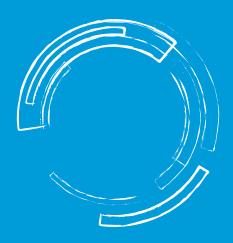


LOADING...

From when I was 10 to my career in STEM: A careers collection for primary pupils

# The future



isn't what it used to be!



# Future Me

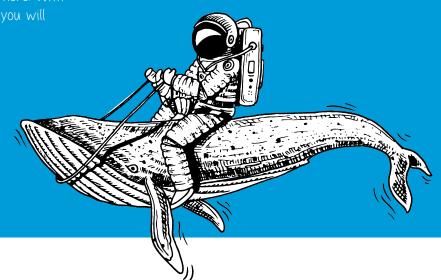
Welcome to Future Me: Innovation Edition! This exciting publication showcases fantastic STEM professionals who volunteer to inspire the next generation in careers in Science, Technology, Engineering and Maths.

In this book, we find out about their jobs, what area of STEM they work in, their best bits and challenges. For fun, we also discover interesting facts about each STEM professional, and what they wanted to be when they were IO! Do you know what you would like to be in your future? You will see that sometimes, that can change! We hope to inspire you to see yourself in the huge selection of exciting jobs featured here. With diverse role models with interesting stories, you will enjoy finding out all about them!

In celebration of British Science Week, we have chosen STEM professionals whose jobs involve innovating, creating, and doing things in ways that have never been done before! Each profile has a statement that explains why their job involves innovation.



Enjoy!
The STEM Hub team



# Tim

# New Venture Engineering Lead

## CAREER AT AGE 10

I would think that I wanted to be a footballer (in fact I still do!) I have also been told that I was keen on becoming a milkman when I was younger (perhaps younger than 10)

# CAREER NOW

I design and build new computer software products to help detect criminals.

# AREA OF STEM

Studying Mathematics and Physics at University set me up with problem solving skills which have proved invaluable throughout my career to-date. I now apply those within the Technology field, with a focus on Cyber Security and Financial Services.

Tim's work involves inventing new things and doing things in new and different ways!

#### **FUN FACT**

I flew a plane before I drove a car!



# BEST BIT OF JOB

Solving problems. Every day there is a new challenge to solve, be that to do with how we make the software work, or how we sell it.

# CHALLENGES

Our team is all about developing new products. That means that often we're trying to do things nobody has done before, which is very exciting. A current example we're looking at is how to recreate realistic financial transactions for banks

# SUBJECTS

When I first joined the company, I joined as a Technical Graduate. For this, I needed to have studied a STEM subject at University (and at school before that).



# Gillie

# Senior Manager, Network Design, Virtualisation

# CAREER AT AGE 10

I can't remember but probably involved running around outside.

# CAREER NOW

I lead a team of engineers, working with new technology to create network solutions and products for customers. My team is made up from apprentices to experienced engineers with over 30 years experience.

Gillie and her team use technology to problem-solve and come up with new and innovative solutions!

# **FUN FACT**

After 30 years, I have gone back and discovered my love of singing. I have taken exams and sang in local concerts and in an orchestra. You are never too old to do something for the first time!



I work in technology and using new technology to drive new solutions and products for customers. In my team I have people with a strong computer science or engineering background and we are working with leading edge technology. For tracking our costs and budget needs a solid maths background is very useful.

# BEST BIT OF JOB

# CHALLENGES

love the challenge that there

# SUBJECTS

Maths and Statistics, Science (Physics) & Computing



# Luke

# Graduate Electrical Engineer

# CAREER AT AGE 10

Detective

# CAREER NOW

I am an electrical engineer working on wind farms and hydroelectric power stations.

# AREA OF STEM

I am an engineer working on building, decommissioning and maintaining wind farms and hydro-electric power stations. I am using maths, physics and computer science daily to help build the best renewable generation so that we can achieve a low carbon future.

Luke works in a very innovative area of the STEM world.
Renewable Energy helps our environment!

# **FUN FACT**

I have played saxophone in a jazz band in four different countries!



# BEST BIT OF JOB

Having a real impact on helping the UK to achieve the net zero carbon emission targets. Renewable energy is developing quickly and this is exciting. I love being a part of making a sustainable future a reality.

