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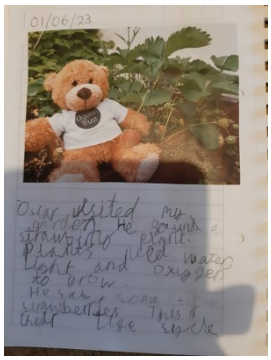
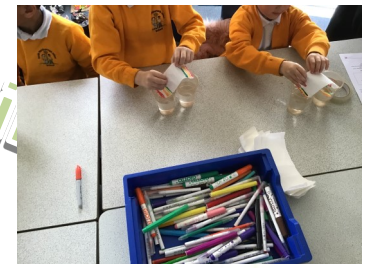
Our first year of collaboration

capital bags

Oscar the Ogden bear



year 5 stargazing



science ambassadors

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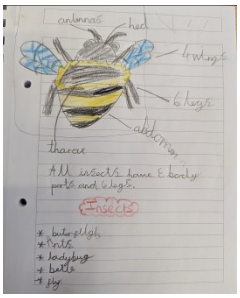
Oscar loved going on a mini beast hunt! He enjoyed seeing the children drawing the animals and sticking them on the aerial picture of the school in the places where the bugs were spotted! The children's Enquiry Question, 'Why are bees so brilliant?', really got Oscar thinking about why it's important to look after the bees.



South Farnborough Infant School

On Monday 19th June, our whole class went to RHS Wisley Garden Centre because we have been learning about plants in our Science lessons. We saw lots of flowers, fruits and vegetables. We learnt that seeds need to germinate and once the shoots start popping up, that's when the plant is growing! We really enjoyed going inside the big greenhouse where there are lots of different temperature zones. Our favourite was the tropical zone because it was so hot! It was also fun to see the cacti growing in the desert climate. We were so lucky to see an insect habitat where there were so many butterflies! We even got to hold a ladybird.

We have learnt so much about plants and have taken some seeds home to grow too!

By Frank, Cece and Lily (Year 2)

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The detection of black holes

The cosmic phenomena known as black holes was not detected until 2016 despite being theorised over 240 years before. The seeming difficulty on detecting and researching black holes is immediately apparent if its properties are considered. The huge gravitational pull produced by the mass of the black hole prevents light from escaping beyond a theoretical line called the event horizon. Therefore, the black hole appears dark under all Electromagnetic wave detecting instruments this results in very few methods of detecting black holes. One such method is using the emitted gravitational waves formed by the merging of two black holes. The technology necessary for this level of detection was not present until the 21st century resulting in the late detection of black holes.

Despite this huge step toward understanding black holes an actual image of one was not produced until October 2019 when the event horizon telescope took a picture of the supermassive black hole at the centre of the galaxy Messier 87. This new imagery will no doubt cause a new influx of scientific papers around the topic furthering our understanding of this cosmic phenomena.

Exploring Martian Tremors

NASA's InSight Lander has been used to monitor seismic activity on Mars since its successful landing on the 26th November 2018. Marsquakes, much like on earth result from a sudden release of energy within the planet and are being used to peer into the mysterious planets characteristics. In May of last year a 6 hour quake of magnitude 4.7 was recorded and the seismic waves that circled the Red Planet 3 times were used by Doyeon Kim in ETH Zurich, a public research university, where they estimated the crust to be from 42 to 56 kilometres thick compared to Earth's 15 kilometre crust. The crust was found to be thinner in the northern hemisphere on the planet. With this new understanding of the crust, ETH Zurich concluded that the internal heat of Mars is likely sourced from radioactive elements predominantly found in the crust. Drawing comparisons between these seismic waves and those on earth, it is thought that the low-frequency waves are likely a result of magma moving below Mars's surface which suggests Mars may not be a dead planet as many have theorised. By delving into the depths of Mars' tremors, we unlock a fascinating world that challenges our preconceived notions unlocking a deeper understanding of our celestial neighbour.

By North Farnborough Infant School

This half term we have enjoyed exploring different animal habitats around the school. We started by looking in the school's nature garden to see what minibeasts we could find. We looked under logs and found some worms and woodlice. In the pond we found pond skaters and dragonflies. We then had a think about animals needing food, water, shelter and air in order to survive. We created a home for the animal that would provide for all of its survival needs.

