

STEM Education

STEM INTRO

Thales aims to inspire, inform and engage young people via a variety of initiatives and activities through our STEM opportunities. We believe that is vital to give young people the skills and knowledge needed to make an informed decision about their educational choices and future career options.

As an organisation our objectives are to:

- Implement and support high quality and effective opportunities for young people from all backgrounds to learn about STEM subjects and their importance in society.
- Raise awareness of career opportunities and the importance of the right qualifications within STEM subjects.
- Actively encourage that studying STEM subjects is fun and creative and can empower young people with ideas and concepts.
- Support our external partners to deliver STEM engagement activities across the UK.
- Create opportunities for schools to

have a meaningful engagement with an employer and to support schools to meet the Department of Education Careers Strategy and the Gatsby Benchmarks.

WHAT DO WE DO?

At Thales we have a team of STEM ambassadors trained to deliver a core number of activities and opportunities within local schools and at STEM events. All of our programmes are delivered by volunteers within the business who have completed their STEM ambassador training and are passionate about inspiring young people of all ages. We work with a number of schools local to our Thales sites and attend large events across the UK. To see if we can support your school, please see our schools criteria on [page 12](#).



STEM AMBASSADOR

Thales employees of all different ages and backgrounds including apprentices, graduates and managers from a variety of engineering, maths and science disciplines make up our volunteers. All volunteers complete the STEM Learning Ambassador training and specific training in a number of activities before attending a school. All our volunteers are DBS checked via STEM Learning. Please see www.stem.org.uk/stem-ambassadors for more information. Thales also has a comprehensive safeguarding policy.

ACTIVITIES WE OFFER TO SCHOOLS

Please see our core activities and opportunities that we offer schools. As we are based across a number of locations within the UK we are always happy to discuss different STEM opportunities with schools. If you have an event coming up that you feel would benefit from engagement from us please contact us and we will see what we can do STEM@uk.thalesgroup.com.

OZOBOTS

The Ozobot Challenge Audience: KS2 or KS3

Time: approximately 1 hour

Class Size: maximum 30

Ozobots are small robots that help young people learn about simple code language and deductive reasoning. We have a number of activities suitable for students to help them learn the basics. In small teams your class will be challenged to design a maze to get their Ozobot to travel and complete a number of different commands.



LEGO MINDSTORMS

LEGO MINDSTORMS – THE ROBOTS ARE COMING...

Audience: KS2 or KS3

Time: approximately 1 hour

Class size: maximum 20

This fun, interactive and hands-on workshop will introduce your students to the exciting world of robotics. Students will utilise LEGO Education Mindstorms EV3 robotics platform to develop their own amazing robotic creations. They will then develop their coding skills to bring their robotic creations to life. Who will showcase the most stylish robot? Who will win the robot race off?!

LEGO MINDSTORMS– GETTING MESSY WITH MINDSTORMS!

Audience: KS3

Time: approximately 1 hour (builds on WORKSHOP ONE)

Class size:
maximum 20

Building on the excitement of WORKSHOP ONE, this challenging and hands-on workshop takes building and programming skills to the next level! Your students will start getting to grips with LEGO Mindstorms sensors and deepening their understanding of robot design, functionality and coding. Who will be able to meet the Build Challenge? It's time to get messy with Mindstorms.

LEGO MINDSTORM – THALES MAT CHALLENGE

Audience: KS3 or KS4

Time: approximately 2 hours (builds on WORKSHOPS ONE and TWO)

Class size: maximum 20

This final workshop will offer a series of open robotic challenges with no specified solutions. This will enable students the opportunity to deepen their robotics skills through exploration and discovery. They will work on the "Thales Challenge Mat" - picking up objects, climbing ramps, detecting colours using sensors. Who will take on the turning with a Gyro Sensor Challenge? Will the fear of Ramp Challenge prove too much?!