# CHALLENGES

One of the main challenges is coming up with solutions that are not only going to make improvements but also be affordable, reliable and safe. We depend on electricity in everything in life, so electrical engineers must make sure the lights stay on!

# SUBJECTS

Science and Maths GCSEs and at A Level Maths, Further Maths and Physics are highly recommended. I took Product Design which was also useful but not required.



# Laura

# Senior Operating Department Practitioner

# CAREER AT AGE 10

I watned to be a chef.

### CAREER NOW

I am the deputy team lead, for urology, general and colorectal surgery. We have II operating theatres in total. I help in operations as well as anaesthetics. Ensuring safe care and recovery for all our patients. I can also run the floor, ensuring all theatres and staff are safe and running efficiently.

Laura is using innovation in operations to make sure patients are safe and can recover well.

# **FUN FACT**

I created my own ironing company to help pay for myself when at university.





My role involves knowledge of the human body from science, as well as the Mathematics for my usage of drug calculations for patient centred care. I have been able to mentor students who are considering a career in health care. Taken part in activities in primary schools to help understand surgery, and interview for work experience.

# BEST BIT OF JOB

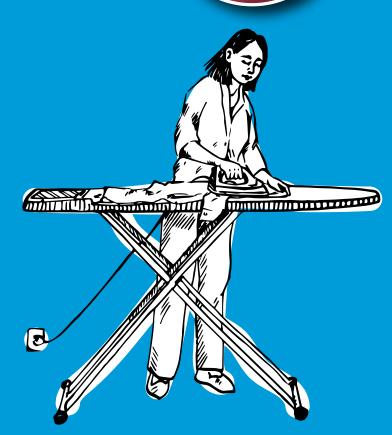
Seeing the change to someone that you can make, ensuring that we are helping with their wellbeing and ensuring a good recovery.

# CHALLENGES

It can be long hours, and a demanding job, however the difference you can make to one person's life, instantly melts away any challenges you may find in this type of career.

# SUBJECTS

Science, Math and English.



# Vasilis

Medical Physicist, Radiation Safety STP, East Kent Trust

### CAREER AT AGE 10

I wanted to be a pilot, however due to my bad eyesight i could not. Then i did the next best thing, a physicist.

### CAREER NOW

I am a clinical scientist, medical physics, at Canterbury Hospital. I am an STP trainee for Radiation Safety. Vasilis works with innovative ways to treat, diagnose and keep public safe from Radiation.

# **FUN FACT**

I love Simpsons and Rick and Morty.





It is science within care. We provide advice on diagnostic treatment and safety from radiation as well innovative ways to treat, diagnose and keep public safe from Radiation.

# BEST BIT OF JOB

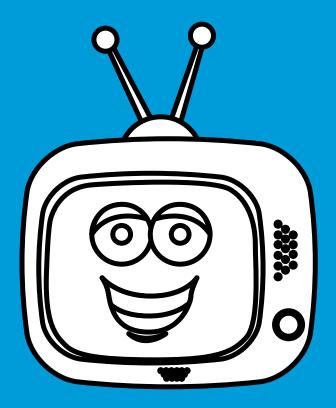
Helping others and being able to work in new technologies.

# CHALLENGES

There is not a lot of awareness about radiation and the effects of it. Furthermore, working in the cutting edge of the field you are faced daily with problems that no one else has advice on.

# SUBJECTS

Physics, Maths, computer programming.



# Jacqueline

#### Research Fellow

#### CAREER AT AGE 10

 ${\bf I}$  wanted to be an astronaut and explore space and  ${\bf I}$  also wanted to be a Mummy and have children.

#### CAREER NOW

I'm a research scientist working in computer science.

# AREA OF STEM

All scientific research can be valuable, sometimes straight away and other times results are used later in the future. My job is to find new maths and methods for computing useful things. This includes studying biology and finding ways to improve human and animal health. The methods for this involve maths, cleverly engineered computer programs, and biology.

Jacqueline innovates using maths, finding new ways to improve our health!

#### **FUN FACT**

When I was born my family was living in a bus. Later we moved to Malaysia and I went to primary school school there. During secondary school my family returned to England and we drove back through Asia and Europe in a different bus!



