

Tech Product Design Qualifications

Resilient Independent Thinker Creator Real World Problem Solver

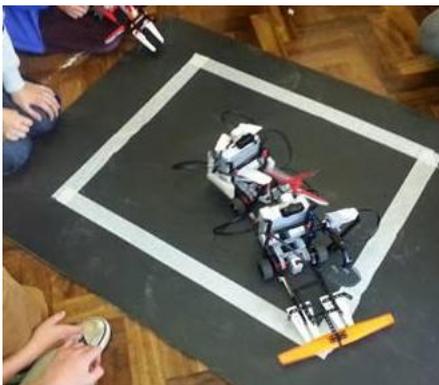
“Tech Product Designer” is an ambitious educational initiative which will enable students to become more than product designers but people confident in taking products to market. Students will learn through a series of inspiring projects which will build on each other. We believe that enthusiastic youngsters can start this qualification as young as 8 which could lead to students gaining A/S level qualifications at much earlier ages.



The curriculum is created from the Raspberry Pi Curriculum, Arduino Curriculum, AQA Project /EPQ Curriculum and commercial Product Management courses.

This qualification will be piloted through a Saturday School. However it is being designed to be shared with schools and Hackspaces. We hope to share the work through online learning resources, live broadcast tutorials and boxed hardware kits.

There will be five stages aimed at developing a student into tech product designers.

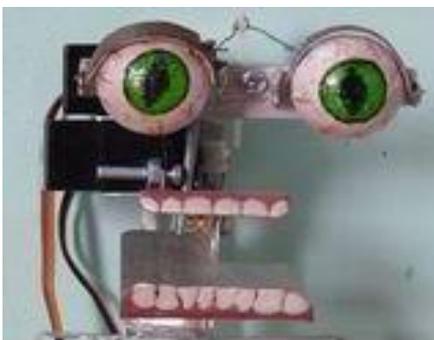


STAGE 1 - EXPLORER

The first stage will be a Scratch and Arduino curriculum which will teach the structure of coding and mechatronics. This is aimed at stretching students experience of block based code to real world applications. In this students will be able to make and control robotic systems through scratch. EV3 will be used to support the learning of mechatronics through activities such as robot wars.

The students will be able to design, build and control robotic systems

Hrs: 30	Projects: 5	KIT: Scratch, Arduino & EV3	Learning: Code & Mechatronics
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STAGE 2 – MAKER

Stage 2 will be based around Arduino. Students’ will create projects such as mechatronic puppets and ultimate web based spy cameras. The key learning will focus around being able to integrate electronics into physical product design. The code level will be at least at GCSE level.

The students will be able to design, build and control complex robotic systems with an understanding of electronics

Hrs: 30	Projects : 5	KIT: Arduino, Ardublockly and Processing	Learning: Code, Mechatronics, Electronics
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STAGE 3 CREATOR

In this stage the students will migrate onto Python and Raspberry Pi. Our special block based python teaching system will accelerate the learning. The products will be mechatronic and focused on connectivity (IOT). Products here could include a robotic butler connected to Google AI or interactive music production.

The students will be capable designers using :
Design -> Build -> Test-> Improve ->Evaluate

HRS: 30	Projects: 4	KIT: Raspberry Pi Python	Learning: Design, Code, Mechatronics, Electronics & Testing
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STAGE 4 DESIGNER

(Student led)

In this stage the students develop their own product completing the full cycle of Design ->Build->Test->Improve->Evaluate.

This will lead to the award of GCSE Project.

The students will be able to creatively form and realise a tech product.

Hrs: 30	Project : 1	KIT : Chosen	Learning: Design, planning, testing and evaluation
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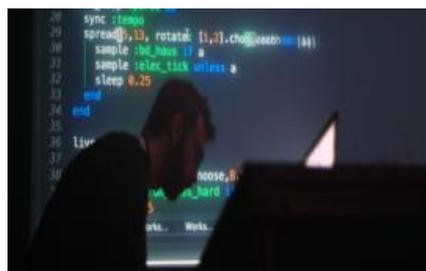
STAGE 5 PRODUCT DESIGNER

(Student led)

In this level we will be providing the student all the skills to become a full Tech Entrepreneur. The student will embark on an International project which must include people from at least one other country. They will learn market research, project management, testing, manufacturing costing, fundraising and product launch. Also there will be high level support for the technical skills involved in the project.

This will lead to the award of EPQ A/S Level.

The students will be able to create products and take them to market



Hrs: 60	Project: 1	Kit: Chosen	Learning: Project management, teamwork, costing, marketing, fundraising
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Partners



STROUD
MAKESPACE



The initiative is being run through the charity robotacademy.co.uk Charity Number : 1158556 and Company Number : 09031825