



December Diary Entry

This month we were delighted to welcome our mentor Neil Chattle to the school – we had to rearrange the dates as it has been a turbulent few weeks due to an outbreak of the Norovirus around schools in our area meaning a few days of closure for Parkside. We have suffered slightly with a small number of students being absent from the extra-curricular club but for the most part, school is back to normal and we are back on track!

Lorna Dee Evans (Team Leader)

Following my meeting with Chris Harrison at CREATE Education, this month we have received the fantastic news that we will be able to have one of their Ultimaker 2+ 3D printers on loan. CREATE normally only lend their printers out for four weeks at a time but we will be having ours from 6th January until 13th February 2020. The extra time we will have the 3D printer for will massively beneficial for us, as this will be when we are coming to the end of the competition and we will have higher demand on the hardware to prepare everything for the final competition judging. Following on from this, Chris gave me a contact at a company called Filamentive – the leading 3D printer filament brand in the UK. Filamentive will be sending out an “Education Bundle” of PLA filament across – meaning we will have plenty of materials to work with. I have been promised a variety of different finishes of material – meaning that our students can be experimental with their design work and try out different materials.

Sarah Myers, the Regional Network Lead from STEM, also contacted me – she was interested in our project and offered to support us in any way she can. The meeting gave me some fantastic ideas for how we can push the project even further following the “Skills for the Future” deadline in February. Sarah suggested we showcase the project at regional Big Bang Fair events. These are towards the back end of the academic year – meaning that we would be able to take our students and their project ideas to a different showcase, giving them a further opportunity for development providing further outreach from the Rolls-Royce project. Sarah gave me a number of other leads including working with the STEM Ambassadors, Airbus Defence and Space, and the TeenTech events – all of these are something I will be researching further in the New Year.

This month, I have also managed to meet with Matt Barratt – one of our Deputy Head teachers in school. Matt is in charge of the school website – and we finally have a “Rolls-Royce STEM” page linked from our homepage. This is a work in progress – and over the next few weeks, I will be provided with an access login so I can update the school website myself and facilitate further outreach and communication with parents.

Helen Dunn

Throughout December, I have continued to work weekly with the 3D printing club as they start their project work. I have been working closely with the students who selected my brief and others. They have been really engaged with their research work; especially looking at the work of others as they investigate methods of solving their chosen brief. All students have been completing work in their project books, and I have been impressed with the independence our students have demonstrated and their ability to analyse existing products. They have been able to discuss both verbally and through annotations the pros and cons of a number of products in their chosen area of design. These are transferable skills not only for Design and Technology lessons but also other subjects and displays great analytical skills; which is a pleasure to see. Literacy is a big focus for us throughout the whole school now – and these skills will be useful for students across the board.

Students are now at the early design stages and it is fascinating listening to their verbal descriptions of their concepts but some have struggled to get this onto paper. I have worked closely with some of the younger members of the club to look at basic drawing skills (including 2D sketching and 3D in the form of isometric) which for some is a new skill and has enabled them to begin to draw ideas that are more realistic and will lead to development and CAD work on TinkerCAD. Introducing the students to this method of drawing is also useful for their Design and Technology lessons later in school. Getting some of the younger students excited about the subject of Design and Technology at the early stages of their high school education may prompt them into taking the subject at GCSE, and this would be fantastic to drive numbers higher. The skills the students are learning and demonstrating has great longevity and will feedback into their lessons as they are required as part of the iterative design process.

Andrew Mangham

Now the students are well on with the designing part of the competition, it is great to hear the pupils discussing the project in detail and fantastic to see how they are responding to the challenge of making their project eco-friendly by reusing the bottles. Some of the best ideas have come as spin-off projects such as 3D printing components to make a potato head, which was very encouraging since no staff had mentioned this strand.

The F1 cars are just about drawn in Fusion 360 now so we should be able to start 3D printing a car as well as routing it. It will be interesting to compare the results, especially from an aerodynamic point of view given that the 3D printed one will be ribbed – meaning that we may see some changes between the other machined methods. I hope that we can get this complete for the competition in January. I have been particularly encouraged by some of the design work by an SEN student who has chosen my brief. His design work on TinkerCAD is exceptional and he can discuss his ideas with passion and interest. This, coming from this particular student, is remarkable as he usually is incredibly shy. He is able to transfer his drawings straight from the page to the screen in an accurate and precise manner. I have approached this student about choosing Engineering as one of his options at GCSE, and it would appear to be a path he is interested in taking - due to the “Skills for the Future” project.

Sarah Trowers

This month I have been working one-to-one with a number of the students who have chosen my design brief. There are some inventive and innovative ideas that are starting to come out of our discussions. One student is looking at making a product that would be helpful when boiling eggs, some students are working on “kitchen aids” for the elderly – looking at adapting existing products to make them easier to hold or work with. This ability to see “problems” from the perspective of others is fantastic to see developing for some of our Key Stage 3 learners. It is the type of thinking we encourage at GCSE level – and some of the students are tackling it so well already that we are beginning to see a real surge of excitement for “what the GCSE brings”. It has been really encouraging to see students coming to find members of staff within the department at break times and lunchtimes to discuss their project brief because there is beginning to be a buzz about the whole project. Students are wanting to share their ideas and this boost in their own confidences is fabulous.

