

UNILEVER R&D, PORT SUNLIGHT, 'BRIGHT FUTURE PROGRAMME'



STEM Ambassador Hub Merseyside & Cheshire

Context and Overview



Unilever

In 2015, following engagement with staff from All About STEM (managers of the Merseyside and Cheshire STEM Ambassador Hub) an on-site STEM Ambassador recruitment drive was organised by the Unilever R&D site

in Port Sunlight. The site already had an existing cohort of volunteers, though this was relatively small and staff generally supported the company's work experience placements or Dove Day Programme.

In 2016, a site-wide programme was launched at Port Sunlight to identify a 'social mission', which would maintain the vision of company founder, Lord Lever; to do good both for consumers and also for the planet and society.

Opening young people's eyes to the wide range of opportunities STEM has to offer, appeared to be a key passion for employees, so the company approached All About STEM for help in developing a schools' engagement programme that would build upon the company's community-focused history and support its contemporary social mission vision.

A plan was forged to develop a year-long project, the 'Unilever Bright Future Programme' to be launched at the Big Bang North West event in 2016 and culminating with the Big Bang North West in 2017.

The planned Bright Futures Programme consisted of six main stages to be delivered by the company's growing number of STEM Ambassadors:

- **Big Bang North West 2016**

STEM Ambassadors delivered a series of activities and promoted the Bright Future Programme, as part of the company's exhibition stand.

- **Teacher Twilight Event**

STEM Ambassadors delivered an introductory presentation about the company, a site tour that included 5 mini-workshops across 5 different departments and a networking session that enabled teachers to meet with HR/apprentice/graduate staff.

- **On-site Student Activity Days**

25 schools attended one of two on-site days where teams of 5 students took part in extended versions of the 5 departmental workshops, delivered by the STEM Ambassador cohort and supported by other colleagues. Students were able to get hands-on with such things as formulation, processing, packaging, consumer insight and digital R&D. Students were then set a project challenge to take away and work on in school.

- **Celebration and Assessment Day**

Four months later, students returned to site to present their project work, and were 'judged' by the STEM Ambassador teams from the 5 departments they had worked with on site.

- **Winners On-Site Day**

The winning school team from Rainford High Technology College, was invited to return to site to make a 'mock up' of their project idea. The students' winning idea, 'Soap and suds toys - for healthy girls and boys', explored the challenge of encouraging children to wash their hands to help to eliminate causes of early childhood disease. The idea was simple but hugely effective. Counters and dice were hidden within transparent soap. The packaging box then formed the playing board, incentivising the act of hand washing.

- **Big Bang North West 2017**

Six teams entered their project work into the regional heats of the Big Bang Competition. Two of these were selected to go through to the National Finals and the Rainford High team attended the Big Bang at Parliament event in October 2017.

One of the driving aims of the Programme, from Unilever’s point-of-view, was to broaden the ‘reach’ of their school engagement, both geographically and in terms of the social and cultural background of the students accessing their support.

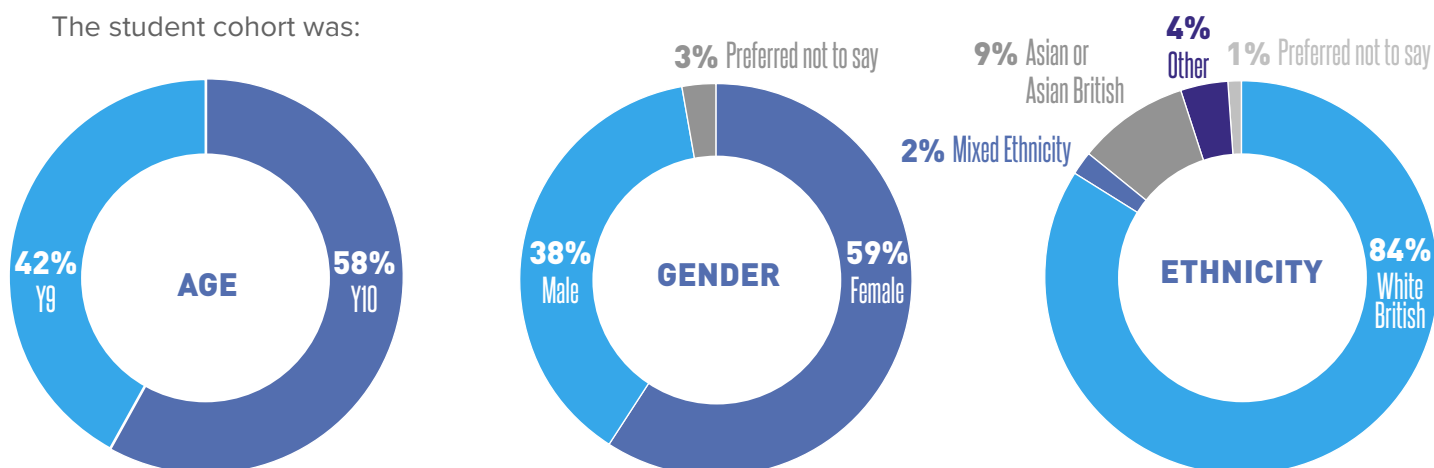
At the Teacher Twilight event, 40 teachers, representing 35 schools from across 8 Local Authority areas, were present. This equates to 26.9% of all state-funded secondary schools across those LA areas.

