



Walsall Academy STEM Magazine

In the Nineteenth edition of the Science, Technology, Engineering and Mathematics (STEM) newsletter, we will look at the interesting and exciting activities that students have been involved in.

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KS3 Science Fair

Walsall Academy students once again attended the Annual Science Fair held at Thomas Telford UTC. Last year students won first place in the competition so Year 7 and 8 had worked hard to retain their trophy!

Students had created a range of projects including the inner brain, Covid-19 and evolution. The students had to present their ideas to visitors and answer questions about their project.



The students who attended were excellent ambassadors for the school and showed how much hard work had gone into their ideas.

Well done to the two winning teams who took home first and second place. They had explored projects looking at Mag-Lev trains and the inner brain which really impressed the judges!



Maths National Space Centre

Year 12 and 13 Mathematics students attended the National Space Centre to look at the application of Mathematics in real life. Whilst there, we attended a Maths masterclass, looking at the effects of different forces acting on planets when in orbit. They conducted an experiment to look at how the mass and angular velocity of planets affects the force needed to keep it in orbit, known as centripetal force.

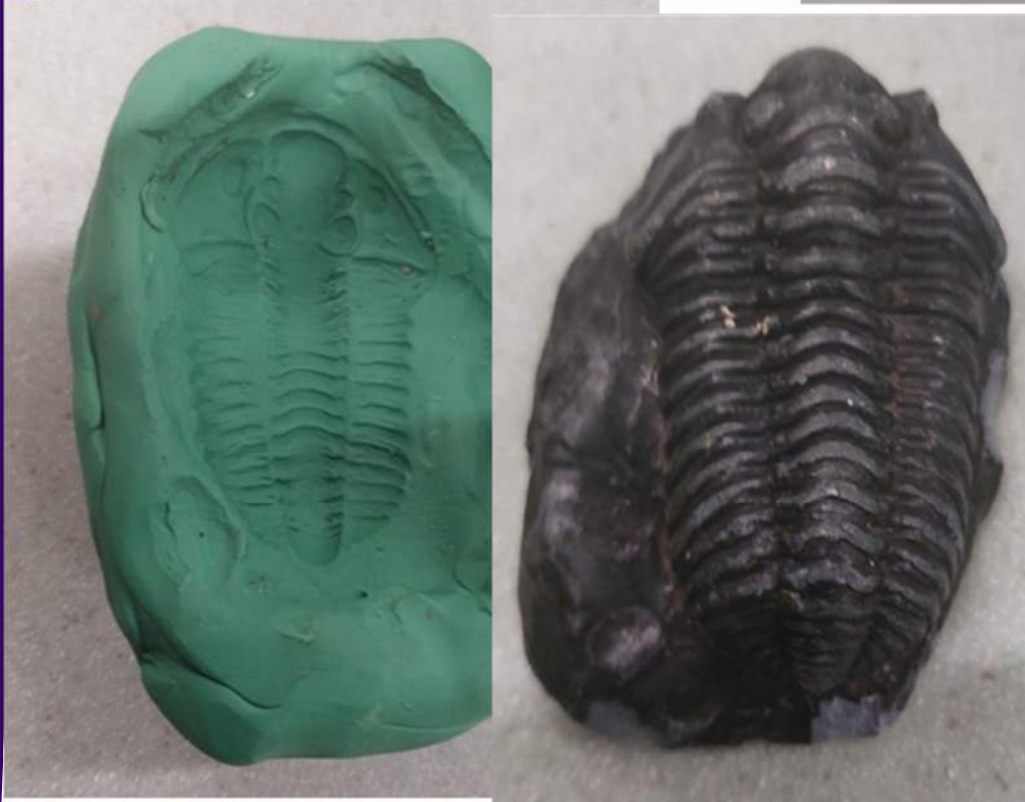
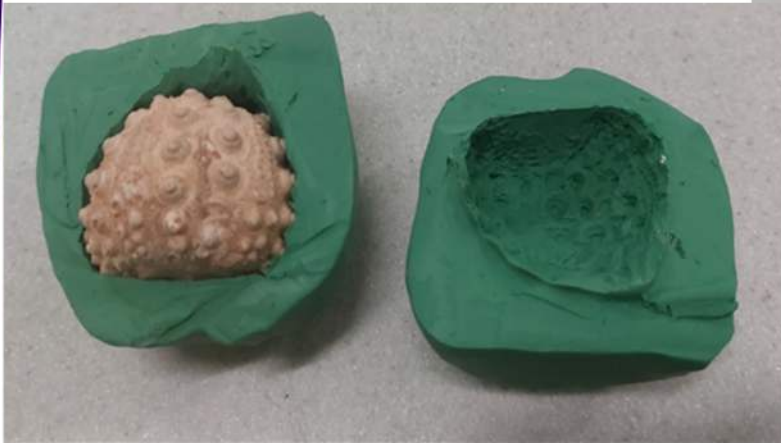