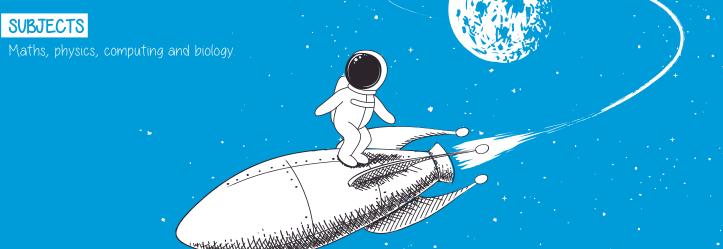


# BEST BIT OF JOB

Working with scientists around the world I get to travel to a lot of places like South Africa, Europe and Asia and meet interesting people.

# CHALLENGES





# Carl

# Digital Engineer

# CAREER AT AGE 10

I dreamt of either being in the video games industry or being a race car driver in the British Touring Car Championship.

# CAREER NOW

I'm a digital engineer in a construction company specialising in visualization and gamification of our projects (including VR, AR and future technology).

Carl innovates by designing future technology and fun new ways to play games!

# **FUN FACT**

In 2002, I was picked from a crowd of 33,000 people to play guitar on stage at Wembley Arena with the American band Green Day.



My job combines technology with engineering while building models in 3D and VR. I create a gaming style interactive 3D model for our teams to use, and I also showcase our projects at events and show our customers the benefits of using technology. The new generation of workers will need a very high level of technological expertise to survive in this evolving industry.

### BEST BIT OF JOB

I like to interact with our customers and show them how technology can help us to improve their project. Also I get to create gaming style levels for my 3D models and play through them with an Xbox One Controller.

# CHALLENGES

Technology is always changing and we have to make sure that the technology works and is not just a shiny thing. As an example, the VR headsets we use are cutting edge but not too expensive. I also need to make sure that the models can be shown to all different levels of staff plus it needs to have a very easy "pick up and play" usability.

#### SUBJECTS

IT is number one priority. Having a very technical support style background has given me advantages in my role. I would also suggest a good English background as I communicate with all different levels of management. This has given me the strength to communicate clearly and precisely on our project ideas and developments.

# Shriram

# Bioinformatician

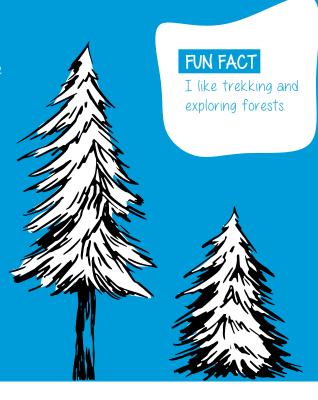
# CAREER AT AGE 10

I had various jobs in mind, however I wanted to be a plant Biologist.

# CAREER NOW

I work on computers to find out what is hidden in the cancer cells that causes them behave differently.

Shriram is working in innovation to help find a cure for cancer that is new.





My job involves using computers to understand Biology. It is very interesting to design computer programs to find hidden secrets in the cancer cells. My work will help to understand how different cancers are developed and eventually find prevention and cure for some of them.

# BEST BIT OF JOB

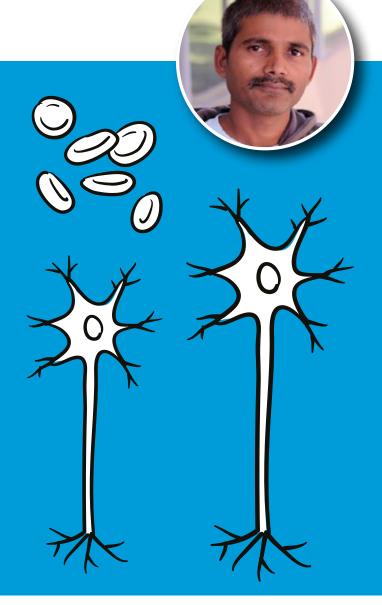
Discovering novel cancer causing genes.

# CHALLENGES

When there is no method available to look at new data types I have to write my own. This is always challenging and equally exciting to develop something new that will help other scientist to make new findings.

# SUBJECTS

Computer, Biology and basic Mathematics.



# Hephzil

# Charity Director / Science Communication consultant

# CAREER AT AGE 10

I can't remember but being an air hostess was appealing when I was younger. The uniform and the idea of free travel around the world was enticing

# CAREER NOW

I am the director of an international charity, I also run an education business, and provide consultancy services in science communication.