Local Authority	Total No. of State-funded Secondary Schools	No. of Schools at Twilight Event	% of Schools at Twilight Event	No. of Teachers at Twilight Event
Cheshire West and Chester	19	4	21.05%	4
Halton	8	1	12.50%	1
Knowsley	6	1	16.66%	2
Liverpool	34	9	26.47%	10
Sefton	19	4	21.05%	4
St Helens	9	2	22.22%	3
Warrington	14	5	35.71%	6
Wirral	21	9	42.86%	10
TOTAL	130	35	26.90%	40

At the On-Site Student Activity Days 120 students, representing 25 schools from across 7 Local Authority areas, were present. This equates to 19.23% of all state-funded secondary schools across those LA areas and evidences the engagement of a wide range of school types and geographically beyond the company’s previous draw from the Wirral area.

Local Authority (LA)	Total No. of State-funded Secondary Schools	No. of Schools at On-Site Event	% of Schools at On-Site Event	No of LA Students in Attendance at On-Site Event
Cheshire West and Chester	19	3	15.79%	20
Halton	8	1	12.50%	5
Liverpool	34	6	17.65%	28
Sefton	19	4	21.05%	19
St Helens	9	2	22.22%	10
Warrington	14	4	28.57%	19
Wirral	21	5	24.00%	19
TOTAL	124	25	19.23%	120
TOTAL	130	35	26.90%	40

The student cohort was:



Impact on young people

Students completed pre- and post-programme surveys, which aimed to draw out information about the students' knowledge of and attitudes towards:

- STEM subjects
- STEM careers
- Extra-curricular STEM engagement
- Broader STEM relevance
- Post 16 aspirations

The student surveys revealed that the STEM Ambassador activities had contributed to a small improvement to student's attitudes to STEM subjects per se. Following the activities, students generally expressed more positive attitudes to the study, importance and enjoyment of STEM subjects.

	Pre- Activity	Post-Activity	Change
STEM Subjects			
I am extremely interested in Science	59.48%	64.77%	5.29%
I am extremely interested in Maths	44.83%	48.86%	4.03%
I think STEM subjects are extremely important	70.69%	72.72%	2.03%
I extremely enjoy STEM subjects	50%	51.13%	1.13%

However, when asked whether they considered STEM subjects to be for people like them, there was a highly significant improvement. Evidently, engagement with the STEM Ambassadors had enabled students to envisage themselves 'fitting' within a changed perception of the STEM landscape. STEM subjects were no longer for 'other people' who perhaps fitted students' previously preconceived ideas or stereotypes.

	Pre- Activity	Post-Activity	Change
STEM Subjects			
I extremely agree that STEM subjects are for people like me	41.38%	57.96%	16.58%

The programme activities also made a significant positive impact on students' STEM careers awareness, with 32.36% more students agreeing, after the activities, that they had an extremely good understanding of the sort of jobs available in STEM industries, 18.11% more agreeing that jobs in STEM industries were extremely attractive and 20.81% more stating that they were extremely clear about what they needed to do next to pursue these careers.

	Pre- Activity	Post-Activity	Change
Careers Awareness			
I have an extremely good understanding of the sorts of jobs available in STEM industries	26.73%	59.09%	32.36%
Jobs available in STEM industries are extremely attractive	31.89%	50%	18.11%
I am extremely clear about what I need to do next to get a job working in a STEM-based career	18.96%	39.77%	20.81%

These figures indicate vast improvements in students' careers-awareness and are evidence of the impact that engagement with employers, and their STEM Ambassadors, has on young people. Visits to employer sites, and engagement with their STEM Ambassador employees, provides essential knowledge and understanding of future pathways that is not easily provided within the school environment.

