

Primary Engineer Programmes
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The Worshipful Company of Scientific Instrument Makers in partnership with Primary Engineer

Impact Report 2022-2023



The Worshipful Company of
Scientific Instrument Makers





How our partnership ran in 2022-2023

This was our fifth year working together on The **Primary Engineer Vehicle Project** to inspire the next generation of engineers in London. The partnership provided the opportunity for 10 schools to benefit from a one-day CPD training course, supplied kit and resources to build up to 30 projects across two classrooms in each school and a celebration event to bring the schools together and celebrate the power of engineering. The classroom sessions allow for 60 pupils to build 15 Lower Primary shoebox vehicles and 15 Upper Primary motorised vehicles in pairs. Our partnership also facilitated the opportunity for 5 previously trained schools to receive a continuation kit, meaning they could deliver the project again to a new class, deepening the impact in the school.

The Primary Engineer Vehicle Project provides a fantastic opportunity to engage with engineering, meet and work with engineering professionals and develop engineering skills. Thanks to our partnership, 9 of the 10 schools were partnered with an engineering professional.

This year, we delivered in-person training, which allowed both teachers and engineers to be in the same room and train together, establishing the relationship from the beginning. In February 2023, we hosted our Vehicle training session at Glaziers Hall. We successfully trained 9 teachers from 8 schools. We were joined by engineers from WCSIM, who were paired with schools, received a deeper understanding of the project and further understood how they could best support the activity in the classroom. The session went incredibly well, and the teachers really enjoyed how hands-on the training was, commenting:

“The trainer was absolutely fantastic, so many helpful hints to help me teach this and many other bits of the national curriculum for DT. Thank you so much”

“Really useful, resources were excellent and classroom top tips!”

Between May-June, we trained another 2 schools via a virtual session, completing the 22/23 cohort.



How our partnership ran in 2022-2023

In June, we hosted the Celebration Event at Glaziers Hall, London. All participating schools were invited to the event, and we had 4 schools in attendance. The day consisted of pupils engaging with the engineering professionals we had in attendance from WCSIM and testing their vehicles against the success criteria. Pupils and teachers enjoyed the event, and we received great feedback both in the final survey and on the day; teachers found it so beneficial, asking how they could ensure continuity of the project in the school. Schools who did not attend the Celebration Event have been provided the material to run an in-school event, allowing all pupils who took part to be championed in the classroom.

In a year where teachers have exercised their right to strike, we have still seen a demand for STEM engagement, even to the point where training days were hosted on strike days at the request of teachers. Coming off the back of 3 years of COVID disruption, this shows how highly the teachers value this programme and want to ensure their pupils still get access to it in a year with even more limited classroom time. Overall, it shows that there is a huge appetite to bring engineering into the classroom.

Schools involved felt fully supported by Primary Engineer throughout the project and would recommend involvement to others. All schools would be interested in taking part in a Primary Engineer Programme again.

Within this report, we provide information on a local project-level about the specific funded schools and a selection of training data has been collected from a wider, UK dataset. Local level data includes information such as the average percentage of pupils of free school meals eligibility as a measure of low parental income and an individual indicator of potential disadvantage as part of social policy research, as well as the percentage of pupils whose first language is deemed other than English and the school's locality index of social deprivation.



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London



15
Schools



Pupils Eligible For
Free School Meals

18.7%



First Language
Not English

36.4%



Average
Deprivation Index

1 = most deprived



Avg. Pupils Deemed
Other Ethnic Origin

61.5%



50%
Boys



50%
Girls

TOTAL Pupils



750

Our approach allows our activities to reach particular areas and communities to close inequality gaps and widen ethnicity representation.

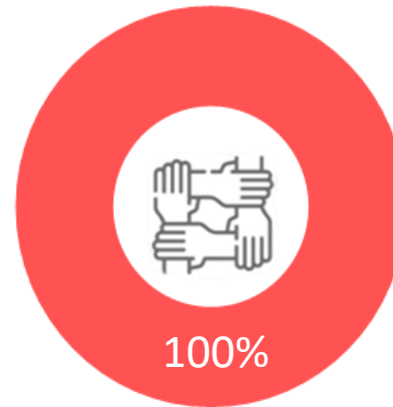




How did teachers find the training?