Hephzi is innovative because she makes science interesting and demonstrates the possible to the next generation!







I use my science experience and knowledge to design and deliver workshops and STEM inspired community activities. I also have a learning centre where I get to teach science.

# BEST BIT OF JOB

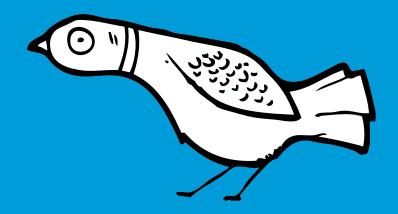
Engaging with my students and bringing STEM engagement experiences to community groups.

# CHALLENGES

Making sure that activities suit an audience. You have to find the right balance between education, entertaining and interesting.

# SUBJECTS

I took physics, chemistry biology and maths at A levels and did a science degree and postgraduate at university. However, I have had to learn a lot about business which I had never studied and wish I had studied business as a postgraduate degree.



# Soumya

Lecturer in Design Engineering at Canterbury Christ Church University, UK Soumya teaches in innovative ways to help students make their dreams come true!

#### CAREER AT AGE 10

Astronaut

#### CAREER NOW

Currently, I am a lecturer and biomedical researcher. Besides I was an entrepreneur as well (previous cofounder of Shilpa Innovation Pvt. Ltd, India).

# **FUN FACT**

I write poetry and love reading stories, novels although being a student of mathematics. Also, I am very fond of cooking too and my friend says I could even be a chef!



I teach maths, design and programming to engineering students. I discovered that students thought that they need to be super intelligent to have an engineering career and that they feared maths. I would like to change the mindset of students, myth-busting who can be engineering professionals and develop student confidence in their own ability to be a future engineer. Once they recognize their strength, they will be driven by their passion rather than pressure.

# BEST BIT OF JOB

I always consider teaching as my passion and profession, besides I love to develop innovative engineering products from scratch.

# CHALLENGES

There are a few challenges such as building motivation and supporting all students. After all, it's up to you whether you consider problems as your challenges or your test! When you succeed in overcoming hurdles and passing the test, you will feel honoured and satisfied.

#### SUBJECTS

Mathematics and physics



# Ian

# Deputy Head of Profession | Vehicles Engineering

# CAREER AT AGE 10

I wanted to be a Milkman or a fire fighter

# CAREER NOW

I run a team of 200 Engineers who help ensure all the vehicles that operate Transport for London services run safely and reliably everyday. This involves all sorts of different thigs day to day, but I'm generally reading and writing emails, attending meetings, reading and writing documents and signing off activities

Ian uses innovation to improve transport services, helping them to work even better every day!

## **FUN FACT**

I love swimming and travel to tropical places to see animals in tropical seas.





It's essential that I understand the engineering principles and techniques to ensure that our vehicles remain safe and reliable every day.

#### BEST BIT OF JOB

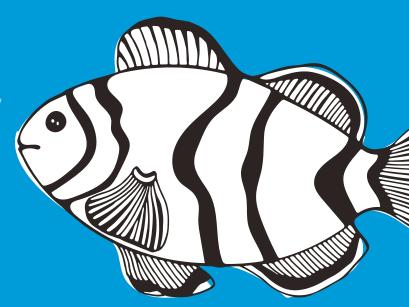
Seeing things that we have been working on for long periods of time finally going into use. Many of the things I work on take more than 5 years from start to finish as they are really massive jobs, so it's a really long wait to see the final results.

# CHALLENGES

The biggest difficulty is dealing with such large groups of people and making sure they all understand what we are working to achieve, how it all fits together and how and why their part is important.

#### SUBJECTS

Science and Maths are really important but English and Arts subjects are important too. Communication is really important, as is being creative which I find Art helps me be.



# Katie

# Regional Regulatory Strategist

# CAREER AT AGE 10

Prime Minister

# CAREER NOW

I work with Pfizer colleagues located in different countries around the world to ensure that patients have access to the medicines they need.

Kate's works in innovative ways to make sure that medicines can get to the patients who need them.





I have a degree in Chemistry and my focus is in Chemistry, Manufacturing and Controls. Every day I use my scientific training and understanding to ensure that product supply to patients is not interrupted.

