



In partnership with



## ***Impact Report 2018***

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## Introduction

Engineering is of vital importance to the UK's economy but engineering skills are in short supply. The latest demand forecasts, presented in EngineeringUK's 'The State of Engineering' Report 2018, highlight the need in the UK for 124,000 Level 3+ 'core' engineering roles per year (core being those requiring consistent application of engineering skills to execute effectively e.g. civil or mechanical engineer) and, an additional 79,000 Level 3+ 'related' engineering roles (related being those that require a mixed application of both engineering and non-engineering skills e.g. architect) per year to 2024.

3% of demand for engineering roles in the UK are expected to arise in the North East with around 175,000 Level 3+ jobs expected in the region between 2014 and 2024 – 35% engineering occupations.

The largest flow of newly skilled talent into the engineering workforce comes directly from education. Between each educational stage, there is potential for 'leakage' from the pipeline, as individuals make voluntary decisions about their progression.

While trends in STEM education are broadly positive. Developing the pipeline to address the skills shortage will continue to be a challenge for the Engineering Community.

Every year, EngineeringUK runs the Engineering Brand Monitor, a nationally representative survey of young people, the general public, and teachers on their perceptions of STEM. Results indicate young people's perceptions of engineering are improving. Nationally (2017), 51% would consider a career in engineering compared to 40% in 2013 and 45% thought engineering was a desirable career, compared to 35% in 2013. In the North East, a slightly higher proportion (57%) of 11-19 year olds would consider a career in engineering than in the UK as a whole, and about the same proportion (45%) view a career in engineering as desirable.

However, we consistently find that while the majority of young people have positive views of engineering - though not as positive as science or technology – their knowledge of what the profession actually entails lags behind this positivity.

56% of 11 to 19 year olds in the North East said they viewed engineering positively – but 71% (39% at the UK level) admitted they knew only a little or almost nothing about what engineers do.

Therefore, a key challenge for us is to convert this 'in principle' interest to knowledge and conscious desirability.



In a drive to inspire the next generation of North East engineers, Bring it On! showcases the very best of North East engineering to young people (aged 9-14) from across the region.

The zoned event provides students and teachers with the opportunity to meet and engage with engineers from companies across the following sectors:

- Automotive/Rail/Aerospace
- Creative & Digital Technology
- Civil/Structural/Construction Engineering
- Subsea/Oil & Gas/Renewables/Energy
- Chemicals & Processing

It also presents an opportunity to engage with representatives of the Professional Engineering Institutions through 'Engineering your Career' areas housed in each zone, where students can gather information about pay, job and life opportunities, types of engineers, important school subjects and the various routes into engineering.

This year, in a bid to simplify the STEM landscape for schools and businesses, Bring it On! was run in partnership with Big Bang North East. The collaboration with Big Bang presented young people and teachers with an opportunity to participate in a wide variety of more generic STEM engagement opportunities as part of their Bring it On! experience, and enabled young people from across the region to exhibit and present their science and engineering projects as part of the Big Bang UK Young Scientists and Engineers Competition. It is worth noting here that there were more entries to the competition in the North East than any other region across the UK in 2018.

This report provides analysis and evaluation on the Bring it On! /Big Bang event that took place on the 3<sup>rd</sup> & 4<sup>th</sup> October 2018 at the Beacon of Light in Sunderland.



## Evaluating the event

The student experience was evaluated using EngineeringUK's Common Evaluation System the 'Engineering Brand Monitor' (EBM). Teacher and Exhibitor feedback was gathered via questionnaires completed at the end of each day.

## Engineering Brand Monitor Evaluation

The Brand Monitor is an annual, nationally representative survey of perceptions of engineers, engineering and STEM among the general public, educators and pupils. It provides an understanding of the environment in which we operate and produces comparable results year-on-year. EBM sets a baseline, or benchmark, for outreach programme evaluations, allowing us to measure and demonstrate the impact that programmes are having in a robust and trusted manner.

## Methodology

The student evaluation results are compiled from pre and post event EBM questionnaires, completed by a cohort of students on the 4<sup>th</sup> October 2018.

The pre questionnaire featured three core knowledge and perceptions questions taken from the full EBM questionnaire:

- *How much do you know about what people working in these areas do? (Science, Technology, Engineering)*
- *How positive or negative is your view of the following? (Science, Technology, Engineering, Maths)*
- *How desirable do you believe a career in the following areas to be? (Science, Technology, Engineering)*

To establish a baseline for existing knowledge and perceptions before taking part, students completed pre questionnaire at the point of registration, in advance of any activity taking place. The post event questionnaires were completed at the end of the day, prior to departure.

Each of the core questions requires students to respond on a scale of 1-5. Analysis of the results focuses on number of positive responses to each row of each individual question. Positive responses are numbers '4' and '5' on the scale combined (highlighted in green in the example below):

<b>EXAMPLE Q3</b>	<b>How desirable do you believe a career in the following areas to be? Please choose a number 1-5. Please tick one answer for each row.</b>				
	PLEASE TICK ONE BOX ONLY				
	Not at all desirable				Very Desirable
	1	2	3	4	5
Science	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Engineering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Results are calculated by counting the number of times pupils ticked options '4' and '5' in each scale/row, divided by the total number of respondents (fully completed questionnaires only) and multiplied by 100 to obtain the figure for the percentage of positive responses (rounding the first decimal place up or down to a whole number).



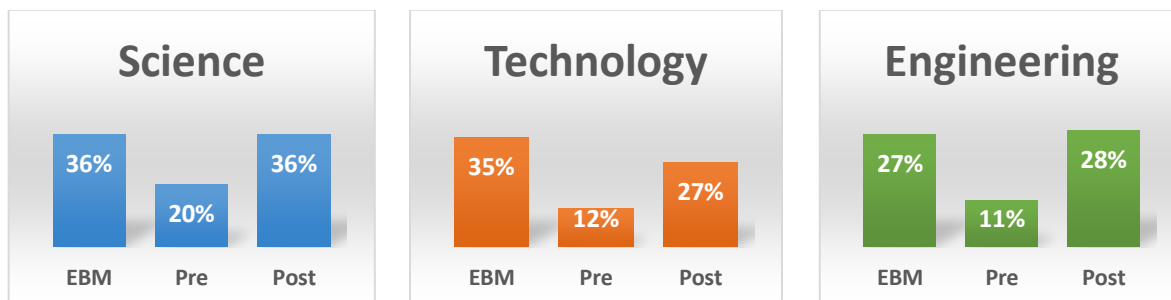
## Findings

### Student Evaluation

The following analysis of the findings illustrates the combined pre and post evaluation results from a cohort of randomly selected students from schools across the region.

Each of the charts below illustrates 3 sets of data, comparing students' pre & post event core knowledge and perceptions responses alongside the EBM 2017 national data set.

#### Question 1 - How much do you know about what people working in the following areas do?



Combined results from the pre event questionnaire, assessing the students' baseline knowledge about what people working in Science, Technology & Engineering do, reflect negatively against the EBM 2017 national data set, indicating low levels of understanding about what people working in all three areas do.

