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

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

@ Ryders Hayes STEM

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 we have discussed ways in which we can offer virtual coding lessons and have delivered a SAM Labs lesson using nearpod (a piece of interactive software for remote learning). Year 5 have completed a lesson on using automated vehicles - we looked at the science behind the software then pupils coded their own vehicles. The pupils in class were able to use the hardware to see if their system worked; they had to control the light sensor to make the car change direction.

As project leader, I have reflected on the Year 5 lesson above and recognise that as pupils have not used the software and hardware before, then we will need to look at some of the lessons from previous years to allow pupils to access learning and build their skills up, rather than start at an advanced level. This has stemmed from pupils being required to debug complex systems which their coding skills might not yet have prepared them for. By visiting earlier curriculum levels, it will allow pupils to build their coding skills up and once we have integrated the lessons across each of the year groups, they will be competent at the correct curriculum level. I will work with our Computing Lead on this so we can ensure that pupils make good progress.

All teaching staff have now completed the fourth and final CPD session, all about the lessons available for teaching SAM Labs both in school by looking at classroom management around delivering coding lessons and sharing good practice. We also had a look at the virtual lessons, which has enabled us to see which ones are suitable for home learning.

On Monday 22nd February, we have a remote visitor to our assembly, to give a career talk about what technology they use in work, what has changed and what they think it will be like in the future. Our volunteer has his own company managing environmental concerns such as measuring noise and light pollution. I have worked with our Chair of Friends of Ryders Hayes (FoRH) to set this assembly up and it will be delivered through Google Classroom to all of Key Stage 2.

So far, we have spent £1,500 on SAM Labs equipment and £600 on coaches = £2,100.

Bridie (Y6 Teacher and Computing Lead)
This month we have been reviewing the Computing curriculum to ensure a full coverage. I have been adding SAMLabs links through the Year 5 and 6 curriculum and I am looking at integrating

this further down. The children are looking at more project-based learning to understand how this links to careers learning.

Kath (Y4 Teacher and Family Learning Lead)

This month Year 4 have: designed sculptures out of recycled materials to enhance the environment; programmed a toy in Computing; had a careers day looking at what jobs there could be for them in the sports sector and the type of technology they may use there; and in STEM lessons we have been looking at sounds and where we can hear sounds, what makes them the frequency and pitch of sound, listening to sounds outside, drawing sound maps, made instruments using recycled materials and got them to make different pitches. Once children return to school all of this learning will be used as background knowledge and will be built on to support their learning through their SAM Labs lessons.

Emily (Y1 Teacher and D&T Lead) - on secondment so Amy Wall (Y3 Teacher) is looking after DT.
To promote STEM across the school, Claire and I organised and advertised our participation in the 2021 Fluor Engineering Challenge. This involves children, of all year groups, working in groups of 1-4 to build the tallest paper tower which supports a full can of food for 60 seconds. The challenge gives children the opportunity to enhance their design and problem-solving skills to create a strong tower and solve any issues that they may encounter in the process. Overall, the project encourages a love and enjoyment of STEM, engaging with families and we look forward to receiving the entries from the children over the coming weeks.

Laura (Chair of FoRH)
I have worked with our parent volunteer and Claire to organise him talking to the children in an assembly about his role at work. We are really looking forward to hearing all about it.

Angela Moore (Chair of Governors)
It has been great to hear everything that is happening across the school despite our lockdown status. All the teachers are working hard to ensure pupils get the most out of their education.

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