Although the Bright Future Programme was a school-based, company-led project, it appears to have had a positive impact on students' attitudes to wider STEM engagement and interest. Almost 10% of those taking part expressed an increased interest in engaging with STEM activities beyond the classroom, thus improving their potential acquisition of 'science capital', a key factor in deciding whether, or not, an individual continues with their STEM studies and pursues a STEM-based career.

A slightly improved number of students also agreed that STEM is extremely important in everyday life.

	Pre- Activity	Post-Activity	Change
Extra-Curricular and Broader Relevance			
I am extremely interested in taking part in STEM activities outside of school	50%	59.09%	9.09%
I think STEM is extremely important in everyday life	56.89%	57.96%	1.07%

The students' engagement with STEM Ambassadors, via the programme, also appears to have a positive impact on their aspirations post-16, with 6.31% more stating that they were extremely likely to go on to Higher Education and 23.69% more stating that it was extremely likely that they would pursue a STEM-based career.

It would appear that, prior to the engagements, though many students were already considering a degree, far fewer believed that this study would result in employment in a STEM-based field. The STEM Ambassador engagements appear to have assisted students in making a decision about their long-term career aspirations post-degree level.

	Pre- Activity	Post-Activity	Change
Aspirations Post 16			
It is extremely likely that I will apply to go to university	69.82%	76.13%	6.31%
I am extremely interested in working in a STEM-based career	20.69%	44.32%	23.69%

Impact on Teachers

Teachers were also asked to complete a post- programme evaluation that focused on the following areas:

- Impact on teachers' own personal learning and knowledge acquisition
- Impact on teachers' own teaching or on other school staff/school curriculum
- Impact on students

In general, teacher responses were very positive. It is worth noting that, within the evaluation data relating to both teachers' own learning and knowledge acquisition and the figures pertaining to the impact on their teaching or other school staff or the curriculum, there are some 'Disagree' or 'Strongly Disagree' responses. These responses tended to come from teachers with Careers AIG roles within school who perhaps felt that they already had sufficiently relevant knowledge and skills within the areas the engagement focused upon.

Impact on teachers' own personal learning and knowledge acquisition

	I learned new information/ skills	I have better understanding of careers available	I have a better understanding of the range of work undertaken across a company like Unilever
Strongly Disagree	0.00%	4.55%	0.00%
Disagree	4.55%	4.55%	4.55%
Neutral	13.64%	4.55%	0.00%
Agree	31.82%	36.37%	27.27%
Strongly Agree	50.00%	50.00%	68.18%

This positive impact on teachers' understanding of STEM careers is a hugely significant impact of the STEM Ambassador activity that took place through the Bright Future Programme. Each of those teachers will have contact with, on average, 100+ students each day. If the teacher themselves has a good awareness of the possible future careers that STEM subjects can lead to, their sphere of influence is incredibly wide.

The 5-year long ASPIRES project, published in 2013, explored, in part, what influences the likelihood of a young person aspiring to a science-related career. When outlining the implications and messages for policy and practice, the report's authors suggested an urgent need for STEM careers-awareness to be embedded in Science lessons in order 'to help broaden students' awareness of the transferability of science qualifications for a wide range of careers both in and beyond science, at degree and technical levels'.

By working directly with teachers, Unilever STEM Ambassadors were able to support the acquisition and development of teachers' own STEM careers knowledge and understanding, which could, potentially, impact upon hundreds of their students.



Impact on teachers' own teaching or on other school staff/school curriculum

The slightly lower percentage improvements evident here, could be due to a variety of factors. For example, the timing of the evaluation data collection, immediately after the final STEM Ambassador engagement, probably meant that few teachers would have, at that point, used their new experiences to inform their lesson- planning. Integrating new ideas into lesson- plans and schemes of work requires strategic planning and is generally done collaboratively across departments. It would be interesting to have been able to revisit this question at the start of the next academic year to find out whether an increased number of teachers would respond positively following the review of curriculum that often happens at the end of one academic year, in preparation for the next.

Significantly, the percentage of teachers who Agreed or Strongly Agreed that they had shared new information, knowledge or understanding with other relevant colleagues was high (63.64%) indicating that a dialogue had already begun amongst school staff. It is perhaps fair to posit that, as this dialogue continues, the new knowledge acquired by teachers, in their engagement with the Unilever STEM Ambassadors, will eventually become embedded in the wider practice and curriculum-development of the school generally.

At 81.81%, the number of teachers who reported that involvement in the Programme (and therefore engagement with STEM Ambassadors) had encouraged their participation in other similar projects was really pleasing. Teachers appear to have enjoyed their involvement with the STEM Ambassador activities and, more importantly, to have gained a sense of the broad range of positive impacts that such employer-engagements could have upon themselves, their students and their wider school communities.