In comparison to the pre event data, the post event questionnaire results indicate the event had a very positive impact on increasing students' knowledge and perceptions about what people working in Science, Technology and Engineering do. Respondents' more informed post event results show:

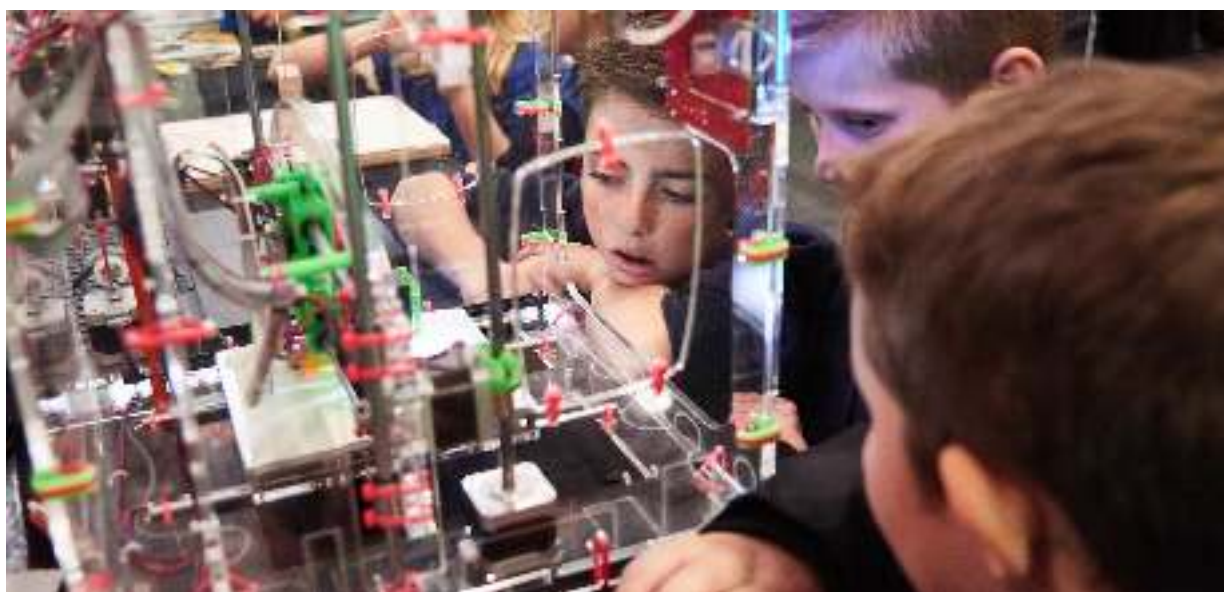
**80%** increase in their knowledge and understanding about what people working in Science do.

**125%** increase in their knowledge and understanding about what people working in Technology do.

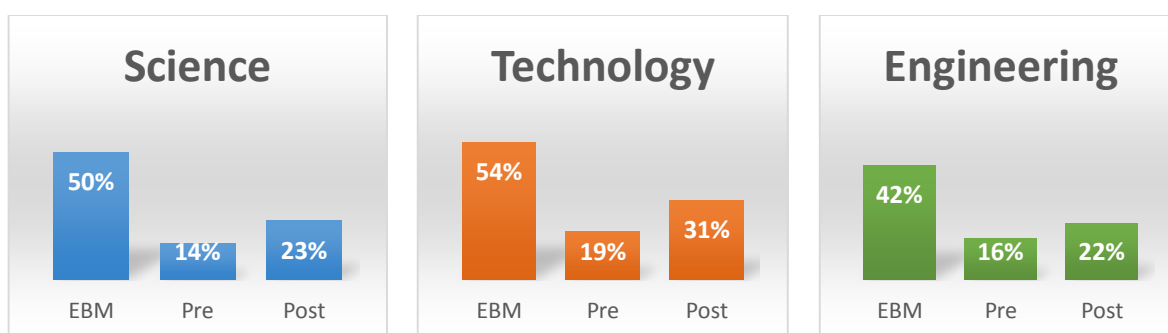
**154%** increase in their knowledge and understanding about what people working in Engineering do.

The increase in knowledge and understanding about engineering is particularly pleasing. The event was designed to showcase engineering to young people and the results indicate our exhibitors hit the mark in terms of content, providing a very positive engineering focused learning experience for participants.

However, the Student's post event knowledge and understanding about what people working in Technology do still falls below the 2017 data set of their peer group nationally. This presents an opportunity for future events to enhance the use of Technology across all sectors of Engineering.



## Question 2 – How desirable do you believe a career in the following areas to be?



Combined results from the pre event questionnaire fall below the results recorded in 2017 by the respondents' peer group nationally, indicating a lack of awareness, understanding or interest about careers in all three sectors amongst survey participants before taking part.

In comparison, post event results indicate the event had a discernible impact on increasing students' desirability for careers in Science and Technology and Engineering. Results show:

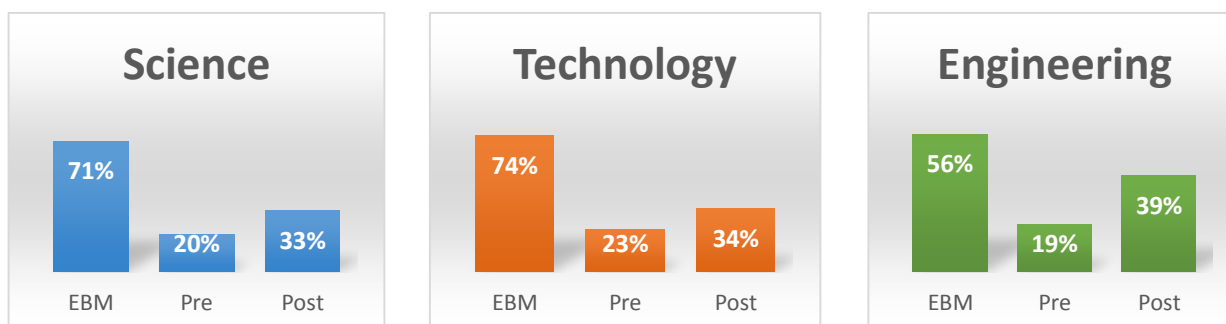
**64%** increase in their desirability for a career in Science

**63%** increase in their desirability for a career in Technology

**37%** increase in their desirability for a career in Engineering.

Post event results for all three sectors do still fall below figures set by their peer group nationally. However, the opportunity to participate in such an inspirational event has quite evidently sparked interest and awareness about the benefits of the amazing careers on offer across all three sectors.

## Question 3 – How Positive or negative is your view of each of the following?



Combined results from the pre event questionnaire assessing positive/negative baseline perceptions of Science, Technology, Engineering and Maths fall below the EBM 2017 data set. Another indicator that their knowledge and awareness about the importance of STEM subjects to careers lags behind that of their peers in other parts of the UK.

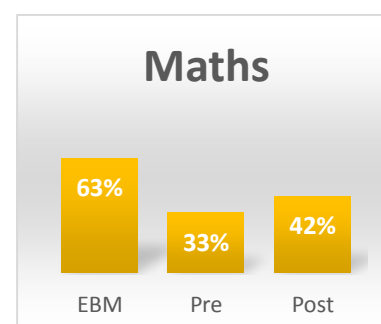
Across the board, post event questionnaire results indicate, the event had a positive impact on increasing students' positive perceptions about Science, Technology, Engineering and Maths, particularly for Science and Engineering. Results show:

**65%** increase in their positive perceptions about Science.

**48%** increase in their positive perceptions about Technology.

**105%** increase in their positive perceptions about Engineering.

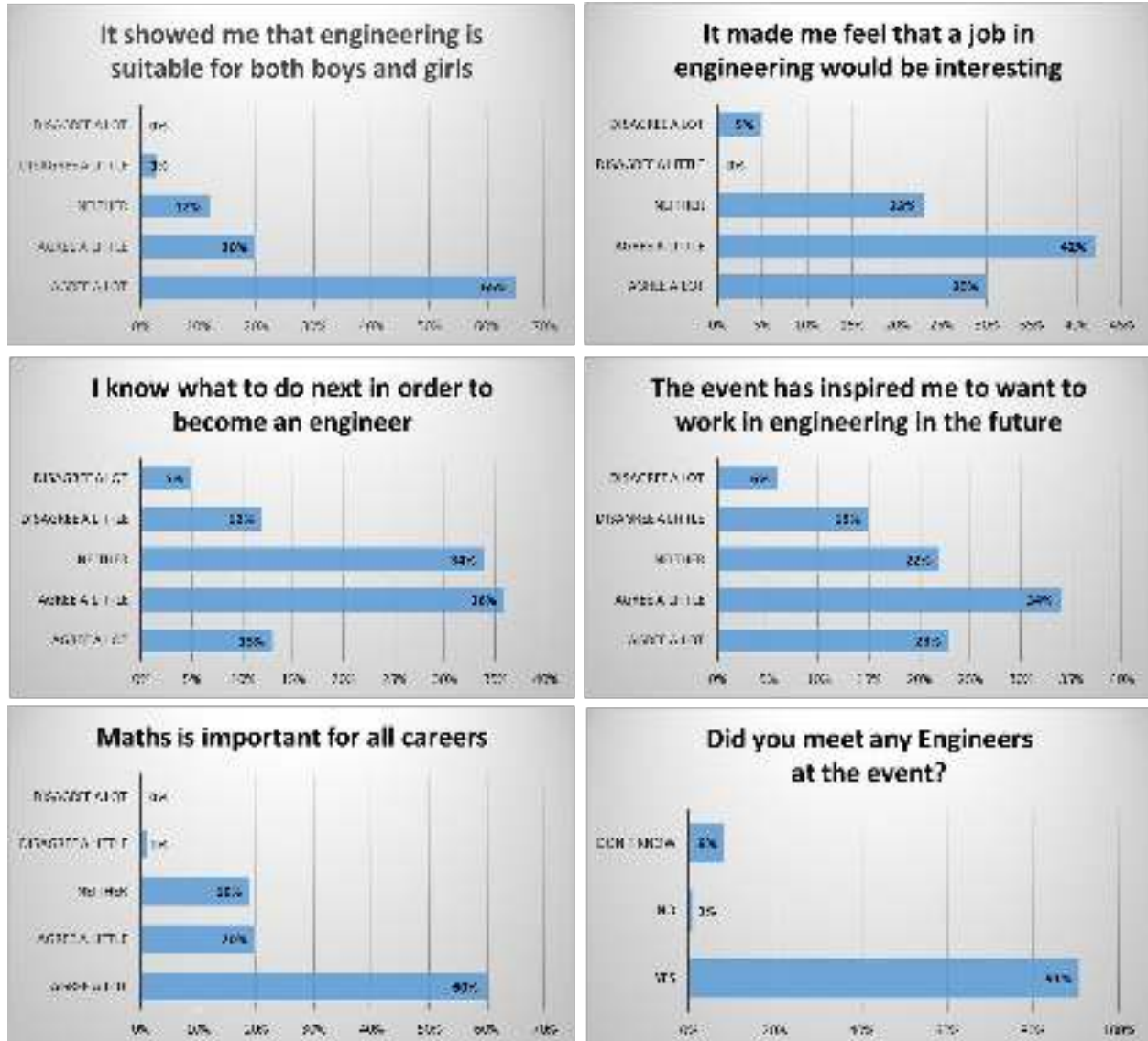
**27%** increase in their positive perceptions about Maths.



### Additional Post Event Questionnaire Results (overall experience of the event and views on STEM)

Each of the charts below illustrates combined post event questionnaire results of our survey respondents.

**Question 4 - Students were asked to what extent they agreed with the following statements about the event. They were also asked if they had met any engineers.**



'The State of Engineering' 2018 highlights that, while females comprise 47% of the UK workforce, just 21% of those women work in the engineering sector, of which only 12% are engineers and technicians. Also, the proportion of women at each stage of the pipeline narrows through the educational journey – this is particularly pronounced at apprenticeship level, where just 8% of engineering apprentices in England were female in 2015/16.

Findings from EngineeringUK's EBM suggest that these gender differences in awareness, perceptions and interest start at a young age. For example, when asked whether they thought they could become an engineer if they wanted to, 30% of girls said no, compared to just 19% of boys and, when asked how much they would like to be an engineer 46% of girls aged 7-11 stated "not at all" or "not very much", almost twice the proportion of boys (25%).

A key driver for Bring it On! is to inspire girls, as well as boys, about careers in engineering. Post event evaluation results indicate a positive impact, with 65% of students agreeing 'a lot' that the programme showed them engineering is suitable for both boys and girls and 72% of the students agreeing, to some extent, that the programme made them feel a job in engineering would be interesting.

Bring it On! did impart a level of knowledge and understanding to students about routes into engineering with 49% of the students agreeing, to some extent, that they know what to do next in order to become an engineer. However, only 13% of the students 'agree a lot' with this, highlighting the need to place more emphasis on routes into the sector at future Bring it On!/Big Bang North East partnership events.

In terms of increasing desirability to want to work in engineering in the future, 57% of the students agreed, to some extent, that the event has inspired them to want to do so.

Overall, the results indicate a good level of awareness among respondents about the importance of maths to careers with 80% of the students agreeing, to some extent, that maths is important for all careers. The exhibition facilitated a great opportunity for young people to meet face to face with engineers and 91% of students recognised that fact.



Students provided some additional comments about their Bring it On!/Big Bang North East experience:



'I would come back!'

'I really enjoyed trying the different experiments.'

'Loved the VR stuff and the general enthusiasm chatting to Ubisoft! Learning about the under-sea wiring and the company are in Hartlepool where I am from!'

'I enjoyed the event because I learnt more about jobs I could do in the future.'

'I was most interested in the engineering and technology.'

'I enjoyed working with electronics and meeting the people at the event and it is better than normal lessons at school.'

'I think the event was successful as I enjoyed it a lot. Next time, give us more time.'



'I enjoyed learning new things and it was interesting to hear and look at all the different jobs you can do.'

'I have really enjoyed this event and would come here again...4.5 stars.'

'I really liked the event because it was interesting and fun. Plus the people were really nice and there was multiple things to do.'



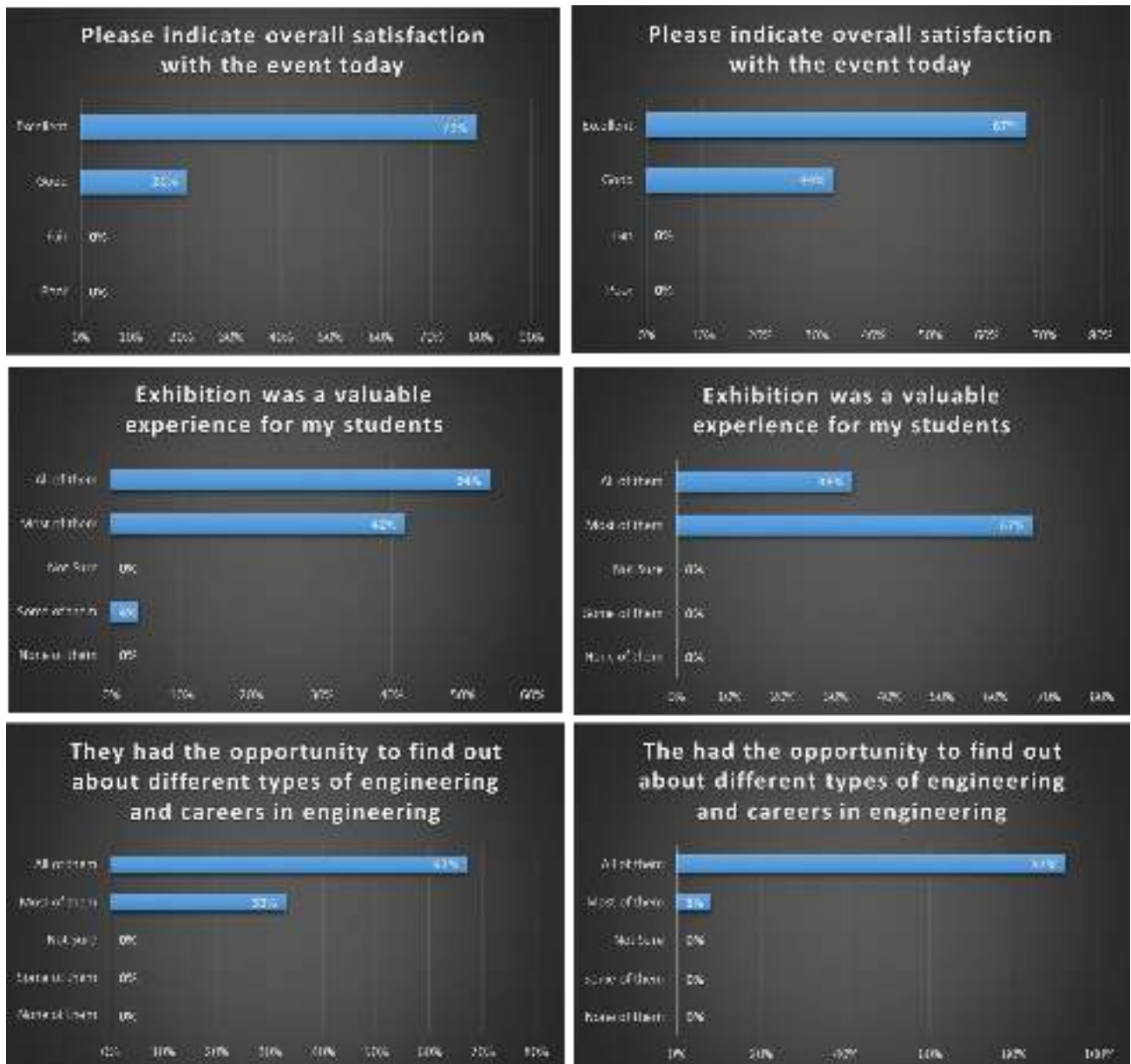
'The people were open to any questions, gave detailed answers and were very friendly.'

