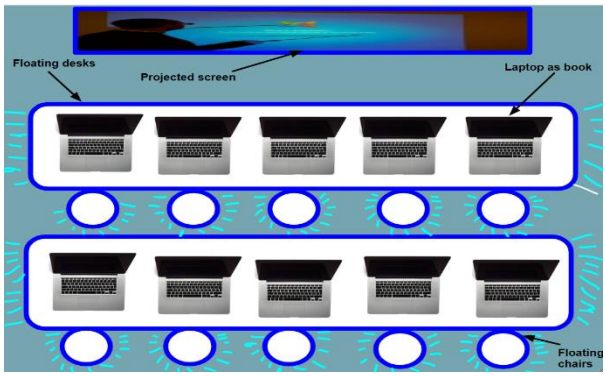
People will not stop cutting trees, but there can be a way to grow plants faster - and so as the aircraft moves, a laser makes a hole in the ground and then drops seeds there. Every week, it goes over the same area again to water the plants and give it its necessary nutrients. At the same time, it has an animal's sensor and saves animals from hunters, predators and more. When it hears a person’s call of pain it reaches there and identifies whether the person is in trouble or not. Then it pulls out the person from the water when they are drowning, or any other situation but it cannot help in health issues. The aircraft will be recreated to make many to control over different areas of the world to make it clean and safe.

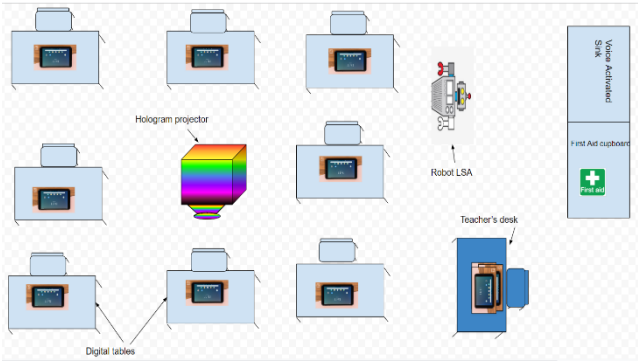
Tanisha 5JJ

6OO

Crafty Rafts – *by Disha, Syum, Richita, Ishika, Smit, Maayan.* ***6OO***

Crafty raft is where we had to make rafts out of day to day life resources. Each group had a certain type of paper – my group had sugar paper. We had to wrap paper straws with the sugar paper multiple times until you think it's strong enough. When we were doing our rafts, each person had a task to fulfil – one person was giving tape to everyone and everyone else had straws to wrap. After we were taping them together. This was a life skill because we learnt to work together as a team and compromise with what everyone else wanted to do. Two people were trying to make sure that all the straws were together by using a thin rope and weaving through the whole thing. This is a life skill because you can use this skill for survival. Eg: If you lost your job, you could sell things that you have weaved to the public and make some money out of it. Whilst the two people were doing that, the others were using their creative skills to design a flag to put on the raft. I personally believe that crafty rafts helped me to understand that you can create something out of anything if you put your mind to it.

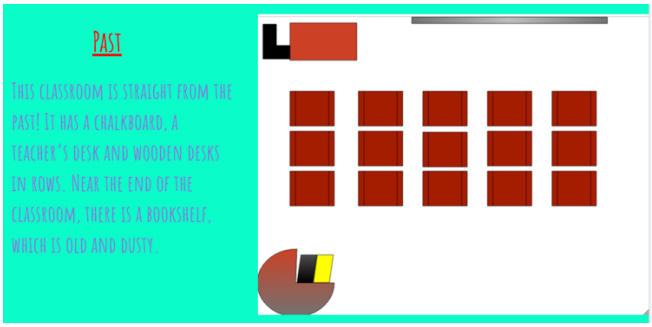


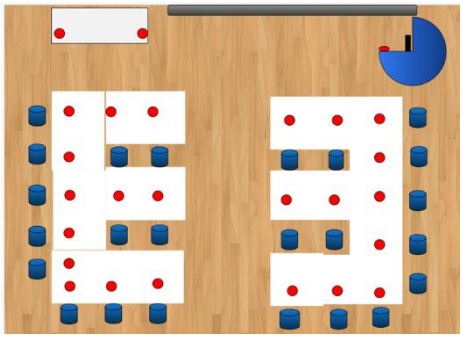


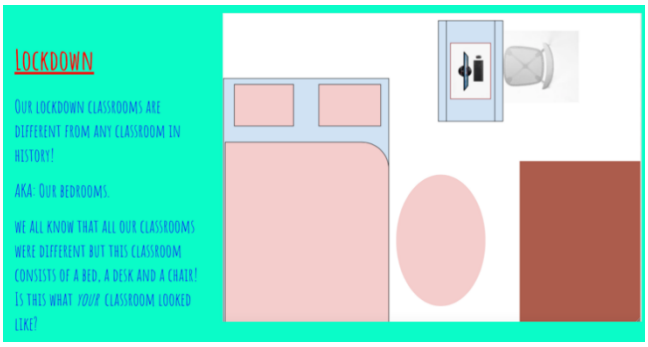
Visualising Classrooms of the future – by Chaahat, Prisha, Jash, Diyan, Vandan. **6OO**

Classrooms in the past, present, lockdown classes and future are and will be very different for example chairs, tables and set up in general. In the future, there might even be floating chairs and tables instead! The future is going to change from chalkboards to smart boards then to individual projected desks/tables. As technology grows, in the future, many gadgets will evolve and instead of students writing in books, they might start using interactive tables where they simply write their assignments without touching a pen. There may even be robotic teachers and LSA and this will help avoid close contact – very suitable for the Covid pandemic. Furthermore, marking may even be done instantly on their projected tables and chairs; students wouldn't have to wait for months for their exam results.

6CC

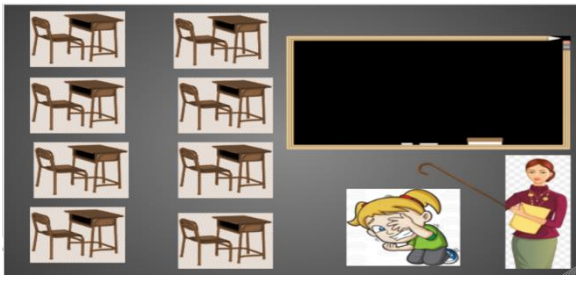






The task put our technological skills to the test. We used google drawings to design a birds' eye view of classrooms in the past, during lockdown and in the future. We had to use our computing skills to create a google slides presentation about our understanding of this theme. We also had to use our imagination to visualise what classrooms may look like in the future and research of what it looked like in the past.

We observed how science and technology has evolved from the 1920s (where we put our focus), to the recent lockdown and future. We saw the science behind the pandemic impacting the future of dynamic of classrooms. Technology and science are intertwined to make such changes to classrooms as we have displayed in our presentation for the future. **Fayth, Arhaan, Dwira, Dheer**



In this lesson, we explored how technology has advanced and changed the way we learn. On google drawings, we drew representations of classrooms from the past, present and future. In the past, there were no calculators or PCs. Instead, there were wooden desks, blackboards and chalk. During lockdown, our homes became our classrooms. Coronavirus affected the way we learn as we had to stay at home – technology has then had to be advanced and adapted to allow us to learn.

In the future, we predict that there will be virtual headsets, more technology to support learning – e.g., an app for almost everything and automated objects that come to us. This is how science and technology will be developed to meet the everchanging times we live in. **Freya, Khush, Shree, Kaylen, Dhruv J.**