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As part of Year 2's understanding of how humans stay healthy, we investigated what drinks are healthy for our teeth. We used hard boiled eggs, with the shell representing the enamel on our teeth, and put them into 4 different containers with different drinks - water, orange juice, blackcurrant squash and coca cola. We predicted which drink we think would be the healthiest and unhealthiest. A few days later we opened the containers and observed what had happened. The water egg had stayed the same, but all of the other eggs had changed in some way. We then wrote up what we found and explained why this happened.

Navigation and time keeping at sea

Keeping track of position and time at sea wasn't always as easy as it is with the technological advancements we have now. In the 17th and 18th century the start of the discoveries for longitude began when ships were continually crashing due to the lack of navigation equipment that they had. Many skilled astronomers, mathematicians and physicists worked to find a solution and they eventually managed to find a solution to navigation using the alignment of planets and stars. Using a quadrant (quarter circle) they could measure the angles and distances between stars from specific points to align themselves and find their directions. However direction wasn't the only problem they had at sea they also needed to keep track of time and the clocks back then worked on a pendulum system and with the waves and motion of the boat the pendulum was no longer consistent leaving all the times to be incorrect. John Harrison was one of many who attempted to solve this problem; however he was the most successful. He managed to build a mechanism that would counter the motion of the ship by using a double pendulum and springs. By his fourth prototype he managed to make a clock that resembles a large version of the watch we know today. This discovery led him to receive a reward of nearing £20,000 which is the equivalent of around £1,000,000 today.

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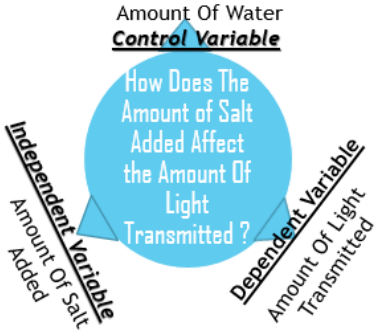
OUR QUESTION

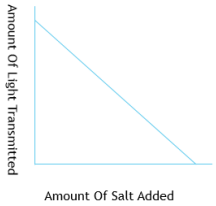
Light Source
Container
Amount Of Water
Control Variable



DATA TABLE

Amount Of Salt Added (Teaspoons)	Amount Of Light Transmitted (Lux)
0 Teaspoons	14760 Lux
1 Teaspoon	6327 Lux
2 Teaspoons	2756 Lux
3 Teaspoons	711 Lux
4 Teaspoons	337 Lux

OUR PREDICTION



We Predicted That The Higher The Amount Of Salt Added , The Lower The Amount Of Light

CONCLUSION

The Findings Of Our Enquiry Have Lead Us To The Conclusion That The Higher The Amount Of Salt Added , The Lower The Amount Of Light Transmitted . This Is Because Salt dissolved in water is Translucent And Only Allows A Partial Amount Of Light To Pass Through .

By Liam, Riley, Ethan and Luke year 6

Canada Wildfires!

As you may have heard, there have been extortionate wildfires in Canada. Thousands of residents are likely to be evacuated. Unfortunately, now the smoke from these fires is spreading hundreds of miles into the United States. In New York, an orange haze has blanked the city and residents has been advised to wear masks if they cant stay indoors. Even the Statue of Liberty is hidden from view. More than 600 Us firefighters have gone to Canada to help tackle the blazes. Experts believe that a particular warm and dry spring has contributed to the scale of these wildfires and if global warming continues increasing events of similar weather and wildfires will likely rise.
By Summer 5y SFJS

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Oscar's adventures in science

A PARALYZED MAN WALKS

Scientists use 2 implants,1 in their brain,1 in their spinal cords. This helps them walk. After 1 year they could stand, walk and climb stairs!
But with crutches now he can walk with it off!