# CHALLENGES

Working with colleagues from different countries and cultures, solving problems, avoiding product supply issues, meeting Health Authority rules.

# Solving problems and helping people Science, business studies

# Catherine

# Game Designer

# CAREER AT AGE 10

When I was young, I really didn't know what I wanted to do, and that is ok! If you know what you want to do, that's amazing, but if you don't, you have plenty of time to figure it out! I liked playing video games, but I never knew or even thought that it could be a job I could do.

# CAREER NOW

I'm a Game Designer and I have been for the last 10 years.

Catherine creates and innovates new games for people to play and enjoy!

# **FUN FACT**

I'm a twin. And my twin sister works at the same company as me!





Even though I'm doing a creative role, in my career I work with technology every day, whether that's creating on a PC or a game console. You may think something like Science or Maths, or even classes involving technology are boring, but you're being taught skills for jobs that are really creative and exciting. Think of any piece of technology that helps you or your family, or allows you to have fun. A person or team had to come up with that idea, design it, produce it, and put it in your hands. Lots of people in very different jobs had to work to make that happen. STEM technologies can solve problems across the world, improve people's lives and create many new job opportunities.

# BEST BIT OF JOB

My favourite part of my job is hearing that people enjoy a game that I have worked on - praise is always nice to have! That and finishing production of a game and having a copy at home to play and enjoy knowing that I helped create it! That's two things but there are so many more things I enjoy about this job.

# CHALLENGES

I face challenges daily. Whether it's having to fix a problem that I didn't consider at first, changing my work to ensure everyone enjoys it, or coming up with new ideas. Or it might be having a discussion with my team on how to approach some work that's required – every day has new challenges and the best feeling is to work together as a team and create something cool and fun!

# SUBJECTS

Lots of subjects help game design, and a willingness to learn and work as a team. You can even learn a lot from playing games! When I decided on what subjects to do, I wasn't sure what I wanted to do. It's okay to feel like that! If you want to work in the video games industry think about what you might like to do. You might need Maths, Science, Computer Science, Graphics Design, Art, Music or Media Studies.

# Mahmoud

#### Scientist

#### CAREER AT AGE 10

To become a medical doctor.

# CAREER NOW

I later discovered that becoming a medical doctor is not my thing when I realised I didn't want to see blood. So I decided to become a scientist. I am now a research scientist working to understand the causes of Dementia and how we can treat it. So although I am not a medical doctor, I still do things that help in treating people with diseases.

Mahamoud is innovative because he is trying to solve a problem and treat a disease that has no cure.

### **FUN FACT**

Every day, I tell myself exercise is important. However, I am never consistent in following an exercise routine!



I am a Biologist and my work focuses on understanding the causes of Dementia and how it makes us ill. Dementia steals away the memories of those affected, such as the memory of who they are and their families. Without our memories, life is hard! More than 50 million people around the world currently have Dementia, and this will continue to increase unless we do something. This is why my work is important. When we understand the causes of Dementia and how it affects brain cells, we would hopefully find effective treatments to defeat it.

#### BEST BIT OF JOB

Solving problems with experiments in the Laboratory and using test tubes. That makes me feel very fulfilled most days

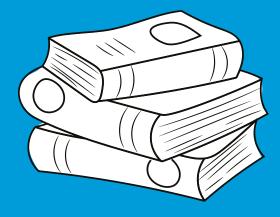
# CHALLENGES

Not all experiments work. Sometimes you try and try,

but it never works. On the positive side, the failure of experiments to work the way we want them might also be telling us something valuable, so we should not always ignore them.

# SUBJECTS

Biology



# Kirsty

Weather presenter and meteorologist

# CAREER AT AGE 10

I wanted to be an environmental scientist and save the planet.

Kirsty uses innovative technology to predict the weather and help people watching stay safe .







Weather presenters are usually meteorologists with backgrounds in maths and physics so that they can understand our atmosphere. We translate complex data in order to give tailored weather broadcasts to suit our audience. We need to warn people of severe weather, before it happens.

# BEST BIT OF JOB

Every day is different - the joys of British weather!

# CHALLENGES

There is no script or autocue when you present the weather. Instead I stand in front of my graphics and talk on my own, while the director talks in my earpiece to tell me how long I've got left.