Students then sat in on an award winning show in the Sir Patrick Moore Planetarium where students learnt about life as an astronaut. Students then also had a chance to look around the many galleries inside the Space Centre. These included driving a mars rover, climbing the 42m high rocket tower to see the Blue Streak & Thor Able spacecrafts up close as well as seeing some real moon rock up close. Students also were able to hold different pieces of meteorites such as stony-irons and pallasite.



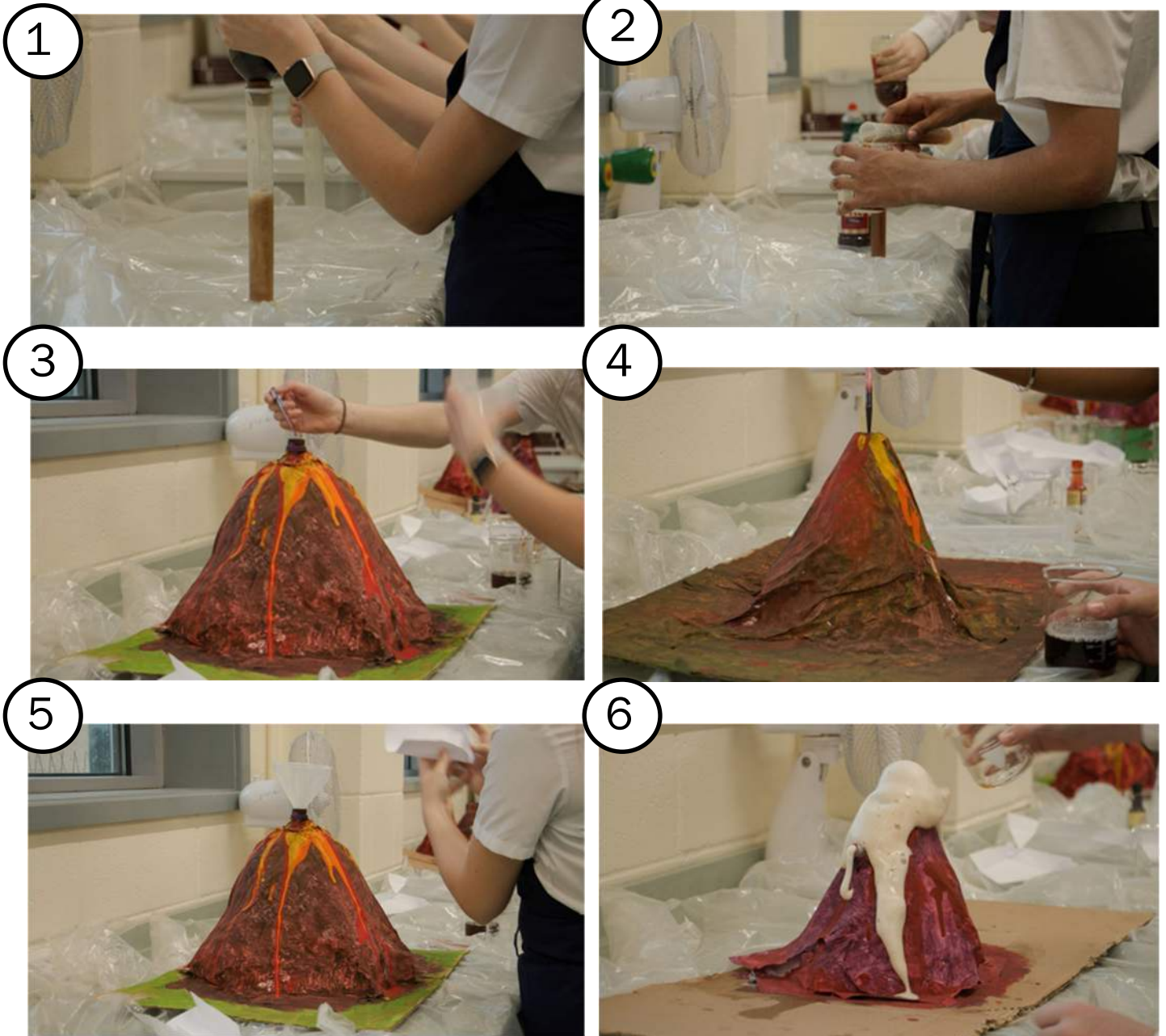
Science Club: Crest awards

In Science Club, the students have been introduced to CREST Awards. Students must research and plan their own projects and complete a workbook which will be submitted as evidence towards their Bronze Award.



We have various projects including; designing and making a rollercoaster with different speeds, fossilisation and rabies research, making the perfect fizzy drinks and testing different types of plastics for road use.

KS3 Volcanoes!



Students in Year 9 have been learning about the structure of the Earth in their new topic. As part of this topic they have been studying the movement of tectonic plates and what occurs when these plates come together. Students have discovered how Earthquakes, Tsunami's and Volcanoes are formed and as an enrichment activity linked to volcanoes, students have been designing and constructing their own erupting volcano using baking powder and vinegar.

Medical Mavericks : Year 9 visit

Year 9 students visited Thomas Telford School in June to take part in activities ran by the Medical Mavericks, Staffordshire University and the University of Birmingham.

Students had the opportunity to practice medical techniques such as taking blood pressure, phlebotomy (taking blood samples), scanning bones to check for growth and damage and carrying out keyhole surgery.