Christian SFJS

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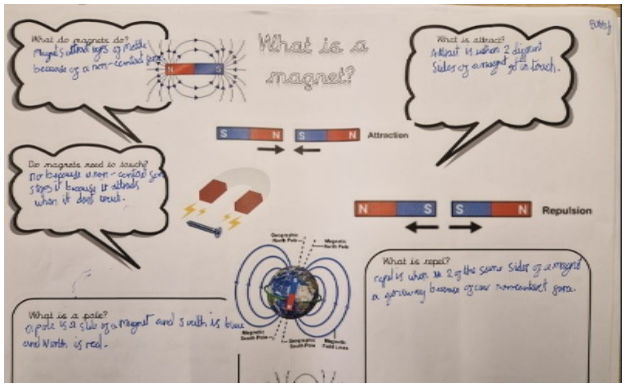
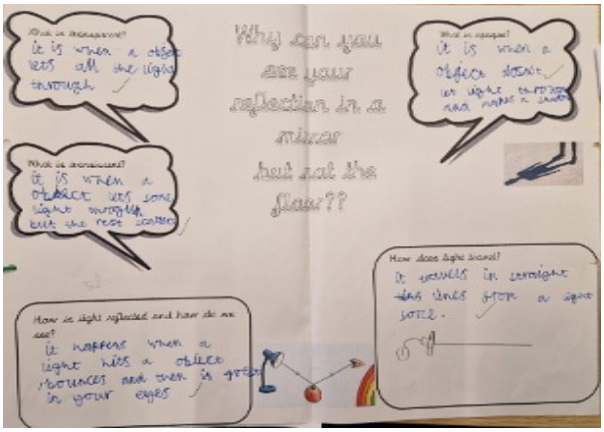
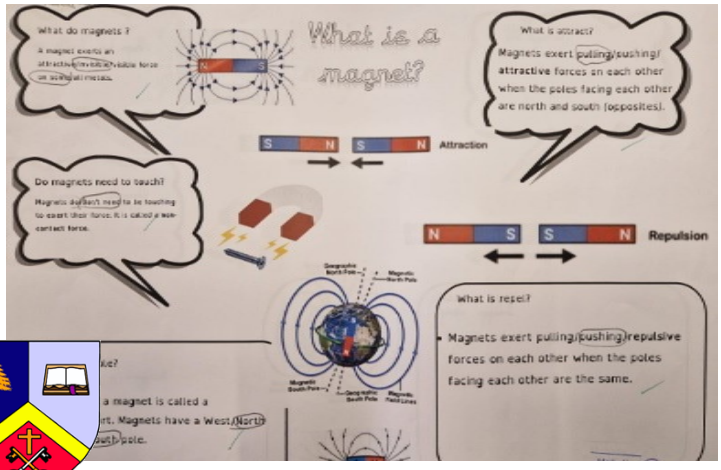
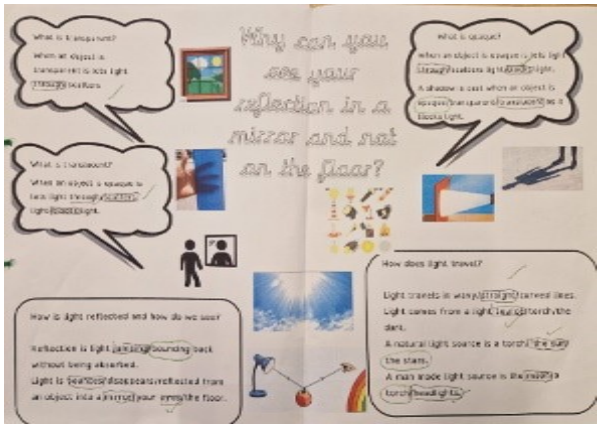
Marie Curie is one of the most famous women in history. After university in Paris [where she met her husband Pierre] Marie became interested in X-rays. So she decided to investigate uranium, the element used in the tool. Unfortunately, the Curies didn't know that what they were working with was extremely dangerous. Marie and Pierre's work is incredible as they were the inspiration for the treatment called radiotherapy, which is a treatment used to help cancer patients. In 1911, Marie became the first woman ever to win two Nobel prizes in two different subjects. In 1934, Marie sadly died of radiation poisoning at only 67. Although Marie died a long time ago, her discoveries are still used all over the world today.

Year 3 have been learning about light and magnets. By Florence, Bobby, Oscar and Elizabeth









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As part of our Space unit, we got to go to Winchester Science Centre and it was really fun. It was full of lots of things to do with space. We got to do lots and lots of practical tasks like control a cyborg hand, try on a space suit and made lots of funny noises of voices. We were able to learn lots more about the different planes. Did you know Jupiter is the heaviest planet!

By Anastasia and Marcus

Talavera Junior School

After excitedly watching Potassium ignite when added to water, the Year 6s were set the challenge of building a boat to withstand as much mass as possible!! In their groups they had to design and build their vessel, but they were only allowed to use: - 1 piece of paper - 6 paperclips - 1 metre of Sellotape - 8 straws - Scissors The students did a great job and at the end they all got to see whose boat managed to hold the most mass without sinking. Our winning team made a boat that held over 180 grams! A good day was had by all and we look forward to seeing our new Year 7 cohort in September.