# SUBJECTS

Maths and Physics are essential. Also Drama is useful to ensure you are happy in front of the camera!



# Anusha

# Senior Policy and Engagement Manager

# CAREER AT AGE 10

Finding microbes in space and curing diseases 'out there'!

# CAREER NOW

I work in science policy on Brexit for the UK government.

# AREA OF STEM

I work towards ensuring scientific evidence is used in making new policies. I am a virologist and have to understand technical information in important papers. Scientific evidence forms an important part of decisions that the UK government makes. These protect and promote a healthy lifestlyes and patient safety in the UK.

Anusha's work makes changes to how our government makes decisions that affect all our lives.

**FUN FACT** 

I teach salsa dancing!



# BEST BIT OF JOB

Multi-tasking on lots of exciting projects to make big changes to the life sciences sector.

# CHALLENGES

There is never enough time in a day!.

# SUBJECTS

Science is useful, and Maths also helps



# Marie-Claire

3rd Year Student studying Biology at university

# CAREER AT AGE 10

I wanted to be a doctor.

#### CAREER NOW

I'm Studying Biology at University.

# AREA OF STEM

It will be the bridge for me to get a job within the science sector, or maybe go on to further study such as a masters or PhD.

Marie-Claire uses innovative equipment and technology in her studies.

## **FUN FACT**

I volunteer as a swimming teacher and also have a license for amateur radio.



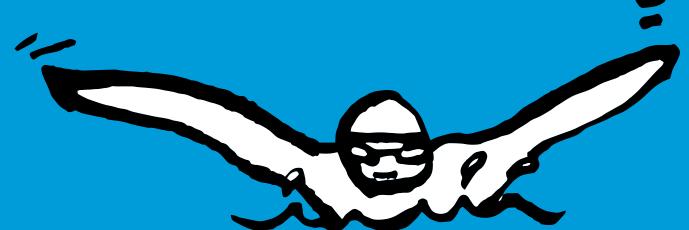
I love learning how to use the different kinds of equipment and how there are many things affecting how our body works. It is great when the pieces fall together and the light bulb suddenly goes DING!

# CHALLENGES

Sometimes my experiments never go to plan, and the results never work out how I expect them too. This gives me more to write about within essays and also I learn from my mistakes and don't make them the next time I repeat the experiments.

### SUBJECTS

I took Biology, Chemistry and Maths A level, however I only got a D in biology A level and failed the others, due to personal circumstances, and completed a foundation year to get into university.



# Kate

# Airline Pilot (Training Captain)

#### CAREER AT AGE 10

My parents encouraged me to be whatever I wanted to be and when I was much younger, I wanted to be a vet. But after my first solo flight at the age of 16, I knew that a career in aviation was my dream job.

### CAREER NOW

Airline Pilot (Training Captain).

#### AREA OF STEM

We use maths a lot during our working day. From checking passenger figures and weights to calculating the amount of fuel we require for our flight. Maths is very important once we are flying too, things such as calculating the wind speed and directions in bad weather and calculating how to land at our destination. Maths is important for every step of the way!

Kate innovates using measures and maths to ensure the safety of her passengers and crew.

#### **FUN FACT**

In 2016 I became the world's youngest female Airline Captain.



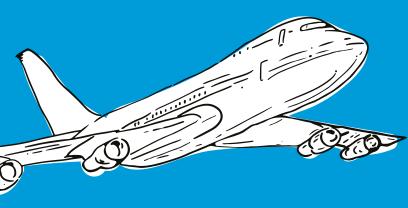
### CHALLENGES

I'd say the most challenging part of my job is the unknown. Every day is different and with that comes changing weather conditions at new destinations with crew who we may never have met before. But we train for all challenges, so we are ready to deal with any scenario and we plan ahead to prepare for things such as bad weather.

#### SUBJECTS

Many people are surprised to hear that you don't need

a university degree to start flight training. My advice is always to study the subjects that you enjoy the most. The technical side of learning how the aircraft works and how to fly it is important so pilots need a technical mind for which subjects like maths and science may help. But the most important thing is teamwork and communication. Pilots need to be able to work well within a team to operate a safe flight so these "life skills" are really important.



# Charlie

# Vehicle Development Engineer at McLaren Automotive

### CAREER AT AGE 10

To work with cars.