WORKSHOPS AND EVENTS

MOCK INTERVIEW PROCESS

Audience: KS4 or KS5

Time: this can vary depending on the number of students involved, but each interview normally runs for 30 minutes.

Class size: Maximum 30

We are able to offer young people the opportunity to experience a formal interview. Our mock interview process allows young people to apply for a mock job role of their choice; they will complete a CV before the event and attend an interview with a Thales employee.

This activity is a great way to build young people's confidence and gain structured feedback.

PEOPLE LIKE ME – DESIGNED BY WISE

Audience: KS3 or KS4

Time: approximately 1 hour

Class size: Maximum of 30 – Girls only

This programme is designed for young girls to gain the opportunity to find out what type of work may be open to them, how to make career decisions and how these may fit in with their future aims. The workshop highlights which job roles can suit individual personalities; these roles are not restricted to STEM industries. This exercise highlights roles that use STEM knowledge.

SNAP CIRCUITS

Audience: KS2 or KS3

Time: approximately 1 hour

Class size: maximum 30

A hands-on introduction to electronics. This innovative kit contains over 30 colour-coded, real circuit components that snap together to create working electronic circuits and devices.



NATIONAL ACTIVITIES

MARSBalloon - A Thales Alenia National STEM Project

MARSBalloon is an exciting project for UK primary and secondary schools students to carry out Mars science experiments without having to put on a spacesuit!

Our next flight in 2019 will carry 100 student experiments to an altitude of 30km, more than twice the height of commercial airliners, where they will be above 99% of Earth's atmosphere. Along the way, they will experience conditions very similar to the surface of Mars, including temperatures of -50°C, pressures 1/100th that of sea level and an increased dose of radiation. The experiment will allow students to test the response of electronics, materials, plants and even food, to the conditions similar to those of Mars, helping future explorers to prepare for this environment.

The whole flight lasts approximately four hours, and the MARSBalloon team will chase after the balloon to recover the experiments after landing, allowing them to be returned to the students for analysis.

MARSBalloon is part of the Future Martians STEM programme and is supported by Thales in the UK and run by STEM ambassadors from Thales Alenia Space.

The MARSBalloon project is open to all schools in the UK and is a great project to run in STEM clubs or science classes. There is no charge to take part other than the cost of the experiment materials and postage. For more information including videos, lesson plans and how you can take part in the project, visit www.thalesgroup.com/futuremartians.



PRIMARY ENGINEER AWARDS

Thales is proud to work closely with Primary Engineer on a variety of projects across the UK. We are supporters of the Leaders Award where students in Early years setting and primary and secondary schools are invited to interview an engineer, identify a problem, draw and annotate a solution to it on an A4 or A3 sheet and explain on one side of A4 (or less) why their solution should be manufactured by engineers.

For schools that do not have access to engineers who can visit their students, Primary Engineer run webex opportunities so students can talk to engineers across

the country. The award can be delivered across curricula and is free for schools to enter. All entries receive a named certificate. Shortlisted entries are displayed at regional exhibitions and awards presented to the best from each year group.

www.leadersaward.com

www.primaryengineer.com

PRIMARY
ENGINEER®



WORKSHOPS AND EVENTS

VISITING ASSEMBLIES OR CLASS TALKS

We have a number of graduates and apprentices who are happy to visit schools to talk to students about their experiences, job roles and the importance of studying STEM during assemblies or during specific STEM events at your school. For more information please contact STEM@uk.thalesgroup.com

VISITS TO THALES SITES ACROSS THE UK

A number of our Thales sites provide the opportunity for schools to visit and talk to our engineers about what they do. Please contact STEM@uk.thalesgroup.com for more information. Please note that a site visit normally lasts between 1- 3 hours depending on our employee's availability and for a maximum of 25 students.

CAREERS FAIRS

Throughout the year we attend a number of careers fairs at schools and colleges. Please contact STEM@uk.thalesgroup.com if you have a careers fair running in your area.



