



# STEM Education Impact Report 2018



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# Foreword

We are in the midst of a global skills crisis. A recent report published by Dell Technologies says that 85 per cent of the jobs that will exist in 2030 haven't even been invented yet. Technology and innovation is disrupting the market and the demand for digital and technical roles to support this evolution is increasing. However there is a severe shortage of skilled graduates to meet this changing demand that we must address as an engineering industry to ensure there is a pipeline of talent to safeguard our future infrastructure.

Doom and gloom? Not entirely. We are already seeing a shift in momentum with increased focus on the STEM curriculum and related careers from the Government and leading organisations in the industry - the recent "Year of Engineering" initiative being a casing point. The key now is to build on this legacy and ensure this is the beginning of a long term investment and not just a year of activities.

Increased focus on STEM in the curriculum is encouraging but the challenge we are

hearing when talking to schools is "how do we deliver this?". Students are not short of imagination but there is a general lack of support, resources and necessary skills to deliver meaningful STEM activities which can bring this imagination to life and importantly link STEM subjects with the wide variety of roles that will be available in the future.

As a result we are seeing a drop off in students that pursue core STEM subjects after GCSE's in A 'levels and through to degree level. No more so is this prevalent than in girls, who are seemingly deterred by careers in engineering by out of date perceptions of an historically male dominated industry - much of which has been unintentionally derived from their key influencers - parents and teachers. Understandable then that only 11% of qualified engineers in the UK are female, the lowest in Europe\*. We must challenge these perceptions and demonstrate the changing landscape in engineering in order to address the gender imbalance within the industry



All of which is why RS Components is committed to "Inspiring the next generation of engineers". You will see within this report the activities we have been proud to develop over the last 12 months to achieve this ambition and some of the exciting developments we have planned for 2019 and beyond.

**James Howarth**  
**Head of Education Strategy EMEA**

*\*Women's Engineering Society 2017 survey*

St Swithuns' Titan II Visit May 2018



## In December 2017, RS Components implemented a STEM education strategy to raise awareness and demonstrate our commitment to inspiring the next generation of engineers.

Science, Technology, Engineering and Maths (STEM) are the core component subjects, which will affect the most crucial industries in the UK.

The landscape and future of technology will change drastically over the coming years; by educating a younger audience now on the impact engineering and technology will have on them and industry will enable young people to consider pursuing careers within this sector.

The UK is currently faced by a shortage of skilled engineers, so much so, it has been estimated by EngineeringUK, by the year 2024, the UK will need 186,000 skilled engineers annually to keep up.

Now more than ever, having a structured, engaging and inspiring engineering STEM campaign for RS Components is of great importance.

There are improving perceptions surrounding engineering that RS are able to capitalize on in this strategy;

- 51% - Is an increasing rate representing 11-16 year olds, who would consider a career in engineering.
- 96% of teachers would recommend a career in engineering to their pupils
- In 2015/2016, there was a 5% growth in HE engineering applicants.

By engaging with a STEM audience through education, encouragement and inspiration, RS will play a crucial part to ensure that appropriate future global talent exists, not only for RS but also for the wider engineering and technology industries.

The core STEM objectives of RS Components are to;

- Provide educational support - encouraging more young people to study STEM subjects.
- Encourage and inspire more young people to pursue STEM-related careers through measureable experiential engagement
- Position ourselves as an industry thought leader - by addressing the current national skills shortage, specifically in engineering.
- To grow a pipeline of talented individuals for the engineering and technology industries.
- Build strategic external partnerships to deliver STEM activities globally





# Our Impact in 2018

**5** Major Exhibitions in Education & STEM in 2018


**35,000**   
Under 18's boarded Titan II through 2018



Industry Awards for Education & STEM Activity in the UK



Education & STEM Events with Titan II

 **175%**  
increase of RS STEM Ambassadors in 2018 (40 to over 110)

 **47,000**  
young persons engaged with RS and its educational partners in 2018

Social engagement for RS STEM Education Content;

Reach:  
**1,587,311**

(Number collective from attendance at BETT, Big Bang, GWD, KX, NSL)



**Learnings from RS Components Social Audience;**  
There is an overall positive sentiment towards RS' advancements in bringing STEM and innovation to the wider public, especially as it introduces schools and children to the innovation truck.





# Titan II

Titan II is our mobile innovation centre which provides unique and interactive experiences that demonstrate what its like to be an engineer today and tomorrow.

With over 70M<sup>2</sup> of exhibition space, Titan II showcases the latest technologies including Raspberry Pi, 3D printing, Robotics, Internet of Things, Thermal Imaging, Virtual Reality and Augmented Reality.

In 2018 Titan II travelled over 17,000 miles across the UK and beyond visiting schools, colleges, universities and engineering customers.

