ENGINEERING materials for a GREENER planet

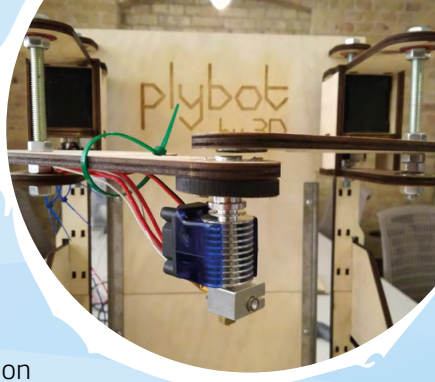
Creating environmentally conscious engineers of the future

Case study:
Josh Mitchell

The Big Bang Young Engineer of the Year 2018

I've been into engineering all my life. I started by reading online and visiting forums and YouTube to learn how to build all the things that I found cool.

Through trial and error, I made my first 3D printer at 13 and it was rubbish. I built a lot more throughout the next five years and perfected my skills, which enabled me to create PlyBot. I plan to launch it on Kickstarter and then study engineering at university in the US.



My biggest achievement to date was winning the Big Bang Young Engineer of the Year 2018. It gave me the opportunity to form the company that will produce PlyBot commercially.

The best thing about being an engineer is that anyone can revolutionise something from their garage or bedroom. I'm currently developing the engineering side of PlyBot. This typically involves driving into a hackerspace and testing different parts on the laser cutter to refine it.

My advice to young people thinking about getting into engineering is to just try stuff out. If you see something cool on the internet or in a book, search online for how it works and see if you can build it. If there's a kit for it, buy it and build it and then see if there's anything that you can improve on it.

You'll quickly realise that anything that looks too complicated to understand is actually much simpler than it seems. No matter what your age or experience level is, you can improve designs and create your own.

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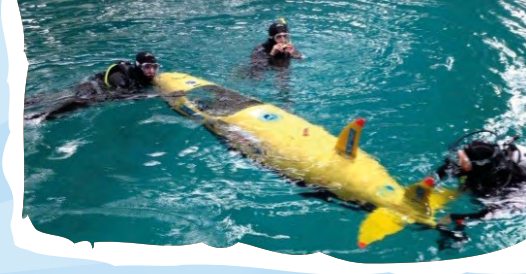
Case study:
Emma Shavick

Mechanical engineer - clean manufacturing

Emma looks at manufacturing processes and works out how to make them more sustainable and efficient.

The great thing about my job is that no two days are the same because of the huge range of projects that I work on. Sustainability means making every day better for people and the planet through how we innovate and how we act. I make sure that no manufacturing waste is sent to landfill by looking at innovative new solutions to turn waste into something useful.



This includes creating truck-wash out of scrap washing-up liquid and sending good products that we cannot sell to charity. I am proud to be a small part of this, contributing towards reducing the carbon footprint and building a supply chain that is sustainable from raw material to finished product.

I had no idea about what I wanted to do when I left school. I applied for summer internships to try out different job roles and chose mechanical engineering because I enjoyed science, maths and practical projects in design and technology. I also wanted to keep my career options open and I knew that a degree in engineering would lead to good job opportunities. I love the practical, hands-on side of engineering and working as part of a team to solve a problem.

My advice to a young person who is considering a career in engineering would be to follow the subjects that you enjoy most, because that will lead you towards a career that you'll enjoy. Don't worry if you don't know what you want to do as a career yet.

Engineers rarely work on their own, so being a 'people person' is important. You should enjoy working as part of a team and be a good communicator as well as a good listener. Being a creative and passionate person and enjoying problem solving is useful too. Stereotypes about engineering being a subject for men are becoming a thing of the past, so go for it!

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Case study:

Robert Edwin Rouse

Mathematician, Designer, Engineer

I've always been interested in puzzles, maths, and creation but engineering wasn't on my radar until I hit 18, when I realised engineering is the creative application of knowledge in solving a problem.

I knew then that along with everything else I am, I was also an engineer.

I have studied different fields and had internships in various industries before finding my feet. With each wrong turn I learned more about myself, such as who I wanted to be and what my principles were. I knew that I couldn't sit by when I have the ability to improve the world.

Last year, I founded my first company; Remora uses biomimicry in designing marine tech that reclaims plastics from the world's oceans and rivers.

Our world would not exist without engineers even though most people probably don't give that a moment's thought. To be an engineer is to be versatile and to contribute and I rather like that.

My advice to young engineers is don't lose faith in yourself, your work, or your beliefs. You'll be judged, make mistakes, and have your beliefs challenged. What's important is to learn from the mistakes and stand by what you believe in. Engineering is ever changing so always be open to new ideas and never lose your sense of curiosity.