#### CAREER NOW

I work to develop our next generation vehicles, managing prototype vehicles and assisting with their testing.

### AREA OF STEM

I use Engineering. We value what we do and it is valuable in pushing new engineering boundaries and innovating, satisfying our customers

Charlie works on creating exciting and futuristic cars, using innovation to make the cars better and faster.

# **FUN FACT**

I once (very briefly) met Lewis Hamilton!



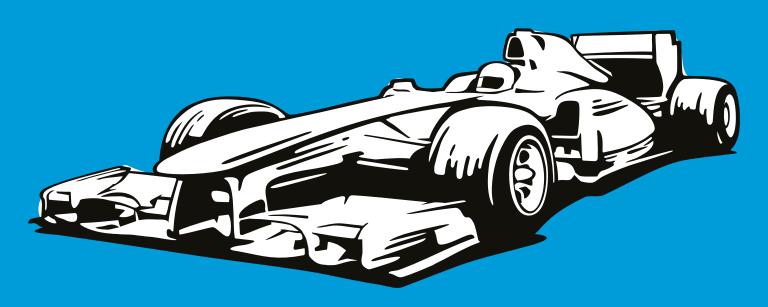
I get to work around and drive some of the best cars in the world!

# CHALLENGES

We work to tight timelines so the job can sometimes involve working under pressure.

# SUBJECTS

Maths and Physics (Science) are important, depending on what kind of engineer you want to be Design&Technology and Business can also be helpful.



# John

Member of IMechE Council, President of the Museum of Power, Director of an engineering company

John talks about innovation in his job, showing people that STEM is innovative!

#### CAREER AT AGE 10

To run my own company, but to be a steam train locomotive engine driver as well.

# CAREER NOW

I run my own company and help one of the most important professional engineering organisations and a museum show why STEM is such a good career choice.

### AREA OF STEM

My job is telling everyone how important and exciting STEM is and showing how it can help to make everyone's life better.

### **FUN FACT**

I am 92 years old, but my 1928 Morris Cowley called Flatnose, coupé car is about seven years older than me!





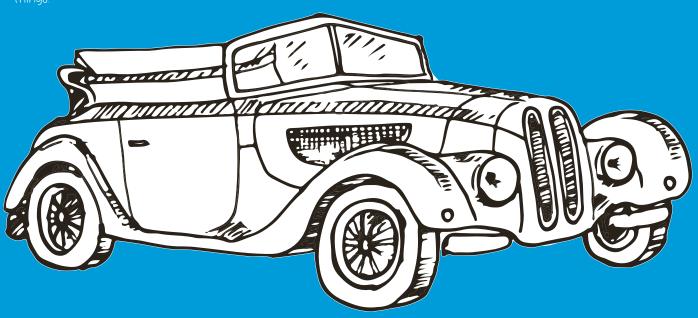
Meeting new people and helping the Museum of Power to grow, to make a difference and to be in a great place.

# SUBJECTS

Technology and Economics are important for this job.

# CHALLENGES

Balancing different engineering and non-engineering things.



# Michelle

### Senior Medical Affairs Adviser

#### CAREER AT AGE 10

I was keen to be vet.

#### CAREER NOW

I work for a large pharmaceutical company.

# AREA OF STEM

I have a job in science and work for a company who research and make medicines. This is valuable because doctors sometimes need medicines to help people who are unwell

Michelle uses innovative approaches while making new medicine to help people who are ill.

# FUN FACT

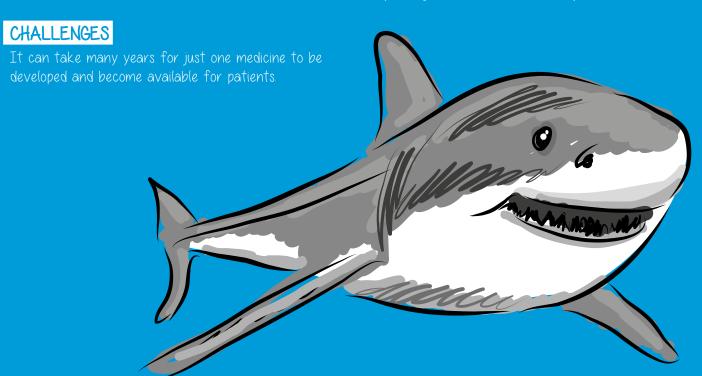
I once did a cage dive to see great white sharks!



