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WELCOME TO STEM @ SPRINGWOOD

Welcome to the first edition of the Springwood STEM Newsletter. This newsletter aims to share with you the amazing STEM work that students at Springwood High School are doing.

We wish to share with you the enjoyment and enthusiasm that students here at Springwood have for STEM.

We aim to educate you on different STEM roles available and what those roles involve. We will share details of events available to you that will broaden your knowledge of STEM and encourage you to look at STEM as a possible option for your future.

STEM fosters ingenuity and creativity, builds resilience, encourages experimentation, teamwork, knowledge and application. It teaches problem solving and encourages adaptation. All great reasons to study STEM.



DISCOVERY CREST AWARD 2020-2021

During 2020–2021, KS3 students joined the STEM club at Springwood High School.

These students completed a variety of activities online and in school, including sessions on the brain, sight, lava, space, pressure, crystals, DNA extraction, asteroids and diffusion.

The students then worked towards a Discovery CREST Award. The aim of this award is to develop students' communication, problem solving and teamwork skills by addressing a real-world challenge. Students worked independently to investigate a STEM challenge, with minimal adult intervention.

In order to complete the Discovery Award, students had to present their work to an audience. Students also created a poster linked to the session they enjoyed the most and explained it to their audience. This involved completing extra research along with the development of at home experiments.

In total, 30 students successfully complete the Discovery Award.



Bronze CREST Award 2021

Towards the end of the Summer term 2021, current Year 9 students took part in the Bronze CREST Award. They completed projects on renewable resources and the five areas covered were:

- The design of a solar village exploring building design, future proofing and the use of solar panels.
- The design of wind turbines built using recycled materials.
- The construction of cob model houses, a renewable building material.
- The design and construction of solar ovens to cook food.
- The creation and testing of vehicles powered by wind.

At the end of the project work students were able to present their work to their peers and staff; showing off what they had made and demonstrating what they had learnt. This project enabled students to work in a team, developing their communication and presentation skills.

Below are some pictures of students presenting their work.



STEM visit to Norwich



Dippy and Gaia

STEM CLUB REWARD TRIP 2021

Representatives of the STEM club were rewarded for completing their Discovery CREST Award and participating in STEM club remotely during lockdown with a visit to Dippy in Norwich Cathedral.

During the visit, they were treated to a talk about Dippy and able to see a replica head up close.

They also met Dr. Kelly Edmunds, a scientist from the UEA who talked about the history and timeline of life on Earth. The students had the opportunity to look at the fossils and even take some home.

Students were also treated to seeing Gaia, a 6 metre scale version of the Earth installed in St Peter Mancroft Church and were able to hear about the impact of climate change and how faith and science can overlap.



WIND TURBINE PROJECT 2021

A group of nine Year 9 students took on the challenge this September of building a fully working wind turbine. The students had to plane the blades to the correct shape to enable the wind to move over the turbine and rotate the blades. They had to make sure the blades were balanced on the middle plate to ensure the turbine rotated smoothly, in order to maximise the electricity generated. They also had to build the circuit which involved using some extremely strong magnets.

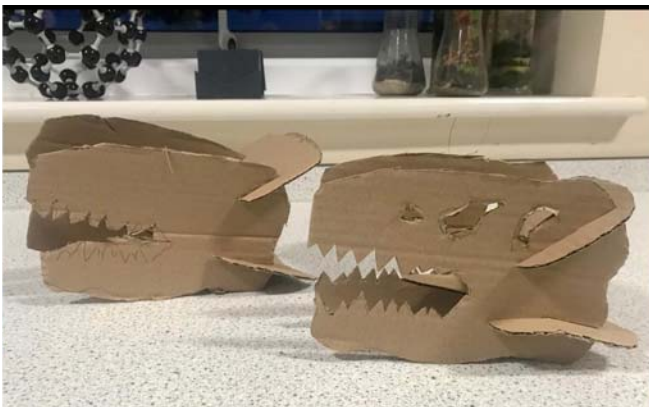
The students faced many challenges during the build, but were delighted when the blades rotated and generated enough electricity to charge a mobile phone.



KS3 STEM CLUB 2021

On November 10th 2021, 30 students attended the KS3 STEM club to listen to a specially recorded lecture for Springwood STEM club from Dr. Kelly Edmunds from the UEA. The lecture focused on how life on Earth developed and the recording has been shared with the students to allow them to re-watch it with family and friends.

The students also engineered dinosaur heads. They were able to look at how to modify their design from the instructions provided to develop their own skull creation. The KS3 STEM club is supported by some of Springwood's Sixth form students who are keen to develop younger students' interest in STEM subjects. Later this year, they will design and deliver a project to the group.



SILVER CREST AWARD 2021-2022



Due to the great success and enjoyment in the completion of the Bronze CREST Award, November 11th 2021 saw the launch of the Silver CREST Award. An astounding 50 students have now signed up to complete the Silver Award.

Students who participate in the Silver CREST Award tend to achieve higher grades in their studies and are more likely to study STEM subjects at A-Level.

The first session was an opportunity to brainstorm ideas for group and individual projects. Some ideas for future projects include brain shrinkage, combustion engines, the science of trees, the science of wormholes, bees and the weather.

We look forward to seeing how these projects develop over the coming months. Good luck, everyone.

FUTURE EVENTS TO LOOK FORWARD TO

This half term, students completing the Leader's Award are working on a project called 'if you were an engineer, what would you do?'

Students have to identify a problem, develop a solution and write a letter to an engineer persuading them to build it. Some ideas might even be selected by universities to be built!

On the 24th November, students will be remotely interviewing an engineer called Naziyah Mahmood who is an Earth intelligence space engineer. This will follow her talk entitled *Lightsabers and rocket science*.



On November 25th, 15 Year 10 students will be attending the Women Of The Future 2021 Conference at the John Innes Centre. This conference is designed to inspire the next generation of female STEM professionals.

We are also very excited by our plans to host our first **Springwood Christmas lecture** on Monday 13th December 2021 - further details to follow!