

## March Diary Entry

**Paras Gonzales - Project Lead**

### GIRL POWERED- GIRLS IN STEM DAY

This month the key focus was preparation and delivery of Girls in STEM Day. The day itself ran on 14<sup>th</sup> March during National Science week. The event was a popular and huge success. We had two women STEM ambassadors attend: one from Thameslink and the other from TAIT. Both engineers were leaders in their careers and engaged the students with their career paths and their involvement with the whole day's events. We also had our ex head girl support the day as she too is currently completing her Computing Engineering degree at King's College. We had 40 girls in KS3 attend the whole day session and all students involved had the opportunity to work in teams and complete set challenges. It was great to see how the students became more and more confident as the day went on and were willing to take risks, ask questions and push the boat out. We had girls make catapults, build robots, drive robots on Mars terrain (Mars Rover challenge), drive robots blindfolded whilst another was giving them instructions, race robots, program robots to complete a set task and finally play robot football.

Students completed a survey at the beginning and the end of the session.

#### Key accomplishments from the event:

- All students knew what STEM stood for
- All students found the challenges engaging
- All students wanted to see Robotics in the curriculum
- $\frac{3}{4}$  of students would consider a career in STEM and 64% would take up a GCSE in a STEM subject

#### Quotes from the students:

*'I like robotics more than I thought I did'*

*'I learnt I need to set a goal for myself to help myself succeed'*

*'I can do anything'*

*'I really enjoy STEM'*

*'I learnt that if I believe I can do something then I will be able to do it'*

*'That women/girls can be a part of STEM'*



*Girls building their Robots and playing Robot Football*

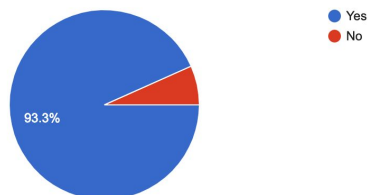


*The Girls taking the Girl Powered 'Pledge'*

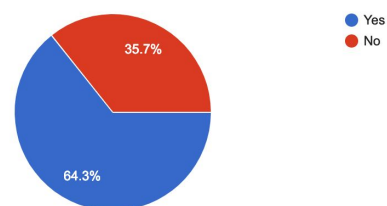
*Questions we are considering throughout this journey:*

*Where would it fit into our curriculum, How could we make it cross over into all areas of STEM? How will we be able to deliver this to all students and make it engaging. How would we begin the unit? What parts if any do students build? How do we make their learning concise, engaging and measurable?*

Would you be interested in taking Robotics up as an enrichment?



Would you consider taking a STEM subject as a GCSE?



### Impact:

The event was a huge success that students who were not part of the event asked if we would have another one that they can attend. We will definitely be holding the event again later on in the year.

*Initially we invited four local secondary schools to attend, however, although all schools were eager to participate, the timing of the event meant schools could not participate. The problems lie in issues around examination periods, A level and GCSE Mocks and the inability for staff to be released due to cover implications. The schools have requested for us to do the event during ½ term six when GCSE and Year 13s have left- this will be past the RRSP deadline but reflective of the ongoing partnership that we will be having with local schools.*

## DELIVERING ROBOTICS WITHIN THE CURRICULUM- Mikyla Warr

We have started to deliver the curriculum with two new cohorts of Year 8 students. We have had to consider how we will be able to deliver the content and practical applications with the limitations of having six robots to share amongst 56 students.

Making robotics relatable to students in the theory has engaged the students further and interesting conversations have come up where by students have really considered the use of robotics within society. Below are a series of slides from some of the theory lessons that have the students engaged in Embedding Intelligence. We have recently had Year 8 Parents' Consultation Evening and a number of parents have been asking about Robotics and how we will be using it in KS4, also if their child can take up D&T as an option choice. This reflects how students are going home and discussing their option choices and raising their interest in D&T as well as some of the reasons for wanting to pick it as an option.

<p><b>PREPARE FOR LEARNING</b></p> <p><b>What is a robot?</b></p> <p>Robots use different kinds of sensors to collect the information they need. Software processes this information so the robot can plan a response. The robot then acts to complete the task.</p>	<p>1. Cut the cardboard hand along the joint lines. You will be cutting each "finger" into three sections. Give these sections on the paper hand, making sure you can see the joint lines of the paper hand underneath (you may have to turn your cardboard fingers a little bit). Give the cardboard "grip" on the paper hand as well.</p>	<p><b>GROUP ROBOTICS</b></p> <p><b>DESIGN</b></p> <p><b>TEST</b></p> <p><b>REFLECT</b></p> <p><b>GROUP ROBOTICS DESIGN</b></p> <p>Groups should read through each scenario and pick the robot best suited for the scenario. After 10 minutes you will be asked to share your findings with the class. What two robots did you choose and why?</p>	<p><b>APPLY TO DEMONSTRATE</b></p> <p><b>Learning Outcomes</b></p> <p>Students will understand how robots assist with real life scenarios</p> <p>Think of a scenario in your everyday life. Design a robot that would be helpful in this scenario. Annotate your design to explain how the robot senses, plans and acts in order to complete a series of tasks.</p>
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For the next diary entry we will be able to discuss the logistics of running the practical applications of the unit with mixed ability students and how we will be able to best deliver it.

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