WAVELL

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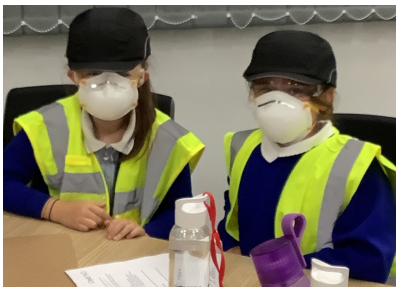
Tower Hill Primary School visit QinetiQ for International Women in Engineering Day

We were lucky to be invited by QinetiQ to take part in their fantastic event this year. Over the day, we were shown around by two fantastic hosts who could answer questions on what it was like being a woman in STEM. We experienced VR and we entered the world of Jurassic Park. We also explored strategic games and how the Army use this as training. The theme this year was Safety in Science and they had lots of different safety equipment that they used to keep themselves safe. We had great fun learning how to fly planes and helicopters. Using a green screen gazebo and VR, we were also able to travel into a field and see how the technology could help you. We even got a real science experiment testing the strength of different materials with an impact tester just like the ones they use for testing materials for tanks.

12 Year 5 girls from Tower Hill



INTERNATIONAL WOMEN In ENGINEERING DAY
23 June 2023

QINETIQ

FRIENDSHIP AND LEARNING
TOWER HILL PRIMARY SCHOOL

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By Reception at St Mark's C.E. Primary School

Reception have continued to explore different Physics topics in our 'Scientific Investigations' area. Their favourites were based on the books 'Mr Archimedes' Bath' and 'The Wheels on the Tuk Tuk'. They explored floating and sinking while trying to put objects in Mr Archimedes' bath without spilling any water. The plastic animals and gems caused the bath to overflow and spill on the floor. However the cotton wool did not cause any water to spill as the cotton wool floated then it absorbed the water before sinking. They were excited to discover that their hands could also cause the water to spill out of the bath.

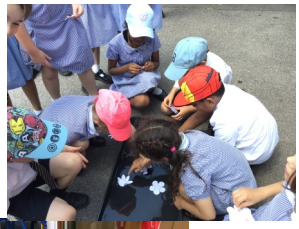
After watching the story about a tuk tuk, they experimented with different sized wheels to see which wheels would make the tuk tuk roll the furthest. The children came to a range of conclusions, one child said "the smaller wheels roll the furthest" while another said "the bigger wheels the faster it goes so it would go further". One group of children decided to experiment further by creating a larger ramp and using more cars.

Science Ambassador Club

By the St Mark's Science Ambassadors

We have started running experiments for the whole school at lunchtime. One week we practice the experiment and the next week we help the other children to have a go at it. So far we have launched bottle rockets, made magic opening flowers and grown rainbows. Oscar the bear has been coming along to have a go too!







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This term we have been learning about light, so we decided to do some research.

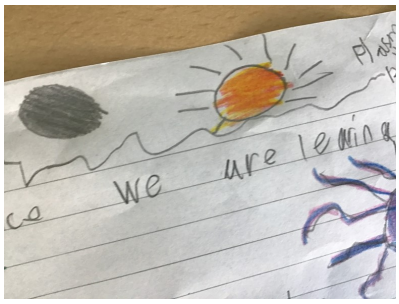
Light is energy radiating through space. This includes everything we see from the blazing sunlight to the tiny glow of a firefly. Light is made up of seven colours that merge together to create white light. The seven colours of a rainbow can be seen when the sun is shining and it rain, we see a rainbow in the sky. Light brings life and colour to the things around us. Nothing travels faster than light which is why it can be used to send messages. Telephone calls can be sent down fibre-optic cables

Black holes - Black holes are formed when a star reaches its final stage, implodes, splits into pieces and sucks everything into it. Not even light can escape a black hole.

Water lens – water droplets bend light rays, they act like a lens adding more detail.

Laser guided telescope – This is one of the four telescopes that makes up the Very Large Telescope (VLT). It uses laser beams to help it aim at distant stars and planet.

Jesse and Elliot year 3



Next year....

Look out for Year 5 Star Gazing evening. Science newsletters, Oscar's adventures, capital bags, science ambassadors and KS1 stargazing!

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