

April Diary Entry from Ryders Hayes STEM Project (Rolls-Royce)

Rolls-Royce
Schools Prize
SCIENCE & TECHNOLOGY
Finalist 2020-2021



At Ryders Hayes Academy, our project is a whole school investigation into the different ways that STEM technology is currently used in industry and considers how it will help us in our everyday lives in the future. Using STEM software and hardware kits (SAM Labs), pupils will create innovative systems and build their code, to provide sustainable solutions to problems within a real-world context.

Claire (Y5 Teacher, Science/STEM Lead and Project Leader) This month Year 5 have finished their spring term by creating a solar powered fan with the SAM Labs equipment. The pupils have worked extremely hard to understand the different elements of the hardware and how to code the equipment so that it would turn on when there was light - they were able to debug their codes to ensure that if there was no light they would turn off.

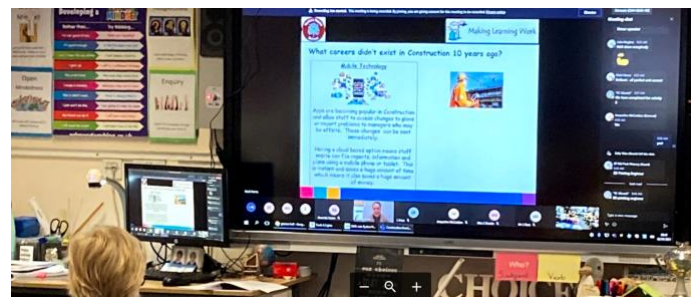


The lessons learned from Year 5s carrying out the project will be reflected on, and as project leader I will be able to support other year groups as they plan and deliver the SAM Labs lessons. Year 6 have also had a positive experience and I have spoken with the Year 6 Teachers to incorporate their experiences into our planning too.

Year 5 have also had their careers event as part of the Careers Hub, which was based around technologies of the construction sector. Children explored technologies from 10 years ago, as well as thinking about what technology will be like in the future. We linked this to our SAM Labs learning

around solar power and the programming of robots in the future. We also listened to and asked questions to women who are working in the construction industry and heard what a positive experience they have had.

I have ordered 4x 3D pens for use in Year 6 as part of their STEM project. I will discuss with Year 6 teachers how they can incorporate this into their curriculum.



So far, we have spent £1,500 on SAM Labs equipment, £600 on coaches, and £183.96 on 3D printer pens = £2,283.96

Bridie (Y6 Teacher and Computing Lead) Year 6 have thoroughly enjoyed their STEM lessons this half term using SAM Labs equipment. I have been impressed with their knowledge of how to set up the hardware and software systems, every week they are developing their understanding of programming and how this applies to real world applications. The children have been asking to have extra SAM Labs sessions and we are looking forward to the application of 3D pens into the curriculum.

Kath (Y4 Teacher and Family Learning Lead) In Science in Year 4, we have been creating our own chocolate bars. We looked at the design and the different technologies used today to design chocolate from the way that Cadbury started over 100 years ago, and then linked this to SAM Labs as many chocolate factories now use robots which need programming e.g. keeping the temperature regulated using sensors etc. We have looked at packaging and how important that is to develop people's thinking and how they might buy it. We designed our packaging and used some computer programs to look at designing a packet. We then set a family learning event at home to create a chocolate bar, due to not being able to do this in school at the moment. We also reflected on how well our chocolate was produced and what people thought of the taste and what we could add or take away next time we created it. We have also looked at our careers skills ladder to see what skills we have used and thought about future jobs to help us when we're deciding what job we would like in the future and what skills we will need.

Amy (Y3 Teacher and DT Lead) In Year 3, we have been researching, designing and evaluating pneumatic dragons. The children used their problem solving skills to work out how to attach a plastic pipe to a balloon using either an elastic band, glue stick,



cellotape or their fingers. All children worked hard to discover that the elastic band was the best method and created some wonderful dragons that open their mouths when attached to a balloon pump. These have been proudly displayed outside of the Year 3 classrooms.

Many other projects have taken part across the school as part of our half term of DT learning. For example, Year 5 used resources and tools to create moving toys. In the last few days, we received communication about our participation in the Fluor Paper Tower Competition. We are very proud of all of our participating pupils but especially the Brothers' Grimm team who created the tallest tower in the under 10-years-old category. We plan to celebrate this with them over the next week.

Laura (Chair of FoRH) Due to the lockdown restrictions I have been unable to offer much support this month, however we are now looking to support a virtual after school club. I will be having a meeting with the members of friends of ryders Hayes to see how we can support this and encourage parental help and support.

Angela Moore (Chair of Governors) The children have clearly been gaining lots of STEM skills as well as having opportunities to link their learning in the classroom with real-life job roles, as well as think about future career opportunities. It's great to see the children enjoy their learning as well as build on the essential skills needed such as teamwork and problem-solving.

Link to updates on our project: <https://www.ryders-hayes.co.uk/school/our-community/ryders-hayes-stem-project>