



WE DISCOVER, WE GROW

Girlguiding

North West England

# Clever Clogs Making Waves

## Engineer FAQs

When we launched our new STEM challenge pack - Clever Cogs, Making Waves - in June, our panel of engineers who ran the launch event asked you to send them your questions. Here are the answers!

### What types of engineering are there?

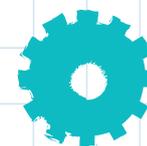
- So many! From Systems Engineers who look at the big picture, aerospace, electrical, chemical, textile, food, nuclear, environment, automotive, maritime, biomedical, structural (buildings), civil (bridges & roads), software and more! Anything made has been engineered somewhere! If it's a problem to be solved and something needs to be made or combined to solve it then there is a group of engineers who can help!

### What made you want to become an engineer?

- I wanted to become an engineer as my dad was an electrical engineer and I used to work with him and picked up some of the skills.
- I fell into engineering by chance after doing some work experience at BAE Systems. I had to find something to do during the work experience week and I was struggling to think of what I might be interested in. I knew the local BAE Systems site ran work experience weeks, so I applied without knowing much about what the company does. It was during this week that I found out more about what engineers do and knew I wanted to pursue it as a career.
- The endless opportunities and working with exciting new technologies every day.
- I always was interested in the sea and submarines and wanted to know how to put them together. It is what I am good at - I did try and resist it for a while but I am glad I was brave and went for it. I was good at maths, physics, science, I'm naturally curious, but as I'm dyslexic I'm really bad at spelling!
- I love learning how and why things work! Also, I have always had an obsession with aircraft, so the combination of the two is perfect. My dad took me to my very first air show. I asked him which aircraft was his, as he works on the Eurofighter Typhoon Aircraft at BAE Systems, and he said 'You will hear it, trust me...!' Once I heard the aircraft, I was fascinated, and I have been obsessed with it ever since.

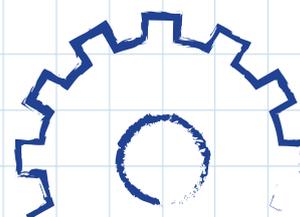
### Did you always want to be an engineer?

- No, I wanted to work on submarines.
- Originally, I had wanted to be a pilot, and I drifted more towards engineering.



### How old do you have to be an engineer?

- BAE Systems employ apprentices from 16, but you can be a curious problem solver from any age. You can start engineering at home anytime! Building Lego, fixing cars, designing bridges, or experimenting with baking soda volcanoes is all you being an engineer!



## What qualifications do you need to be an engineer?

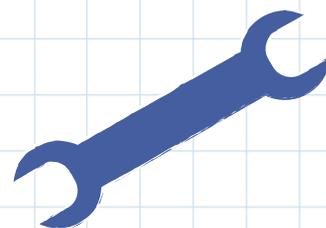
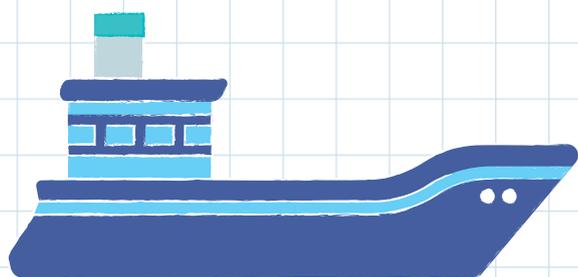
- The qualifications you need depend on the path you take to become an engineer. To join the apprenticeship schemes, you'll need GCSEs in Maths, English and Science or there's also BTECs you can do at college. To join the graduate schemes, you'll probably need a degree in Engineering or a related field such as Physics or Computer Science. I know a great software engineer who did Russian and French at uni and played with computers as a hobby!
- Play to your strengths and interests. Teamwork and problem solving are useful skills to have.

## When did you start to study to become an engineer?

- I wasn't interested in engineering at all until I wanted to learn to fly at age 15. Then I spent a lot of time at the airfield with people who were building their own airplane and I wanted to be able to help and join in their conversations. So, after a two-year break from college, I did a degree in aerospace engineering.
- I joined the Technical Apprenticeship scheme at our Electronic Systems site in Kent in 2017. From here, I learnt everything I needed to know about engineering and was paid whilst I did it! Now, in 2021, I am doing well in my job and have my own responsibilities and work with a team of people to meet our targets and goals. I'm constantly learning, as all engineers do, because engineering is an ever-changing career as we keep up with modern technologies and help to design ones that don't even exist yet!
- University, but one of my friends joined the company after graduating in Languages - they are an amazing Software engineer now!
- I knew I wanted to become an aerospace engineer from a very young age, so I decided to join the Air Cadets. At A Level, I picked Maths, Physics and Chemistry.

