

STM Quality explains how small businesses play a key role in sparking young people's interest in STEM



Background

Steve Markham is the director and sole employee of STM Quality Ltd, a consultancy that provides advice about quality and business management systems to manufacturing and engineering firms within the automotive and aerospace industries, among others.

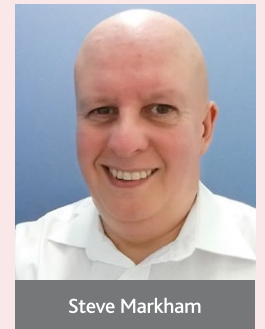
Drawing on a career of over 20 years in the automotive industry, Steve's business works with a diverse list of clients, including: a company that provides key technologies for combustion, hybrid and electric vehicles; a manufacturer of industrial air compressors, blowers and vacuum products; an organisation that designs and manufactures switches and crossings for rail companies; and a business that makes electronic public information and advertising displays.

Steve's enthusiasm and innovative approach to volunteering as a STEM Ambassador shows just how much impact small employers can have – even with a team of one!



The STEM Ambassador journey

Steve had been volunteering in schools on an informal basis when, around three years ago, he started to work with a client who had a number of STEM Ambassadors themselves. Realising that the STEM Ambassador programme offered Steve a way to formalise his work with schools, he applied to his local STEM Ambassador Hub in 2019 and completed his induction and DBS check. Since then, Steve has been actively offering his time as a STEM Ambassador every week:



Steve Markham

"I signed up as a STEM Ambassador because I was doing it anyway! I could see that the programme would let me take part in activities that would be more wide-ranging than the volunteering I'd been doing by myself – I could see the huge range of things that STEM Ambassadors did and I wanted to get involved.

The first session I did was taking part in a careers speed dating event. **In one morning, I spoke to 200 students – more than I'd been able to work with in the previous 10 years!** Now, I try and ensure that I spend at least two hours every week running STEM activities as a STEM Ambassador.

I do it because I enjoy it – I don't need any other rewards! I enjoy finding the time to help a teacher or school with a talk, presentation or by running an activity. **I like to try and create that spark of interest in children who might not see anyone beyond their teacher, friends and parents – to give them the opportunity to have regular contact with industry.** I love to talk about what I do, what other engineers do and to generate interest.

My dad and my granddad were both engineers, but I had no idea about what that meant. I want to change that for other children. **My message is always that it doesn't matter who you are, what your background is, what gender you are – there's a career for all of us in engineering.** I want to change the perception about what engineers are, and it's slowly happening. We have more and more females in all sorts of roles and disciplines.

Recently, I did another careers speed dating event and I talked about my work with electric vehicles. A female student came to talk to me at the end, and we had a long conversation. She was really switched on – she wants to do the same sort of work. She told me she had been really inspired by what I'd shared – my job was done!

I have done a huge variety of things as a STEM Ambassador. I've done CV building work and mock interviews with older students – it's so important to give them confidence and to help them to reflect on real-life expectations of potential employers. I have run countless demonstrations in primary schools. We've done all sorts – memorably we did some great activities where we were welding with chocolate! We melted Milky Bars together and used them to create cranes, bridges and other structures. Best of all, the children could eat them afterwards!

I've delivered talks on engineering, on electric vehicles, on my career and how I got to where I am today. I've run 'dragon's den' type sessions where I ask students to come up with an idea and give them feedback. Another good session I like to deliver is all about lateral thinking: I give the young people some inanimate objects like sieves, bike wheels, a colander... and I ask them to come up with something new that they wouldn't necessarily do with that object. I get them working in groups – it's how engineers work – solving problems, coming up with whacky ideas, problem-solving, operating as a team – so they have the chance to build the softer skills too. It's not all about academic brilliance!

When I work with secondary students, I like to focus on inspiring the students about engineering. I use the mobile phone as an example, and I get them to think about all the different professionals involved in developing it. It's not just about the software or the science of the battery, but the packaging it comes in, the marketing, the sales, the advertising...



I want to show them that there are enormous career opportunities within engineering. It's not just building cars and bridges!

The pandemic had a big impact on the sorts of activities I was able to do for a while. Everything moved online. But as a result, I have built up a portfolio of over 50 videos which I now share on my YouTube channel, and they cover all sorts from technical stuff to careers information. They're good for children from primary right through to sixth form.

Sometimes during COVID I ran interactive online sessions which worked well, especially with the younger children. They come right up to the camera and ask you stuff! I enjoyed running a 'guess my job' session, where the children could ask me anything they liked, but I could only answer with a 'yes' or a 'no'. They had to figure out what I do – they loved it! Another successful session was when I ran talks about electric vehicles. Most children, by the time they leave school, will be using one. I told them about the opportunities and challenges in the industry and it generated so many questions. Young people are so switched on about this – they understand the issues relating to energy generation, recycling, net zero. It's very rewarding!"

Making an impact

"I am immensely proud that in 2020, I was nominated, and then won an award, for being an **Inspirational STEM Employer** as a result of my volunteering work as a STEM Ambassador. I'd only been doing it for two years at that point, but it showed that STEM Learning respected what I was doing and saw it as great work. My local STEM Ambassador Hub also gave me a special recognition award for having made an **outstanding contribution to the north-east** – and I think this is a great reflection of the impact I'm trying to have.

There are now a number of schools who will contact me directly to ask for me to deliver STEM Ambassador activities. I've developed strong relationships with them, and I think this is important. I do a lot of repeat visits. For example, I am judging two events at schools I've given talks to. I've already been to them to give a talk to young students about electric vehicles who were then given a battery and an electric motor. Then they had to go away and design their own vehicle. We started the work in the middle of last year and it'll come to its conclusion soon when they launch their vehicles in the playground.

I love delivering face-to-face activities, but there is a lot of value still in running virtual sessions too. Sometimes I've been able to talk to four classes of students at once – all I need is for the teachers to help relay the students' questions to me and to manage their interaction. But it enables me to reach more people at once.

The only problem I have is that because there's just me, I have to fit my STEM Ambassador volunteering around my client work, and the worst thing for me is to have to say no to someone!

I've formalised my volunteering within my business by writing it into my corporate social responsibility policy. It's a way for me to publicly show my commitment to providing support to schools both locally and nationally, and my goal is to deliver 100 hours of STEM activities a year now.

I promote my STEM Ambassador work on my website and YouTube channel, but I also try and encourage other businesses to take part. I'm working with a sports car manufacturer at the moment, and I am hoping to invite some local schools in to their premises for a talk. I want to try and elevate the profile of what the business does and to inspire more students at the same time.

Anyone who works in STEM would find being a STEM Ambassador invaluable. Once you realise how it works and that you can reach 500 children in one morning – you will see how you can get such satisfaction from being part of the programme!

Reflecting on all the activities I've run, there is honestly nothing that I'd not repeat. I get so much out of being a STEM Ambassador too – it's beneficial for my self-development and self-improvement. I have no intentions of stopping!"

How to get involved

If you have been inspired by how STM Quality supports the learning and development of young people across the UK and you'd like to know more, please contact us at employer@stem.org.uk or visit stem.org.uk/stem-ambassadors/partner-info

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