Students then looked at the details of fingerprints and the different types of fingerprints that people can have, such as loops and whorls.



Students also learned about how fingerprints can be collected at crime scenes and used to identify suspects in crimes, because they are unique to individuals. Students learned about aspects of forensic investigation and different types of evidence that can be collected, as well as how to ensure the evidence is collected correctly so that it can stand up in a court of law.

Students finished the day by having an introduction to the engineering process in chemical engineering by looking at how fizzy water is made and how some fizzy drinks are far more acidic than others.

STEM Inter Academy Competition



Walsall Academy hosted the second consecutive Inter-Academy STEM Competition since Covid and a team of Year 9 students represented the Academy brilliantly taking on a series of tasks covering all aspects of STEM.

This years competition focused on flood defences and how to protect buildings from water damage.

Students had to devise a system that would allow water to be pumped out of a paddling pool 30 centimetres up to another platform to simulate removing water quickly from a flooded area. With the increase in climate change and global warming this is a problem that will need attention in many coastal countries.



Students from all four Academies produced great work and all approached the problem with a different and unique idea to solve the issue. Ideas ranged from pumps to Archimedes screws and all managed to pump some water effectively.

Walsall Academy students did incredibly well and designed a hydraulic pump using syringes that had to be used simultaneously to achieve an effective water pump. The students went on to win the competition as they pumped the most water in the amount of time given. Well done Year 9!