## About the truck



Vehicle Weight:



Interactive and educational product displays

External



full colour video screen



Onboard meeting facilities



Wi-Fi Enabled

Self Powered by on-board generator



## Locations 2018

West Midlands UTC • Rugby High School • Bangor University • Heriot Watt University • UWS Paisley • Aberdeen Science Centre • Robert Gordon University • Aberdeen University • QintetiQ • Trojan Electronics • Kingspan • Plastipak • Camlin Technologies • BETT Show • National Manufacturing Expo Dublin • Landrover 4x4 Challenge • Big Bang Silverstone • UTC Plymouth • Samuel Whitbread Academy • Huntingdon Regional College • Cambridge College • Prospects College • Devonport Dock; Bloodhound Finals • Infinus Brughborough • Aardagh metal • QintetiQ • Big Bang National • Landrover 4x4 Challenge • Drivers and Controls • Big Bang Weston Super Mare • St Swithuns • Menai Science Park • Beamont College • Wabtec • Pepsico • Daresbury STFC • Modelez • LE Pritchett • Camden Group • Glasgow Science Centre

• Boston Scientific • Valeo Vision • University of Northampton • Tresham College, Kettering • Webber Independent School • Leeds University • Lear Corporation • Humberdie Engineering Training Association • Engineering KX, St Pancras • Chace Community School • Sutton Grammar School • Prince William School • Bury Edmunds County Upper • GE Healthcare • Devonport Royal Dockyard • QinetiQ, Portsmouth • QintetiQ, Boscombe Down • Addo Food Group • Bosch • Yamazaki Mazak • CSM Bakery • Yelo Ltd • New Scientist Live • King Edward VI Camp Hill School for Girls • High Tunstall College of Science • Nissan Motor Manufacturing • Greencore Grocery • Peterborough STEM Festival • Southern Water • QintetiQ Farnborough • Industrial Area Industriepark Höchst, Frankfurt • Karlsruher Institut für Technologie, Karlsruhe • Electronica, Munich • Holy Trinity Academy • Prestfelde School • Nuneaton Academy • Goodwin Engineering • Wood Group



2018. THE YEAR OF



## RS Components and Year of Engineering 2018

The Year of Engineering is a government led campaign launched in November 2018, with an aim of raising awareness of STEM subjects and celebrating the world of engineering to inspire young people to enter the industry for the whole of 2018.

In January 2018, RS were invited to join the Year of Engineering Stakeholder Advisory Board.

The board's objectives were;

1. To strengthen the relevance and success of the campaign through provision of the Board's varied professional expertise and experience.

2. To foster greater integration and communications between the organisations toward the common aim in 2018 and beyond of improving the engineering talent pipeline.
3. To inspire members to be ambassadors for the Year of Engineering
4. To help identify and manage the legacy of the Year of Engineering beyond 2018.

"Engineering: Take a closer look" is the government campaign continuing the success from the Year of Engineering in 2018, of which RS will be involved in.



Children engaging with IET, First Lego League in London



## Case Study; The Big Bang, March 2018

The Big Bang is the largest celebration of science, technology, engineering and maths for young people in the UK.

The Big Bang UK Young Scientists and Engineers Fair is an award-winning combination of exciting theatre shows, interactive workshops and exhibits, together with careers information for school groups and families,

provided by a wide range of people who are working in the field.

Over 4,800 students boarded Titan II across the four days, where they were able to meet RS colleagues and learn with regards to engineering tools and technology used today.

The event was a key exhibition for Year Of Engineering 2018.

## Case Study; Engineering Kings Cross, July 2018

Engineering Kings Cross was RS' first outdoor public event showcasing our support for Year of Engineering.

The 5 day event took place near the RS head office in St Pancras Square, London.

Over 3,500 visitors engaged with our activities, including Titan II, First Lego

League, Clay Modelling and Barclays Digital Lab Robo races.

The event was supported by over 65 RS colleagues and over 30 external volunteers from the supporting organisations to the event.



# Building Partnerships

We have engaged with a high number of organizations to support the development of the Education & STEM Programme in 2018 and will be working with new partners as we enter 2019 and expand into EMEA.



## Partner Projects; #GirlsWithDrills

In the summer, we ran our first Facebook Live from Geddington primary School in Corby to promote a #GirlsWithDrills Interactive Workshop.

The workshop taught children how to use drills and other engineering tools in order to help improve both their skills and confidence, whilst also promoting equality and inclusion

The live received over 11,000 views and reached over half a million people.

Kisha Bradley, who runs the initiative, is a key partner of RS in STEM. An engineer and activist for diversity in innovation, Kisha plays a key part in our campaign to celebrate Women in Engineering.



