The Institution of Engineering and Technology

EVERYDAY LIFE, ENGINEERING & YOU

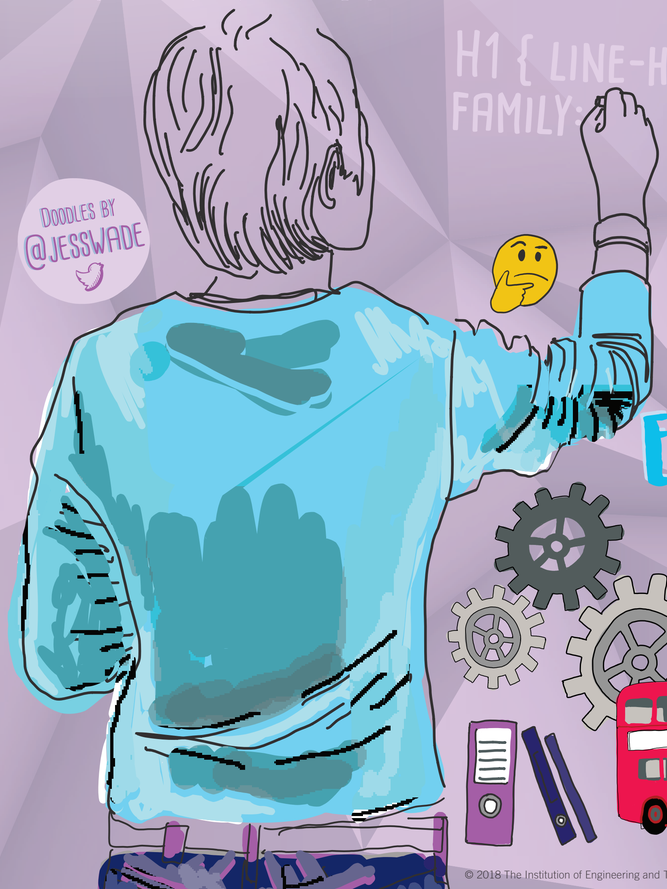
ENGINEERING TOUCHES EVERY ASPECT OF PEOPLE'S LIVES IN MANY DIFFERENT WAYS. EVERYTHING FROM THE PHONE IN YOUR POCKET, THE VIDEOS YOU WATCH ON YOUTUBE, SNAPCHAT AND INSTAGRAM, TO THE FOOD YOU EAT AND THE CLOTHES YOU WEAR.

Yet in the UK we do not have enough engineers to keep pace with demand - just 12% of those working in engineering occupations are women.

If YOU are a young woman who is not sure what to do with YOUR future, engineering could be for you.

Choosing engineering is not simply choosing a great career with great perks (good money, travel, variety and respect), it is a highly creative and innovative industry and engineers play a significant role in shaping the future - turning ideas into reality.

You could be paving the way to a sustainable future and making a difference in the lives of others. By making the industry more accessible to women not only will they have an opportunity to help shape our future, they will also reap the benefits that such a rewarding career has to offer.



CYBERSECURITY

Cyber security professionals protect valuable information from cyber breaches and they work in virtually every industry, responding quickly to real-world threats.

- **ETHICAL HACKERS** are the ultimate security professionals, who hack into computer networks in order to test and evaluate its security, rather than for criminal intent.
- **CRYPTOGRAPHERS** develop algorithms, ciphers and security systems to encrypt sensitive information.
- **SECURITY ENGINEERS** help to safeguard organisations' computer networks and systems. They plan and carry out security measures to monitor and protect sensitive data and systems from infiltration and cyber-attacks.

GAMING

Gaming is a very exciting industry where art and technology collide. So who works in games?

- **AUDIO PROGRAMMERS** are responsible for the processing and playback of sound effects, character voices and music in games.
- **ARTIFICIAL INTELLIGENCE PROGRAMMER** AI is an element of computer science that enables a machine to mimic intelligent behaviour. They tend to work closely with gameplay programmers since a lot of the skills that they share are the same.
- **BUILD ENGINEERS** These programmers give games a brain, constructing a set of specifications where the characters not controlled by the player operate and make decisions.

THEME PARKS

Theme parks are lots of fun, but did you know about all of the engineering that goes on behind the scenes?

- **COMPUTER ENGINEERS** make sure that all the rides and activities in a theme park are safe by using software to calculate the mass and friction.
- **DESIGN ENGINEERS** design to entertain and amaze attendees with interactive environments and high-tech thrills.
- **CIVIL ENGINEERS** in the context of theme parks, apply the principles of physics - mass, friction and speed - to make sure everything is fun, fast and memorable, as well as safe.