'I enjoyed it, it was fun and interesting and really thoughtful of the people running it to do this free for schools.'



## Teacher Evaluation (a)

Teacher feedback forms were handed out to staff from a variety of schools over the 2 day event and to a number of Home Educators. Feedback from primary school teachers is illustrated in the charts on the left-hand side of the page, feedback from secondary school teachers in charts to the right.



100% of primary school teachers and 100% of secondary school teachers rated the event, overall, as good or excellent and a majority indicated that the event was a valuable experience, with 100% of primary school teachers and 100% of secondary school teachers agreeing that the event provided most/all of their students with the opportunity to find out about different types of engineering and about careers in the sector.

Teachers provided some additional comments in response to the questions above.  
Comments included:

*'Much better than last year!' - Primary*

*'Overall, it was excellent – both people and activities.' - Primary*

*'Opened children's minds, got them thinking about STEM related activities.'* - Primary

*'The VR headsets were winners with the children. They were engaged from start to finish.'* - Primary

*'A few chairs for tired teachers would be the only improvement I could suggest 😊'* - Primary

*'I would like to bring more children to the event.'* – Primary

*'A fantastic day which has really inspired our children.'* - Primary

*'All exhibitors were good and the adults enthusiastic and approachable.'* - Primary

*'Such a valuable experience for both students and staff. We have been so lucky to have received tickets.'* - Primary

*'Engineers were great and had chosen some interesting and interactive activities.'* - Primary

*'Girls have had a great overview of engineering.'* - Primary

*'The exhibitors were relevant, child friendly and inspiring.'* - Primary

*'It was brilliant, several students have said, "This is the best trip ever!"'* - Primary

*'So many learning opportunities for the children.'* - Primary

*'Came last year and had no hesitation in coming again this year.'* - Primary

*'All the exhibitors made an effort to engage with the children. The level of engagement shown by the children was due to the interactivity of the stands and activities they could take part in.'* - Primary

*'Best things were the hands-on experiences, VR and Robotics.'* - Secondary

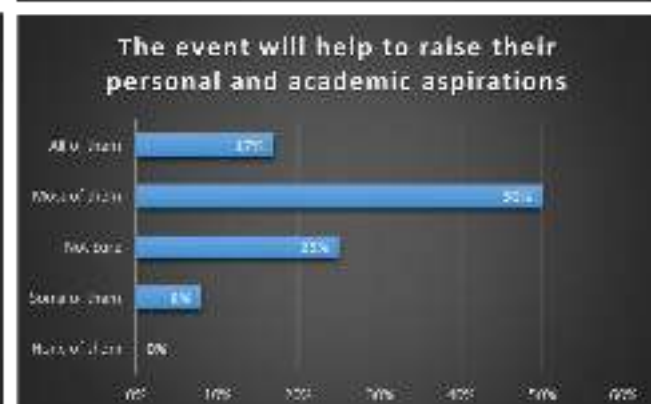
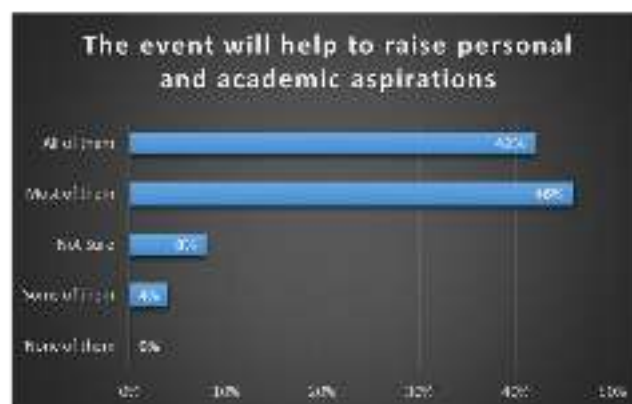
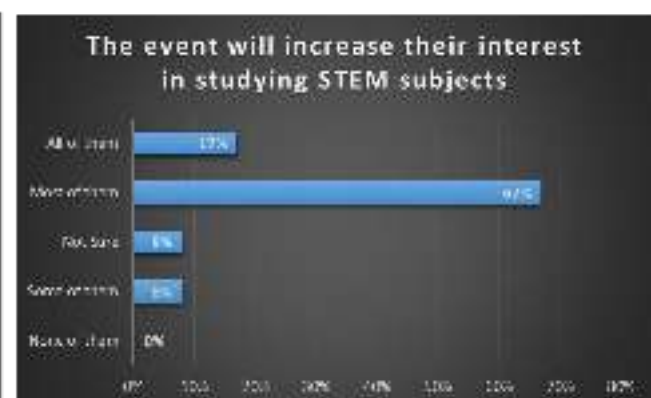
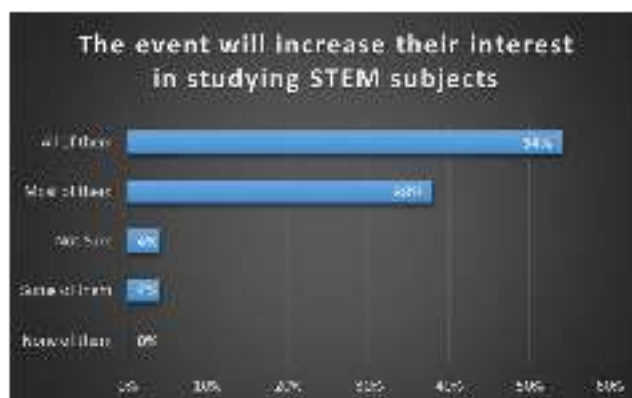
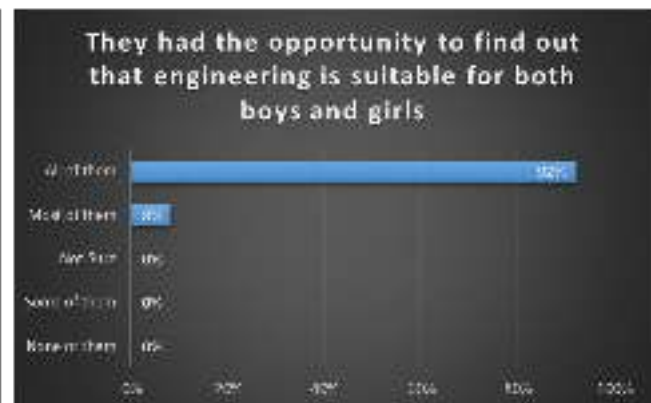
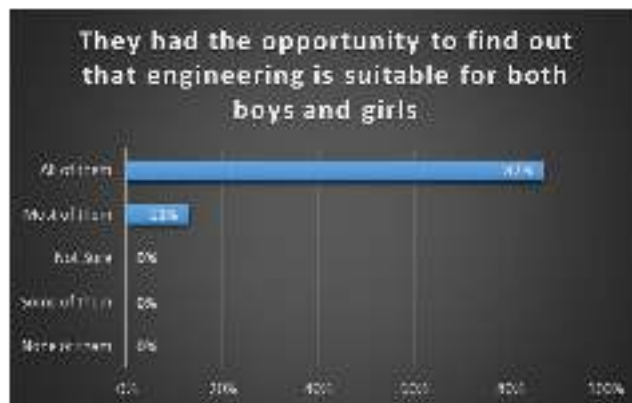
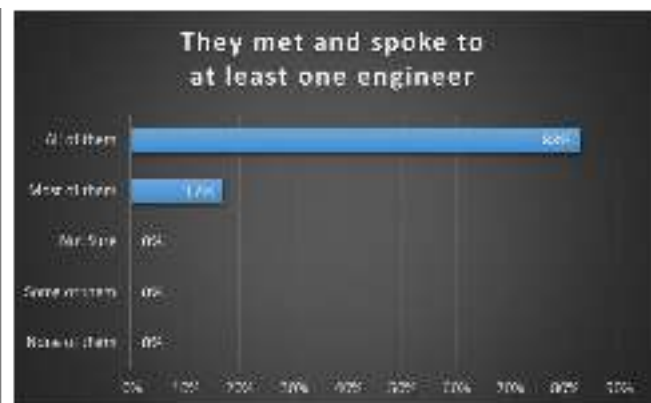
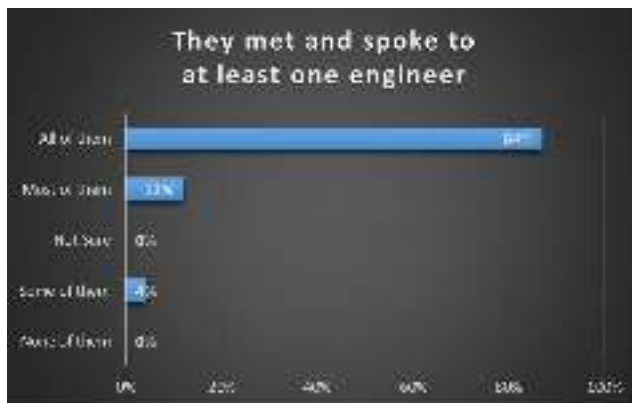
*'Well set out. A brilliant array of exhibitions.'* - Secondary