	I have integrated new information/skills/ understanding into my own lessons/schemes of work	I have shared new information/knowledge/ understanding with other relevant colleagues e.g. careers coordinators, my dept. staff, other subject staff	Involvement in the programme has encouraged our participation in similar projects.
Strongly Disagree	4.55%	4.55%	4.55%
Disagree	4.55%	0.00%	0.00%
Neutral	40.91%	27.28%	0.00%
Agree	22.73%	45.46%	27.27%
Strongly Agree	13.64%	18.18%	54.54%
DNA	13.64%	4.55%	13.64%

Impact on Students

The questions teachers were asked about the impact of the Programme on their students covered a range of issues relating to student's development of new skills and the impact on attitudes and aspirations.

	My students learned new information/skills	My students' 'soft-skills' (team-work, communication, problem-solving etc) have improved through their involvement in the programme	My students have effectively applied new information/skills/ understanding in their lessons or in extra-curricular contexts.
Strongly Disagree	0.00%	0.00%	0.00%
Disagree	0.00%	0.00%	0.00%
Neutral	0.00%	4.55%	4.55%
Agree	13.64%	9.09%	45.46%
Strongly Agree	77.27%	77.27%	36.36%
DNA	9.09%	9.09%	13.64%

Significantly, the number of 'Did not answer' responses was high in this section, indicating that several of those questioned felt unable to comment on the impact of the Programme in these areas. This is likely to be an issue of timing. As the evaluation data was collected immediately after the final STEM Ambassador engagement, teachers may not yet feel that they had clear evidence that the activities had significantly impacted students' development and application of new skills.

	My students have gained confidence through their involvement in the programme	My students' aspirations have been raised through their involvement in the programme	My students' engagement with their studies/ their attitude to school has improved through their involvement in the programme
Strongly Disagree	0.00%	0.00%	0.00%
Disagree	0.00%	0.00%	0.00%
Neutral	0.00%	0.00%	31.82%
Agree	18.18%	36.36%	36.36%
Strongly Agree	72.72%	54.54%	22.73%

High numbers of teachers indicated that engagement with the Unilever STEM Ambassadors through the Bright Future Programme had positively impacted students' confidence and aspirations. When this is coupled with the positive responses from the student evaluation data relating to students' changed perceptions about whether 'STEM subjects are for me' and whether they would be 'interested in working in a STEM career', it is not unfair to say that the STEM Ambassador activities could have had a life-changing impact on the students involved.

Impact on STEM Ambassadors

In the planning of the project, consideration was not given directly to the impact of the STEM Ambassador activities upon Unilever employees themselves and no formal evaluation was undertaken.

However, the anecdotal evidence from feedback received from the staff involved indicates that the engagements had a positive impact on staff morale and company loyalty as well as on individual personal development.

From the very first event I attended, I have been hooked on the energy this age group offers when we interact! I have enjoyed the challenge of taking relevant technological information that we deal with every day, and translating it in a way which will engage and inspire this audience. Seeing students' reactions when explaining packaging technologies and our sustainable objectives has only made me more passionate about these areas of my work. If the kids involved have got as much out of this as I've done, it's been time very well spent.

Packing Technologist, Debbie Neely

I'm a psychologist and I LOVE showing people how we take the theoretical understanding of how people think, reason and make decisions and put this into practice in real life, in situations that people can see in their day to day life. Seeing the thought, research and most importantly the energy that the students put into their ideas was incredible, and it has been amazing to watch really creative, innovative ideas grow into something much bigger.

Global Consumer Insights and Claims Manager, Danica Caiger-Smith

Impact on employers

Following on from the company's initial engagement with their regional STEM Ambassador Hub, Unilever staff have worked to create a sustainable schools' engagement programme. The site at Port Sunlight currently has around 70 registered STEM Ambassador employees and has rolled out a second year of the Bright Future Programme, with over 30 schools engaged.

Other departments are recruiting their own STEM Ambassador cohorts and there are plans to develop more concrete links with engaged schools regarding apprentice recruitment locally.

On the back of the company's STEM Ambassador engagement, and subsequent involvement with the Big Bang North West, the team were invited to exhibit at 'New Scientist Live' at the O2 arena in September 2017.

The photographs illustrate the company's STEM Ambassador cohort at the start of 2016 and then again in 2017! The energy and enthusiasm created by their schools' engagement, supported by their regional STEM Ambassador Hub, has been infectious!