CLEAN WATER

We're very lucky to have access to clean water, and engineers ensure its safe for us to drink. The clear, colourless water in your glass cups had to go through many processes to make sure it doesn't cause any harm.

- **WATER RESOURCE ENGINEERS** design new systems and equipment such as underground wells, springs and water treatment facilities to help conserve our water.
- **ENVIRONMENTAL ENGINEERS** ensure we have access to clean water that is safe to drink.
- **CIVIL ENGINEERS** are responsible for water supply and sewage systems.

ROBOTS/DRONES

Robots are becoming more and more common in our every day lives - but who is making them?

- **MECHANTRONIC ENGINEERS** build robots and smart machines that are aware of their surroundings and can make decisions! Some pretty cool stuff!
- **ROBOTICS ENGINEERS** are behind the scenes designers, and are responsible for creating robots and robotics systems that are able to perform human tasks!
- **ROBOTICS RESEARCH ENGINEERS** design robotics systems and research methods to manufacture them economically.

TECHNOLOGY

Technology is constantly changing the world around us - but who are some of the engineers behind it?

- **COMPUTER ENGINEERS** design and develop the latest computer systems and technological devices.
- **ELECTRONICS ENGINEERS** design, develop and test electrical systems and devices, from light bulbs and laptops, to smart phones and GPS tracking.
- **ACOUSTIC ENGINEERS** use science and design to control sound and vibration, from automotive design to improving medical imaging.

ENVIRONMENT

Environmental engineers help identify and develop solutions to environmental problems in order to protect us from harm or enhance our quality of life.

- The work of **CIVIL ENGINEERS** is everywhere, such as the roads and bridges we travel on but they also look after the systems that bring us clean water and take away waste.
- **ENVIRONMENTAL ENGINEERS** create solutions to problems concerning the environment by monitoring air and water pollution and improving recycling.
- **AGRICULTURAL ENGINEERS** are involved in farming and the equipment/machinery behind it.

MAKING FOOD

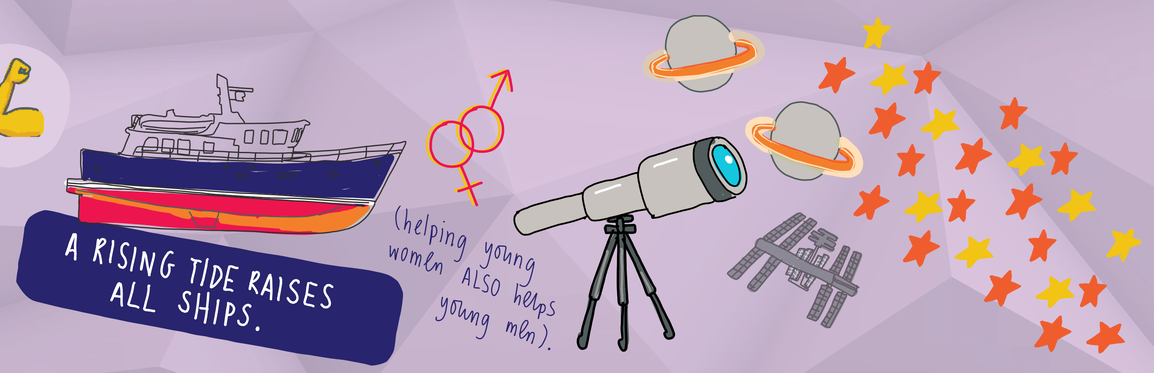
There's lots of work that goes on behind the scenes to make sure our food is tasty, healthy and nutritious!

- **FOOD ENGINEERS** focus on ensuring that the food we buy off the shelves is packaged well and stays fresh, as well as improving food quality.
- Thanks to **CHEMICAL ENGINEERS**, everyday we can choose from a range of fresh, safe and good tasting food.
- **AGRICULTURAL ENGINEERS** make sure that the processing and production of food is efficient, crucial for smooth food production.

PHONES

Mobile phones are one of the most used technology in the world - and several different types of engineers create them!

- **ELECTRONICS ENGINEERS** deal with the electrical circuits and boards in your phone.
- **SOFTWARE ENGINEERS** are responsible for creating the applications in your phone.
- **MECHANICAL ENGINEERS** are central to creating the actual phone and all the components like the buttons, casing and the slick shape.



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