*'Lots of interactive activities – which the pupils really enjoyed.'* - Secondary

*'Fantastic event. All exhibitors were very helpful.'* – Secondary



## Teacher Evaluation (b)



Parents and teachers are well positioned to influence the educational and career trajectories of their children. 70% of young people aged 11-14 surveyed as part of EngineeringUK's EBM (2017) stated

they would consider going to parents/guardians for career advice and 66% said they would go to teachers. Yet results from the EBM indicate that knowledge of engineering is limited for many parents and teachers. While 73% of parents stated they had quite a positive view of engineering, 35% indicated they knew only a little or almost nothing about what engineers did. Only 36% expressed confidence in giving advice to their children about a career in engineering – a similar proportion to the number of teachers who said the same in the EBM 2016 (35%).

There is much work we can do as a community to enhance perceptions of the engineering profession among young people, parents and teachers. The Bring it On!/Big Bang North East event enabled young people and teachers to build their knowledge and understanding of what a career in engineering actually entails by providing the opportunity to meet a wide variety of different types of engineers and experience engagement with companies from a breadth of different engineering sectors. 96% of primary school and 100% of secondary school teachers who completed the evaluation questionnaire indicated that most/all of their students met and spoke to at least one engineer. 92% of primary and 84% of secondary teachers indicated that the event will increase most/all of their students' interest in studying STEM subjects. Teachers were also positive about the event helping to raise the personal and academic aspirations of most/all of their students, with 88% of primary and 67% of secondary teachers agreeing it would do so.

Teachers provided some additional comments in response to the questions illustrated in the charts above. Comments included:

*'Showcased different types of sectors, some of the students had never heard of.'* - Secondary

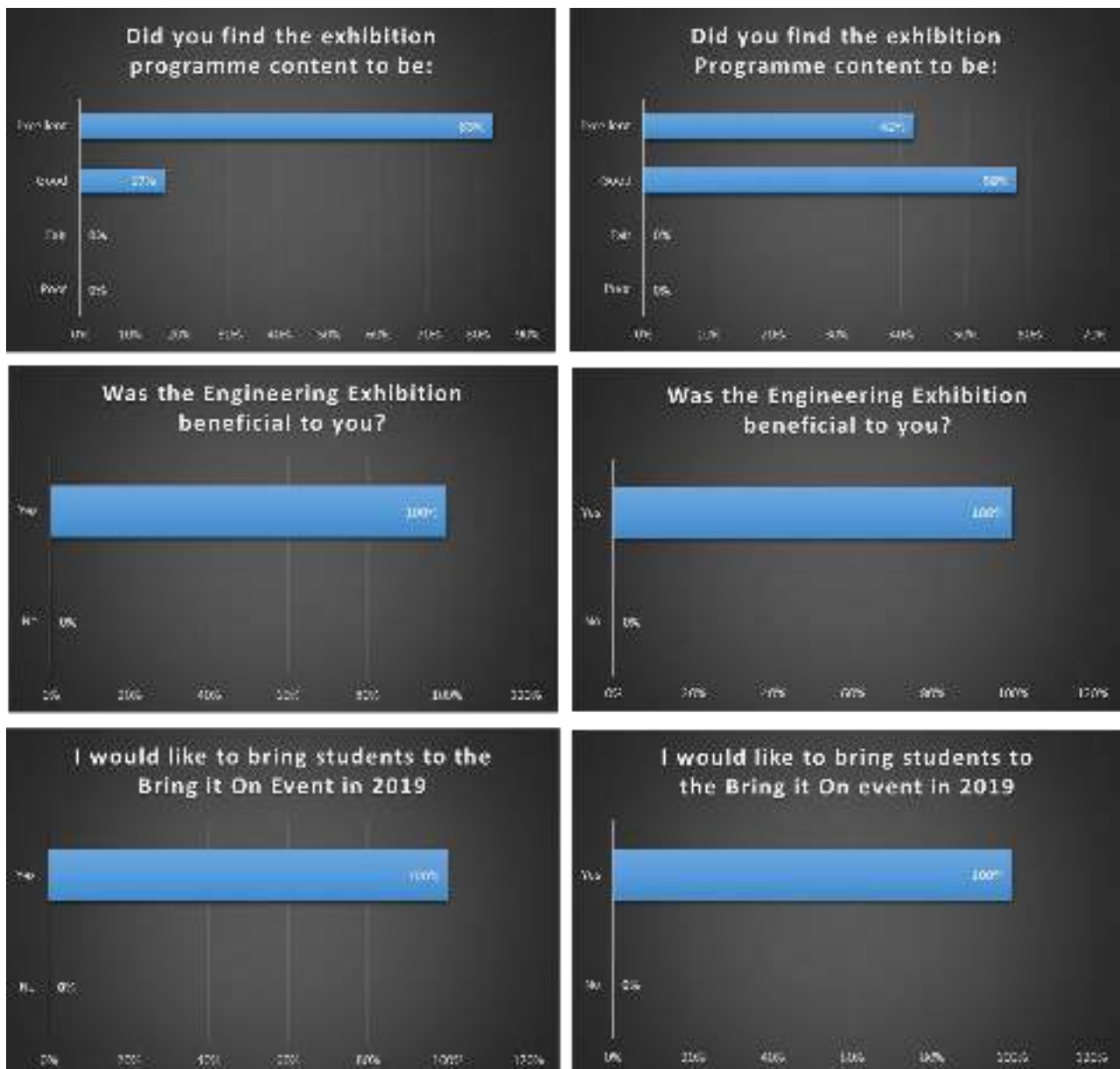
*'Children spoke to and listened to engineers.'* – Primary

*'The variety of different topics/companies/industries there was excellent.'* - Secondary

*'It helped me to further understand the role of engineering in the world and how it can offer opportunities for the pupils in our school.'* – Primary



### Teacher Evaluation (c)



Overall, feedback from primary and secondary school teachers indicates that the event was a very worthwhile experience for their students. 100% of primary and secondary teachers rated the programme content as good/excellent, 100% of teachers found the event to be beneficial to them and 100% said they would like to bring students to the event in 2019. Teachers also provided us with some useful feedback on how to improve the event in 2019.