## What are your favourite aspects of engineering?

- My favourite thing about being an engineer is being able to meet and work with so many different people. Every single day is different, and I've even been lucky enough to work in other countries.
- I like being able to work with other people to solve problems. It is exciting to have a problem and be able to work with a team to solve it.
- My favourite aspect of engineering is the variety it brings. Each day is different as we constantly have new and evolving real-life problems to solve. We work hard to find or design solutions to help improve the way things work and are always working with the latest technologies to ensure we remain leaders in our field - plus, from a personal point, it's great fun working with new gadgets and technology!
- I love the problem solving, making it easier to do our job and getting people together to use their strengths to deliver something that on our own, we could not do.
- I love that you learn new things every day. I also love how diverse engineering is and how many opportunities there are.



## What is the best thing you have done as an engineer?

- Working in flight test. We got to brief the test pilots on the plan and then see them fly around the country, testing the aircraft and look through the flight data afterwards.
- Become a mum, and helped the US Department of Defense & UK Ministry of Defence understand the best way they could use the systems and helped people to land & fix a F35 fighter jet on the Queen Elizabeth Aircraft Carrier.
- There have been lots, I liked understanding how radars work and then how to make them think the plane had disappeared!
- Planning STEM events for young people where we help encourage and inspire them to get involved in engineering.
- I won several 1st place awards at a competition in Air Cadets on wing training day.

## If you hadn't become an engineer, what would you have become?



- If I hadn't been an engineer, I would have been a pharmacist so still science based.
- If I hadn't started my journey to become a software engineer I was planning to study to be a vet at university.
- An airline pilot! Or a marine biologist, or a primary school teacher, or my dream job would be a scuba diving instructor working with astronauts in Neutral Buoyancy Labs for ESA or NASA!
- If I hadn't pursued engineering, I think I would've entered the creative industry as I'd always loved art at school and still enjoy illustration in my spare time. I realised that, as an engineer, I can apply my creativity to problem solving and help design and produce solutions to real-world problems.
- I think I would have become a pilot.

## What is your yearly salary?

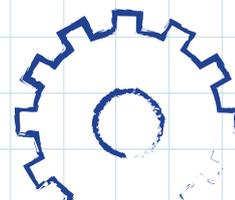
- The starting salary for graduates at BAE Systems ranges between £28,000 and £32,000, and the starting salary for apprentices at BAE Systems ranges between £18,000 and £24,000. The average salary for engineers varies by what field of engineering you might go into and what stage of your career you're at - as you progress through different levels, the pay increases.

## How long does it take to gain the confidence to work as an engineer?

- It depends on what you're doing. Once I know how to do something I am happy to work on it alone and ask for help when needed. Learning something new is expected and knowing when to trust your abilities and when to ask for help is a great skill and it's never wrong to ask.
- I felt confident since my very first day with BAE Systems as I felt so welcomed and supported. I also felt comfortable to make mistakes as we are encouraged to learn from them.

## Is it scary being an engineer?

- It can be a really big responsibility, but never feels scary - you get lots of support and help.
- No scarier than a doctor, or a firefighter, or a footballer or an actor!
- You have a team that help you. As you grow you know more and can do more and do more exciting things.
- I have never felt scared so far. Instead, I feel excited every day!



## Do you like being an engineer?

- Every day is different. I am very proud to say I am an engineer, to work with the clever people I do on the projects and systems that are amazing.

## Do any of you from BAE work down in Norfolk or Portsmouth?

- Yes! I work in Portsmouth, as part of 'Maritime Services' - we work with Royal Navy ships. BAE Systems also have sites in Isle of Wight, Yeovil, Frimley, to name a few sites within 1-2 hours of Portsmouth. As an engineer you can also work from different sites either full time or part time.

## How has work life changed during lockdown?

From the office to 100% at home. We've had to learn and work differently but I have enjoyed it.

- Work life is now split between my home and the Rochester site. I work from home 2 or 3 days a week and complete all my computer-based work during these times and go onsite the remaining days to do some lab work where necessary. I really like this split as I enjoy working from home, but sometimes I can get bored! By splitting the days of the week between home and site, it keeps it interesting but means I don't have to commute an hour to site every day. I now work from home with team across the country, previously the world. I see my children more.