It is really satisfying when we can make a new medicine for doctors to use with their patients and to see how these medicines can help people who are unwell.

# SUBJECTS

To do my particular job you would need to study science subjects at A level to be able to go to university and study a degree in Science, Pharmacy or Medicine.



# Eduard

### Postdoctoral Scientist

### CAREER AT AGE 10

I wanted to be a Marine Biologist.

#### CAREER NOW

I am a Molecular Biologist with an interest in the immunology of animals and how animals get and fight diseases.

# AREA OF STEM

Science is a big part of my job. We create new technology to understand how the immune system functions and how we can develop effective vaccines.

Eduard works with new technology to help make vaccines to fight illness.

### **FUN FACT**

I like to spend my time as a Wildlife Photographer!





Being the first person in the world to see what has previously been unknown gives me a real kick.

# CHALLENGES

Constantly needing to go back to the drawing board and understand that biology is more complicated than we can imagine.

# SUBJECTS

Science (Physical and Chemical), Maths and Biology



# Michal

# PhD Researcher at the University of Cambridge

### CAREER AT AGE 10

I wanted to be a mad scientist!

# CAREER NOW

I study how animal cells can protect themselves from viral infections and how we can use this to protect them even more!

### AREA OF STEM

I do research into something that will hopefully help us to better protect the health of animals.

Michal is creating something new and innovating to help animal health.

# **FUN FACT**

I can tell the wind direction with my eyes closed.



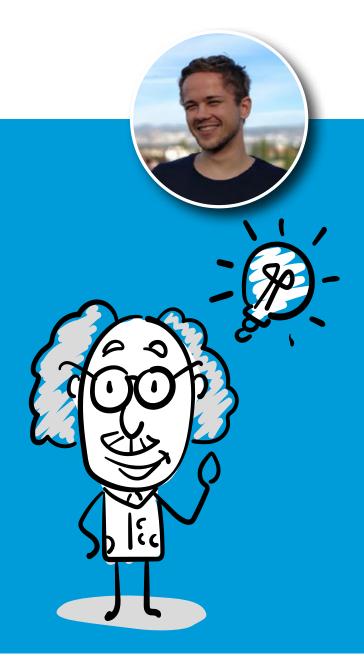
Infecting the cells with green-glowing virus. It looks so cool and tells me something interesting at the same timell

# CHALLENGES

I have to constantly solve puzzles and mysteries to uncover the unknown and to understand our world better. It's interesting and fun at the same time!

# SUBJECTS

Biology and Chemistry. Also, if you have curiosity and passion for science you can get into any STEM career



# Cherie-Anne

# Regulatory Accountant

#### CAREER AT AGE 10

I wanted to be a Lawyer so I could be bossy!

#### CAREER NOW

Regulatory Accountant for a Water company.

### AREA OF STEM

I use maths and computers every day in my job. I use excel models to find out if our customer's bills will have to increase because of the things we have to do to make clean safe drinking water or because of rate increases. It is important because the work I do will affect other people.

Cherie-Anne uses Maths to innovate and keep people up-to-date with water and their bills!

#### **FUN FACT**

I love Disney and think that Maleficient is the best villain ever!





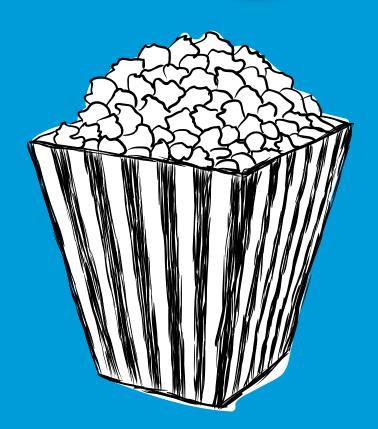
I really enjoy being given a problem and having to find the solution. For me every day is slightly different because of the different projects I get to work on. Using my skills in different ways helps to keep my job varied and exciting.

# CHALLENGES

We have a lot of external pressure to produce results within a certain time frame, sometimes this can be challenging, especially around holiday times.

# SUBJECTS

Maths and Economics are very important in my role.





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