Teachers provided some additional comments in response to the questions above. Comments included:

*'Some great contacts made.'* - Secondary

*'Different opportunities to explore further in school.'* - Secondary

*'Offered useful contacts for the future.'* – Secondary

*'Yes, but I would like to bring other children – sixth form.'* – Secondary

*'Yes, I think future students would definitely benefit.'* – Secondary

*'Making more links with engineers for school – industry connections.'* - Primary

*'Met several STEM Ambassadors and am looking to make further contact.'* - Primary

*'Very much so, gained several contacts and valuable resources.'* - Primary

*'We came last year & this year was 10x better!'* - Primary

*'Yes, a very worthwhile day – enjoyable, informative, aspirational.'* - Primary

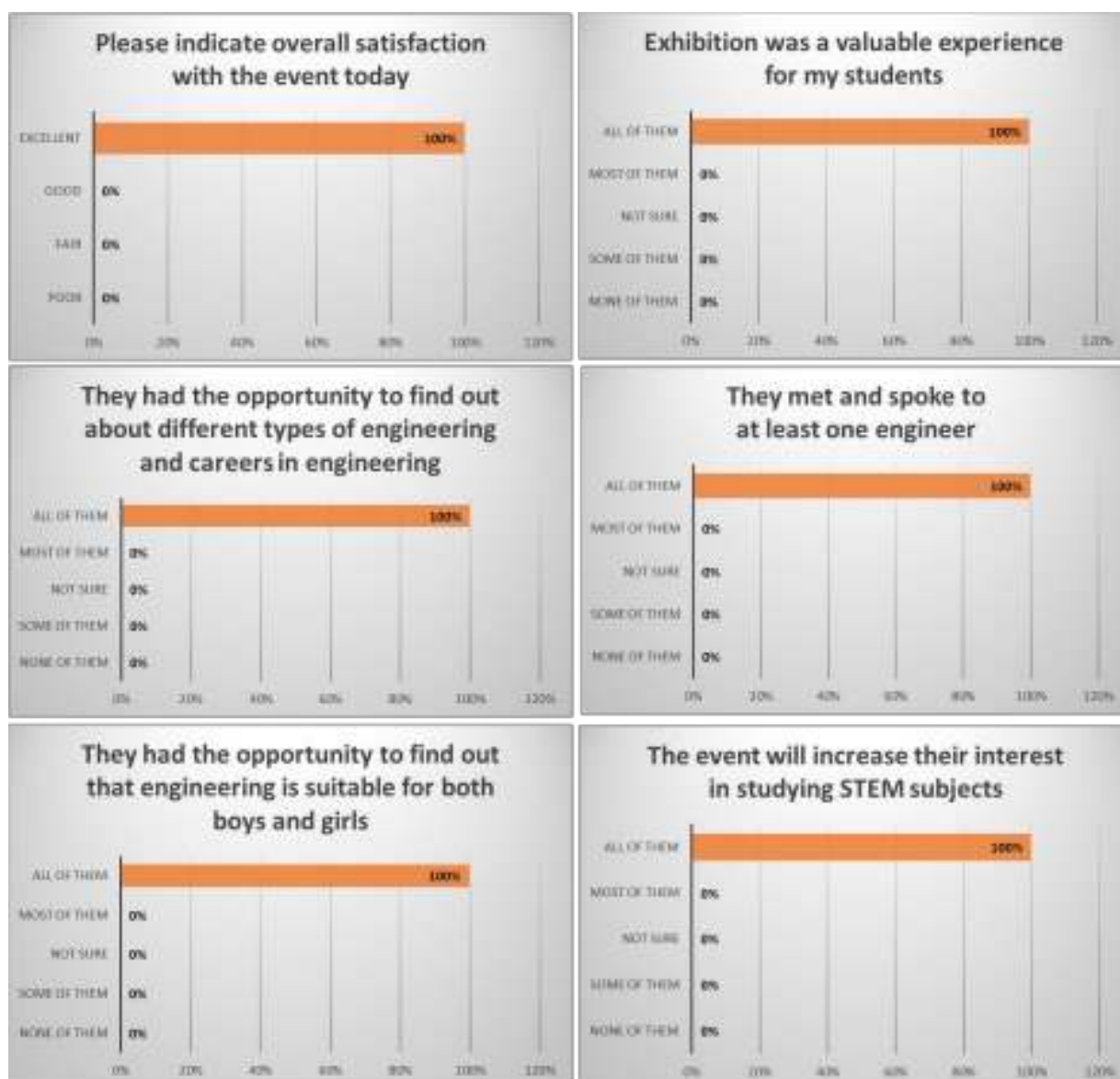
*'I'd like this to be an annual event for our school.'* - Primary

*'Be good to be able to bring more children as we are a 3 form entry.'* - Primary

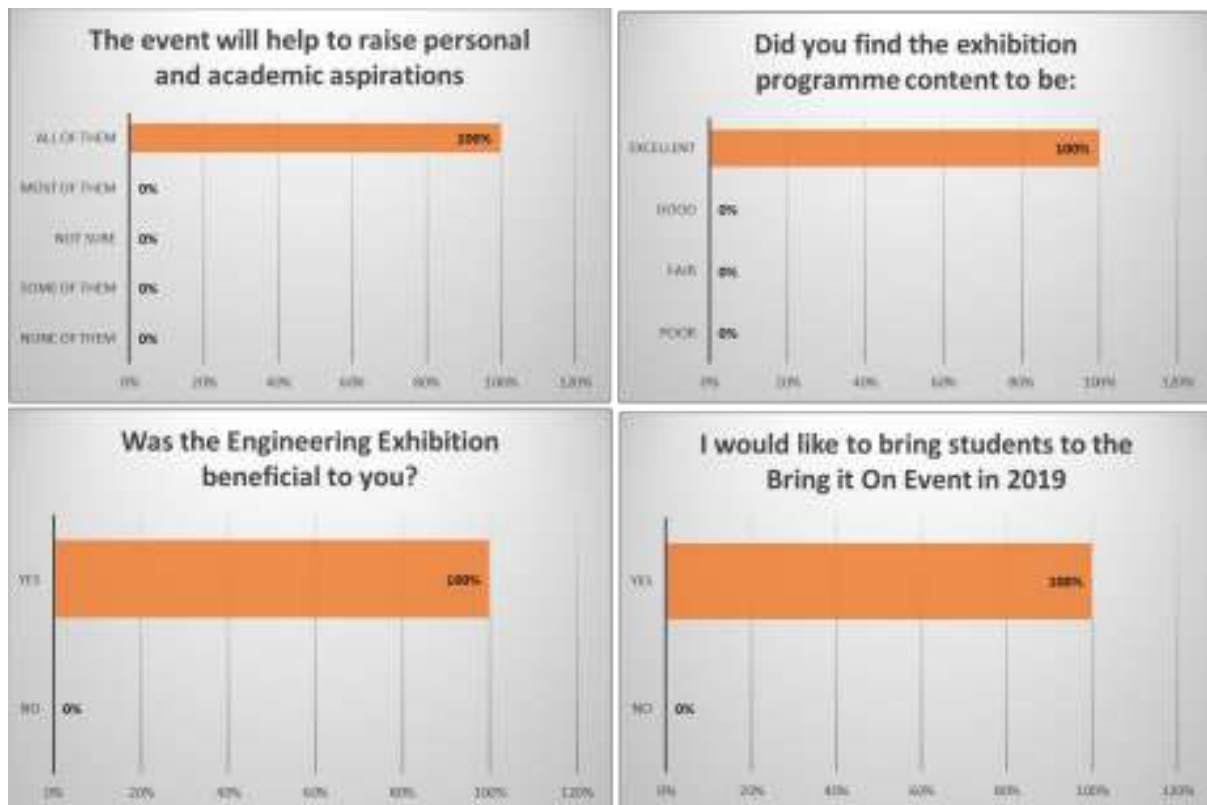
*'Excellent.'* - Primary

## Home Educator Evaluation

A cohort of Home Educators also completed feedback forms at the end of the event. Their contribution helped to assess the value the Bring it On!/Big Bang North East experience has to the children they teach outside of a main stream education environment.