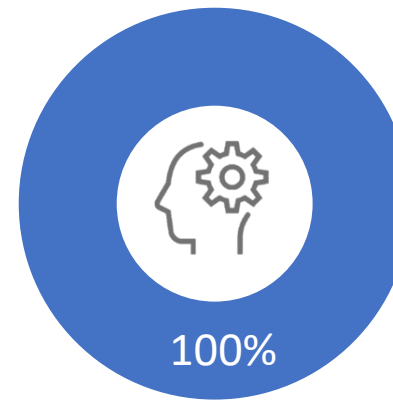
of teachers report an **increase in their understanding of engineering** following the training



of teachers report a **better understanding of the diversity challenges in engineering**



of teachers see **value** in including **engineering in the curriculum** to **benefit pupils in their education and their working lives**



of teachers who believe training **helped them understand how they can make an impact on engineering career aspirations**





Having completed the training % of teachers who have confidence in teaching STEM subjects

How did teachers find the training?

'The training was absolutely brilliant. A real life application to the real world which will excite and inspire students to try their hardest. Great idea for the competitions as well as the kids will love this. Great training and a very enjoyable day.'

'The trainer was fantastic at delivering the programme. I've left feeling confident that I can deliver this programme in school. What an amazing final product! I would definitely recommend this to colleagues in other schools!'

'Thank you for an engaging and informative session. The box of materials and equipment was delivered on time. I am excited to now make the products with a group of children, having had the opportunity to build and practice myself first. A great morning.'

'Thank you for this lovely training day. We have learnt so much and going back to school feeling very inspired. The range of resources available was fantastic, as was the organisation of each. This helped aid the location of parts required throughout the session.'

'This was a fantastic day. Very well organised and so informative. It was great to meet the engineers also. Really looking forward to showing the children.'