Following the meeting Lorna had with Sarah Myers, we have also been starting to conduct some research into local food manufacturers that are using 3D printing to make their produce. This was something that particularly captivated the students when we first showed them what 3D printing could do, and therefore something we wanted to tap into. We now have a few leads that we will be following up with in the New Year, as being able to take the students to see food 3D printing in industry would be phenomenal. This would be an example of how 3D printing is being used in industry – but also something I would love to do personally as it is something so revolutionary in my own area of expertise.

Sarah Osgerby

This month I have unblocked one of the 3D printing pens which was clogged up following the Y6 Open Evening – this will be great for the students as it means they will be able to complete modelling before sending something to print from the 3D printers. I have also worked with our Head of Department, Gillian Stone how to design using TinkerCAD. She is one of the teachers now delivering this to Year 7 students so I took the opportunity for a spot of internal CPD and this means that all teachers delivering the 3D Printing unit have a full understanding of the software being used at Key Stage 3 level. I have also shown an A-Level DT student how to design a spout for an Alessi-inspired kettle using TinkerCAD. I explained to them how having designed it, he needs to think about which orientation it should be printed in so that minimum support is needed. I will be printing this for his model as soon as I receive the file, and this will be put into his A Level coursework folder.

James Windle

Following on from last month's entry – I have been speaking with the students who have chosen my brief and realised that without the tour of the technician's preparation room, they do not understand the problems faced each day. I arranged the tour during one of the extra-curricular sessions and showed eight students around the area and together, we highlighted some of the issues. This was beneficial for the students because it meant that they could see first-hand, the challenges faced in storing scientific equipment. I have attended the extra-curricular club each week and spoken one-to-one with all students completing the Science brief. I have found that the students remain enthusiastic and have begun to create some beautiful portfolio work working at existing solutions and analysing these to see their advantages and disadvantages. This is prompting a high level of thinking from these students – as they are starting to find new ways to solve problems. I have been in touch with Dr Elaine Brown from the University of Bradford who has kindly arranged for us to visit in the New Year with a talk from Michael Hebda. Michael is completing his thesis in additive manufacturing (looking into technologies such as 3D printing) – this will be hugely informative for all in attendance and will raise the profiles of the skills the students are gaining for the future.

It was lovely to meet Neil for our team lunch when he came to visit Parkside. All of the students I have spoken to since this visit were buzzing with excitement at the workshops that he put on for us. In addition, on a personal note, two of my own children were involved in Neil's visit. My son has come away from the experience, with a clear vision of embarking on a career in Engineering – with his ultimate ambition to be working at Rolls-Royce. My daughter is taking part in the "Skills for the Future" competition and has asked for a 3D printing pen for Christmas as she is well and truly inspired by the entire process!

Mentor Update: Neil Chattle

As mentioned previously, this month we welcomed Neil Chattle to our school. Neil worked with a number of students at both Key Stage 3 and Key Stage 4. His timetable for the day was a busy one, but met with great enthusiasm and energy from our students. Neil held a session for 24 Year 8 and Year 9 students who have expressed an interest in a career in either design or engineering. These students listened intently as Neil talked about his career path, apprenticeships at Rolls-Royce and then had a go at building the Rolls-Royce aluminium engine models – which they discovered, was not as easy as it looked! Following the visit, I have spoken with a number of students from this session, three of which are now considering taking Design and Technology and/or Engineering for their GCSE options (to be done in February). There are also two students, having left the talk and gone home and done further research, are now intent on securing an apprenticeship at Rolls-Royce when they finish their GCSEs!

Neil also met, and worked with, the 24 students who are taking part in the "Skills for the Future" project. We used the HoloLens Augmented Reality headset to explore a virtual jet engine, built the Rolls-Royce aluminium engine models, all students took home the career brochures, paper engine kits, and STEM information packs. After lunch, the students then took the lead, and showed Neil their design work and discussed their ideas.

The final session of the day was Neil then meeting with 15 of our GCSE Engineering students. Neil once again discussed the various pathways that can be taken to have a career at Rolls-Royce and the students challenged themselves with the building of the aluminium engine models. At the end of the day, our Parkside School record for this was 14.12 seconds – achieved by a mix of Year 7 and Year 8 students – something that made our GCSE students feel extremely competitive!

It was great for Neil to meet with the whole project team, not only to discuss our ongoing project but also to give them a broader understanding of the event next year in London and what it would mean for us to come home with one of the prizes. When Neil and I met with Andy Taylor, our head teacher, we received great feedback from the day and it meant a lot to us for Neil to have had a good experience with our students. Andy has also asked for some further information for his son – who would be interested in an apprenticeship at Rolls-Royce as well!

Neil has also invited a number of the Parkside students to Derby for a school trip to the Heritage Centre – this is something I am looking at organising in the New Year and, having already mentioned this to our students, was met with an actual cheer! I think this is something that they would truly love to experience – and I am excited at the prospect of organising such an aspiring school trip.

Images

The top image shows some of our Year 8 and Year 9 students building the aluminium engine models. The bottom image shows our winning team! The Parkside School record for building the aluminium engine models is 14.12 seconds – these are our winners.



Expenses Update

Date	Purchases	Cost
13/12/2019	£100 deposit to CREATE Education	£100.00
Total expenditure:		£496.79
Remaining Balance		£5,503.21

Total awarded: £6,000