### Home Educator Evaluation continued...



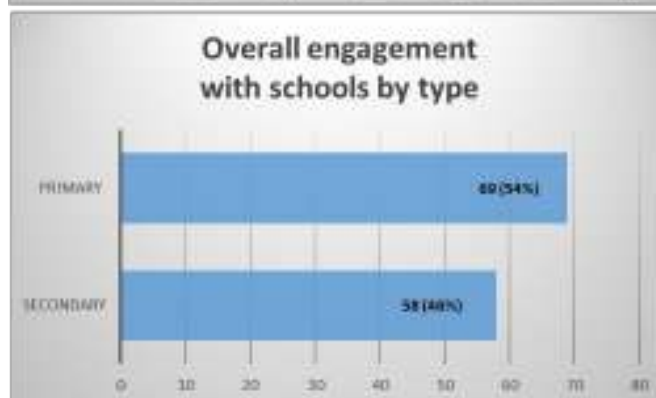
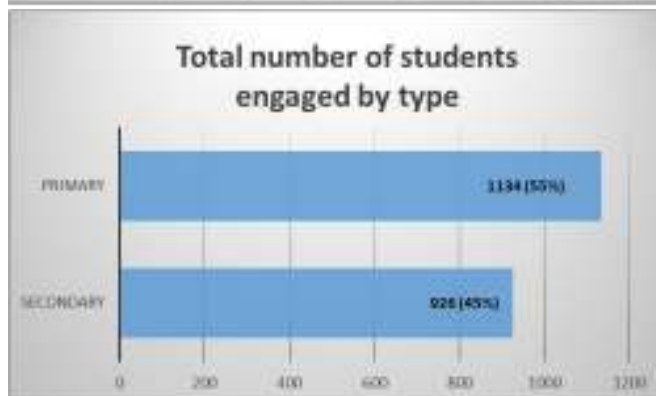
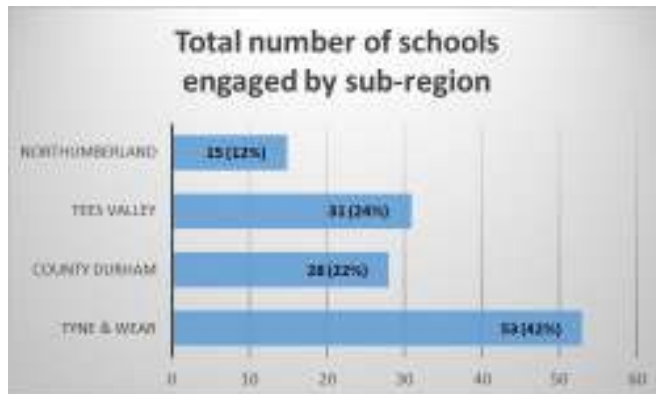
Feedback from our cohort of Home Educators indicates they believe the event was a resounding success in helping to inspire their children about the world of North East Engineering, opening their eyes to career opportunities across a breadth of engineering sectors.

One of the Home educated students commented that they 'have very interesting workshops but this event was brilliant!'



## Regional Impact

The 3 charts below indicate the regional spread of schools that participated in the Bring it On!/Big Bang North East event, primary/secondary breakdown of schools and total number of students that attended over 2 days. The table below on the right shows the total number of schools per local authority area that attended the event across both days.



Local Authority Area	No of Schools
Darlington	4
Durham	28
Gateshead	3
Hartlepool	6
Middlesbrough	6
Newcastle	18
North Tyneside	14
Northumberland	15
Redcar & Cleveland	4
South Tyneside	5
Stockton-on-Tees	11
Sunderland	13

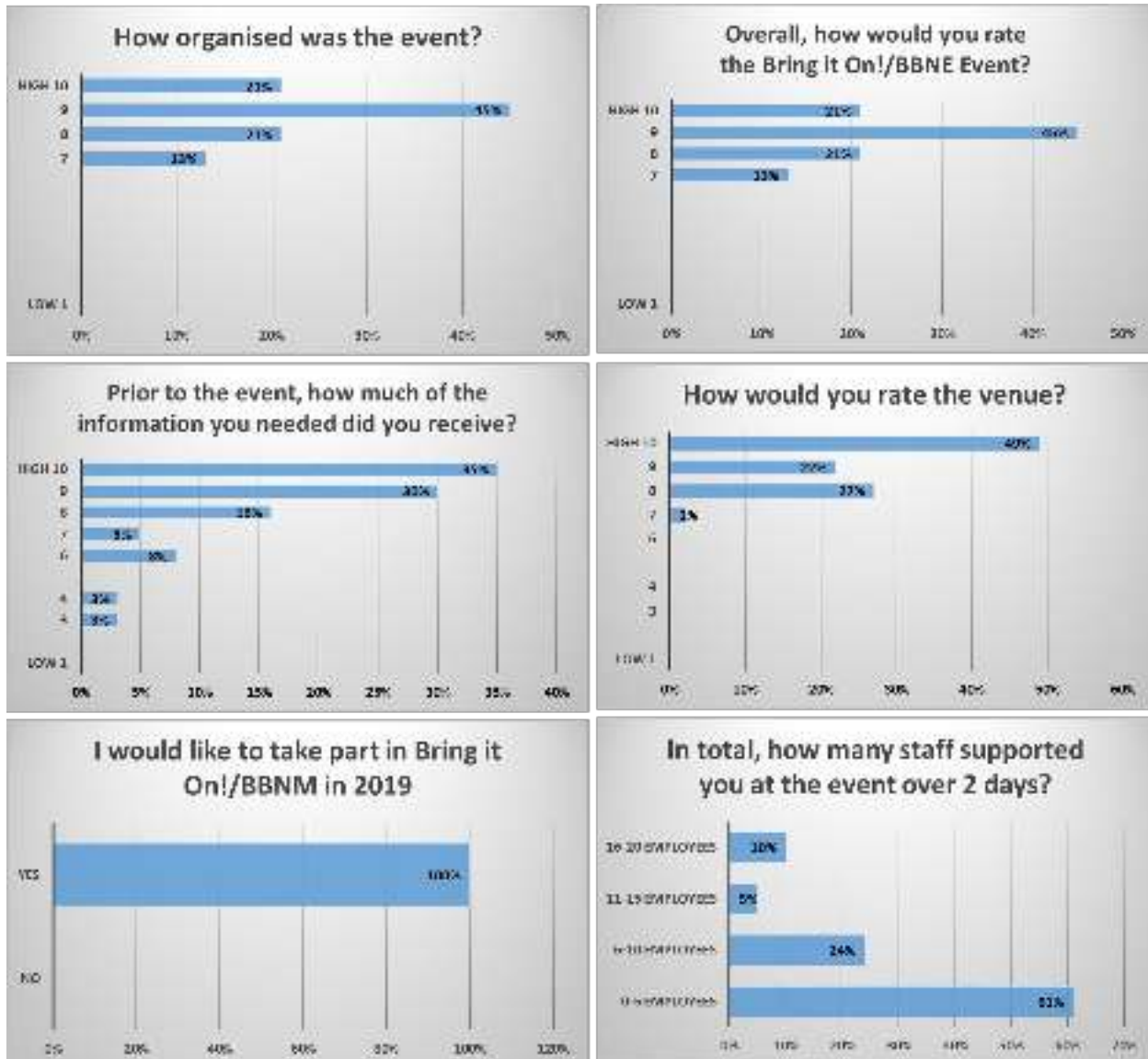
As in 2017, the 2018 event proved to be a draw for schools from across all 12 local authority areas. This is in line with ambitions for the Bring it On!/Big Bang North East event to be the 'go to' annual experience for engineering/STEM inspiration in the north east of England, for students age 9-14 years old.



## Employer Feedback

Engineering Employers from across the region supported the Bring it On!/Big Bang North East event. They were asked to complete feedback questionnaires before leaving the exhibition, rating their experience of being involved on a scale of 1-10 (1 scoring low, 10 scoring high).

Results as below:



87% of the employers rated their overall experience of the event at 8 or above with 81% indicating their satisfaction about receipt of pre-event information at 8 or above and 87% rating the organisation of the event at 8 or above. 100% indicated they would like to take part again in 2019.

It is clear to see from the feedback, that many of the organisation who supported the event garnered substantial support from colleagues over the 2 day event to help inspire the students and teachers about the amazing world of north east engineering.

The employers also provided some fantastic feedback and great suggestions on how to improve aspects of the event like catering and behind the scenes organisation for 2019.