## Partner Projects; Kids Invent Stuff – Rube Goldberg

It's always said that two heads are better than one – so what could be possible with hundreds? The creators of popular YouTube channel Kids Invent Stuff, Ruth Amos and Shawn Brown, wanted to find out. Since being a finalist in the 2018 Electronics Weekly BrightSparks programme for creating the StairSteady, inventor Ruth has continued pushing boundaries in the engineering industry.

RS partnered with Kids Invent Stuff on their mammoth project to build a large Rube Goldberg Machine. A device or apparatus which uses a chain reaction of events to achieve a really simple task in an overcomplicated way. Ruth, Shaun and their build team took on the DIY challenge with the biggest task yet for Kids Invent Stuff, to capture the interests of young people and inspire the next generation of engineers.

After working tirelessly for a week to set up and test all the individual ideas, with the support of volunteers from RS and the donation of RS products to help build it, the challenge was a success. Ruth and Shawn even appeared on the BBC to promote their event live on national TV!

## Partner Projects; Ambionics

Ben Ryan, founder and CEO of Ambionics, designed a prototype arm that could be worn from a young age after his son lost his arm soon after birth in March 2015.

Although not an engineer by trade, Ben's determination to help his son inspired him to design prototype arms that could be worn from an earlier age. His aim was to create a light, attractive, customisable limb - produced with a 3D printer.

Ben is a key partner of RS in STEM, and through telling his story and journey with RS to students around the world has helped inspire many to attempt the impossible.

Ben will feature heavily in our upcoming Educational Project launching Spring 2019.



## 2018 Partners





# RS STEM Ambassadors



STEM Ambassadors are volunteers from a wide range of science, technology, engineering and mathematics (STEM) related jobs and disciplines across the UK.

They offer their time and enthusiasm to help bring STEM subjects to life and demonstrate the value of them in life and careers.

STEM Ambassadors are an important and exciting free of charge resource for teachers and others engaging with young people inside and out of the classroom.

STEM Ambassadors not only volunteer within RS but are able to support many events in their local communities, from co-ordinating STEM activities in schools and clubs, to providing careers advice and mentoring.

We are incredibly grateful for the hard work and commitment shown by our network of RS STEM Ambassadors.

From hosting their own education events with Titan II, supporting external STEM Learning events in their communities or committing to a 3-4 day RS Exhibition, we could not achieve all we have in 2018 without them.

2018 saw the highest enrollment for STEM Ambassadors in the business, since January, the number of volunteers grew 40 to over 100, and it is still rising.

## Spotlight: STEM Support Day, November 2018, Woking

Jo Faulkner and Kevin Chapple supported Bishop David Brown School with their High School careers day.

On the day they met with dozens of students to highlight to them the possibilities of a career at RS.

On the day we ran a Pitch2Win competition where one student would win a Pi Top, entries had to state their interest in coding and their prediction of technology use in the future.



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**When and why did you decide to become a STEM ambassador?**

As I am a mother of 4, I decided to join the STEM programme last summer, to give something back to my local community, and support young people like I want my own children to be supported – giving them ideas, advice and showing them that enthusiasm and belief in themselves and what they do will help them succeed in life

**Collette Severn,**  
PR and Marketing Executive

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**What do you, personally, get out of being a STEM ambassador?**

I get an enormous amount of self-satisfaction knowing that I am helping to spark the imagination of the engineers of tomorrow and it is very rewarding personally to see the enthusiasm this can bring to a younger generation - I am really looking forward to meeting them as my journey with RS continues forward – hopefully as future customers.

**Alex Clark,**  
Key Account Manager

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**What are you looking forward to after becoming an approved STEM ambassador?**

Continuing to encourage interest and engagement in the STEM disciplines and sparking some career ideas for future generations to consider.

**Joseph Da Silva,**  
Chief Information Security Officer

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# Looking ahead

2018 was a great year for RS in demonstrating our commitment to inspire the next generation of engineers

In 2019 we will further this commitment by developing educational content and activities which can be used to compliment lesson plans for schools to deliver STEM based curriculum. These activities will target students at key stages 2 & 3 and will comprise of free to download lesson plans built around key STEM themes and supported by RS technology. These themes were developed in conjunction with teachers, students and industry experts during workshops in 2018 and we look forward to launching this initiative across the UK in Spring 2019 .

RS will also focus on collaborating with new and existing partners to continue to deliver exciting STEM projects in the UK and across the world.

As we move into 2019 we are looking forward to working with educators, partners and organisations globally to encourage, engage and inspire young people into STEM careers.





A young girl with brown hair is wearing a black VR headset and holding a black VR controller. She is wearing a pink off-the-shoulder top with lace trim and a silver watch on her left wrist. The image is overlaid with white diagonal lines and geometric shapes in red, purple, and blue.

## Contact Details

For more information regarding  
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