99%

Science



93%

Design & Technology



92%

Engineering



100%

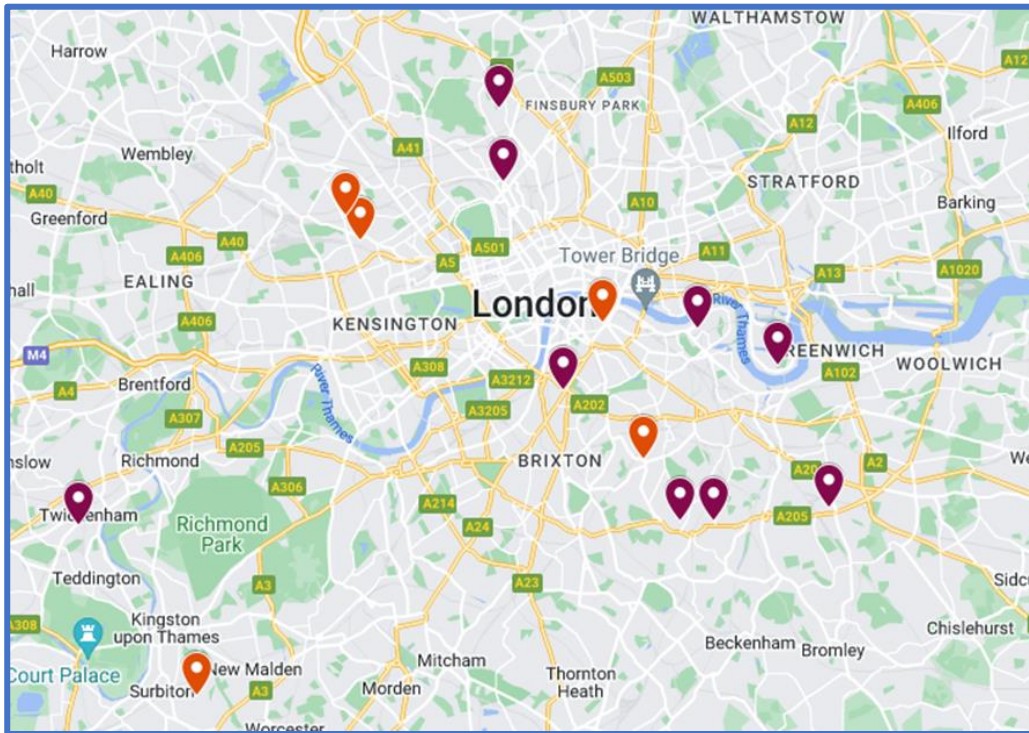
Maths

Training impact figures collated from a UK dataset





Our geographical reach:



Schools

1. Albion Primary School
2. Archdeacon Cambridge's CofE Primary School
3. Ashmole Primary School
4. Brookfield Primary School
5. Canary Wharf College
6. Dalmain Primary School
7. Hawley Primary School
8. Horniman Primary School
9. St Winifred's RC Primary School
10. Holy Trinity CofE Primary School

Continuation Kits

1. Ark Franklin Primary Academy
2. Charles Dickens Primary School
3. Christ Church CofE Primary School
4. Goose Green Primary and Nursery School
5. Saint Mary's Catholic Primary School



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“This project encouraged children who are not natural leaders to show a great skill in supporting others” – Steve Kent, Archdeacon



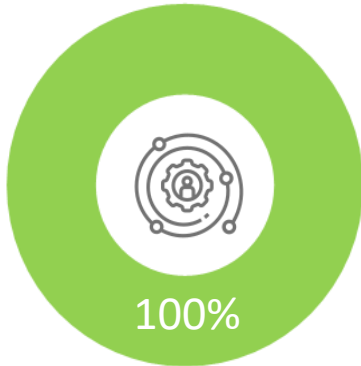
“The contact we have had with Philo has been great. Both the training day and in-school, he has been fantastic, and we are so grateful!” – Daisy Bodley, Brookfield Primary



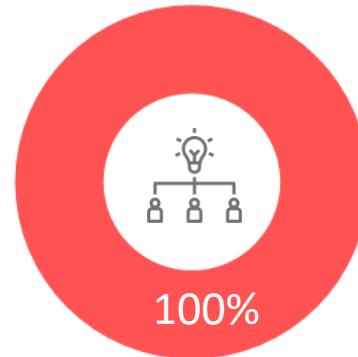


What was the impact of the project on both teachers and pupils?

Percentage of teachers who **Agree/Strongly Agree** with the following statements



My pupils now have a **greater understanding** of what engineering is and its importance.



My pupils have **enjoyed learning about engineering.**



My pupils are **keen to learn more** about engineering.



The programme had a **positive impact** on pupil learning.



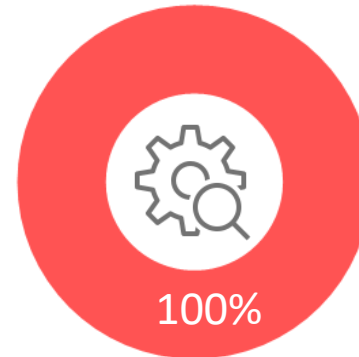


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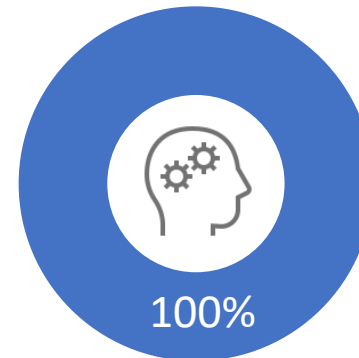
I am more **confident with the subject of design & technology** in the classroom.



Pupils thought like an engineer by **recognising problems and identifying issues**.



The programme was **valuable** to my teaching of STEM subjects.



Pupils thought like an engineer by **learning from mistakes and trying new approaches**.



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