When asked to sum up their overall opinion of the event, comments included:

*'Great overall event. Lots of engagement with teachers and students. A great initiative to Bring STEM to a younger generation.'*

*'High octane engineering event!'*

*'Excellent event that raises the profile of engineering in the region. Would definitely recommend to other companies to attend.'*

*'A wonderful, engaging event enthusing and inspiring a young generation of future engineers who can help to make a positive difference to the world we live in.'*

*'Really enjoyable day, definitely beneficial for the children and the companies alike! Would come back again next year without a doubt.'*

*'A great opportunity for young people to dispel some myths around engineering. A fantastic chance for a first touch point with the next generation of N.E. talent.'*

*'Well attended, good layout and process, well promoted.'*

*'Excellent event for students – lots of opportunities open to teachers too. Great place for information.'*

*'A great way to engage kids on the practical ways in which they can apply maths/physics knowledge.'*

*'Great event – and much better than any corporate team building activity!'*

*'Great event. Hopefully we inspired some future engineers.'*

*'Absolutely excellent to promote awareness and aspirations of STEM in the north east. Inspirational for the primary children in particular – a real eye opener!'*

*'Inspiring, exciting event when we see the enthusiasm of young engineers. Seeing the potential is inspirational.'*

*'A very well organised event with some great companies attending. Very engaging for school children to show them how engineering has an impact on the world.'*

*'Opportunity to field questions of genuine interest – not just young people who've been forced into attending.'*

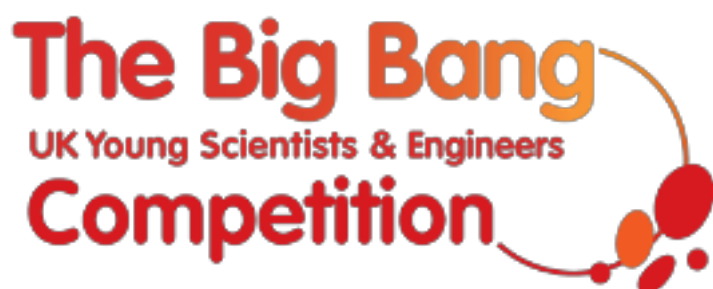
## The North East Community of Professional Engineers

Once again this year, local volunteers of the professional Engineering Institutions came together in support of the event.

Representatives from the Institution of Mechanical Engineers, Institution of Civil Engineers, Institution of Engineering and Technology, Institution of Chemical Engineers, Institute of Measurement and Control, Chartered Institute of Building Services Engineers, Royal Academy of Engineering and the Welding Institute provided interactive engaging activities throughout all the zoned areas, bringing an added dimension to the engagement with engineering employers.

Tony Roche, President of the Institution of Mechanical Engineers travelled from their HQ in London to visit the Bring it On!/Big Bang North East Event. He toured all the zoned areas of the exhibition, commenting, 'A really delightful event shared with 1,200 excited 9 year olds; what a fantastic and brilliant example of PEI's, schools and employers working as one to introduce children and teachers to the exciting world of engineering.'





### **Big Bang Young Scientists and Engineers Competition Regional Finals**

Young Scientists and Engineers from across the north east region were welcomed at the Beacon of Light on the 4<sup>th</sup> October as part of the Bring it On! /Big Bang North East event to exhibit and present their science and engineering projects to a panel of judges. There were a wide variety of projects spanning a plethora of topics and themes from 'Data analysis of current emerging skills development & training schemes in the rail transport sector' to 'The effects of global warming', 'How can we make more eco-friendly fuel?' and 'The secret life of plastic', there were a total of 66 projects on show.

Congratulations to all north east winners of the Big Bang Young Scientists and Engineers Competition.

#### **NE Young Engineer of the Year 2018 – Karthik Mysore**

Project - Automatic Identification of Building Information Modelling Objects

#### **NE Young Scientists of the Year 2018 – Hannah Akotei**

Project - Stereopsis: What is the ideal distance to measure stereo vision?

#### **Regional Finalist – Chloe Pratt**

Project – How Can String Theory Help Us Understand Black Holes?

#### **Regional Finalist – Katy Feng**

Project – Skin Polarisation Imaging

#### **Regional Finalist – Harry Moore**

Project – Density Gauge prototype (Archimedes)

#### **Regional Finalist – Libby Ward, Ella Gifford, Scarlett Bell**

Project – Dyeing to protect aquatic systems

#### **Regional Finalist – Jaime Thompson, Evie Cooper-Jamison, Yasmin Thompson, Tom Burt**

Project – How do our organs work?

#### **Regional Finalist – Megan Goss**

Project – Dye-sensitised TiO<sub>2</sub> solar cells: evaluation of the role of dye molecules and processing steps

#### **Regional Finalist – Alex Kelley, Jake Kenmir**

Project – Growing halophytes

#### **Regional Finalist – Maria O'Shea, Amber Hodson, Erin Collings, Connie Hewison**

Project – The Secret Life of Plastic

Our Young Scientist and Engineer, along with the 8 other regional finalists will represent the north east region at the national finals at the Big Bang Fair in Birmingham, March 2019.

In partnership with





Karthik and Hannah were presented their awards by Julie Elliot, MP for Sunderland central

A number of additional prizes were also awarded:

**Environmental Award Sponsored by Avid Technology** – Brittney Salvin

Project - Innovative venture of the transport sector and waste-to-energy - the case of locomotives

**Innovation Award Sponsored by Hyperdrive Innovation** – Cameron Arkle

Project - Psychological effects of lower limb amputation

**Experimentation Award** – Jack Whinnom

Project - Temporal Variation of Fjord Hydrochemistry at Tasiussaq Fjord, West Greenland

**Teamwork Award** – Rosie Gray, Beth heron, Annabel Ratcliffe, Luke Warriner

Project – How can Dementia be prevented?

**Communication Award** – Emily Brazier, Hollie Nichol, Libby Pate, Phoebe Skinner

Project - How can we become more environmentally friendly?

**Creativity Award** – Simone Syndercombe

Project – THEREMINO

The competition entries were judged by 22 judges and 2 competition moderators from organisations across the region and wider UK.



The Big Bang North East STEM Zone provided young people and teachers with an opportunity to engage with a broad range of organisations operating in the STEM community. Organisations included Rotary, Sea Cadets, RSPB, GreenPower, Raspberry Pi Foundation, Blyth STEM Hub, Newcastle Dental Hospital, Science Geek, Beamish, and more.

As with the employers in the engineering zones, they were asked to complete feedback questionnaires before leaving the event, rating their experience of being involved on a scale of 1-10 (1 scoring low, 10 scoring high).

100% of the STEM exhibitors in the zone rated their overall experience of the event at 8 or above with 100% indicating their satisfaction about receipt of pre-event information at 8 or above and 100% rating the organisation of the event at 8 or above. 100% indicated they would like to take part again in 2019.



The Bring it On!/Big Bang North East event was the culmination of a successful collaboration between a number of different organisations from across the region working together to inspire young people about north east engineering.

Using EngineeringUK's EBM Common Evaluation Questionnaire, has enabled measurement of the impact the exhibition had on participating students against a nationally representative survey of perceptions of engineers, engineering and STEM, and, best practices from other STEM focused engagement activities. In addition to this, undertaking the pre and post questionnaires enabled a direct comparison of results to evidence actual impact the exhibitors had on positively influencing students' knowledge and perceptions of the sector through participation in the event.

The results, as documented above in this report, highlight the real benefit of enabling students to meet face to face with all types of engineers, alongside the opportunity to see and experience, first-hand, examples of what we engineer and manufacture in the north east, shining a light on the breadth of engineering in this region and the associated career opportunities.

The Bring it On!/Big Bang North East event is one that would not take place without the backing of all the amazing organisations who work with us to make it happen.

To our 2018 funders **Reece Foundation, Make it Sunderland, Institution of Mechanical Engineers, Cleveland Scientific Institution, Community Foundation, Rotary Club of Sunderland and Rotary North East, Thorn Lighting, Lear Corporation, Avid Technology, Hyperdrive Innovation, Chartered Institute of Building Services Engineers, Institution of Civil Engineers Institution of Measurement and Control**, your financial and in-kind support enabled us to put on the event, promoting the world of North East engineering to just under 2200, 9-14 year olds from all corners of the region.

Thank you to all the businesses who brought the two day event to life with some amazing people and interactive activities. Your in-kind/financial commitment to hosting a stand has helped to inspire and raise the aspirations of all attendees. You have opened the eyes of young people to the many fantastic engineering careers available to them in this region and helped to educate and inform their teachers about the incredible world of engineers and engineering. Your support is greatly appreciated.

Thank you to all the volunteers who gave up their time to help facilitate delivery of the event. Your support was invaluable in helping to keep things moving across the 2 day programme.

You are all truly inspiring people, as reflected in the great feedback we received from students and teachers about the impact you have had on their knowledge and perceptions about engineering. We look forward to working with you again in 2019.