EVENTS AND OPPORTUNITIES

BIG BANG

Each year Thales attends the National Big Bang Fair in Birmingham. The four day event is designed to inspire young people in all STEM subjects and it offers a great opportunity for schools to take large groups to such successful event. For more information please see www.thebigbangfair.co.uk and come and visit our stand.



WORK EXPERIENCE OPPORTUNITIES

Thales run work experience programmes at a number of our sites during the course of a year. The week long programme is designed for students to experience the world of work as they take part in a team to complete a project. If you have students who are interested in a work experience opportunity within the engineering industry for more information www.ukearlycareers.thalesgroup.com/



ACCESSING STEM ACTIVITIES

HOW TO ACCESS OUR THALES STEM ACTIVITIES

We want to support as many schools as possible, however due to the location of our Thales sites across the UK we are unable to support everyone. For schools that we cannot reach please access our downloadable presentations and materials along with our UK wide Mars Balloon project and the Primary Engineer Leaders Awards. These materials and activities are available to everyone where ever you may be based.

Before contacting us for support please ensure you meet our schools criteria of engagement:

1. Is your school less than 25 miles away from a Thales site? (please see page 14 for a list of Thales sites)
2. Do you have an identified member of staff within your school who is responsible for extracurricular STEM activities and who can be a key contact between Thales and your school?
3. Do you have access to a suitable space or classroom with white boards, projectors and ability to move tables and chairs around to suit the activity?
4. Are school staff available to support the Thales STEM ambassador with the activity and classroom management? Our employees are not trained teachers and are there to enhance young people's knowledge and experience not to cover classes or deliver the curriculum.
5. Unless we are delivering a gender specific activity, when working with mixed schools where possible we request that we work an equal mix of male and females students.

If you meet the following criteria please contact us via email STEM@uk.thalesgroup.com and inform us of the following:

1. The name of your school and full address
2. The name, email address and contact number of the key person within the school responsible for arranging the event
3. Your nearest Thales site i.e. Crawley, Templecombe
4. Provisional dates of when you would like the event delivered, **please note we will endeavor to meet your**

date, however we deliver events in schools on a first come first serve basis.

5. How will this activity benefit your school or year group, Is it part of a bigger STEM programme within your school or for a specific event?
6. How many students will be attending?
7. Have you engaged with Thales before?

Once we have received your request someone will be in touch to discuss how we can support you.



THALES UK SITES

Thales sites with trained volunteers are at the following locations:

Belfast - Alanbrook Road, Belfast BT6 9HB

Cambridge - 1 Station Square, Cambridge CB1 2GA

Cheadle - Ashurst Drive Bird Hall Lane, Cheadle Heath, Stockport, Cheshire SK3 0XB

Crawley - Manor Royal, Crawley, RH10 9HA

Glasgow - 1 Linthouse Road, Glasgow G51 4BZ

London - Quadrant House, 4 Thomas More Square, Thomas More Street, London E1W 1YW

Reading - Green Park, 350 Longwater Avenue, Reading, Berkshire RG2 6GF

Templecombe - Horizon House & Ocean House, Throop Rd, Templecombe, Somerset BA8 0DH



LINKS AND INFORMATION

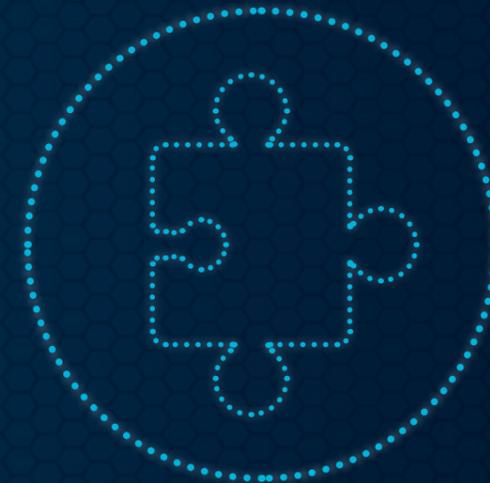
Thales STEM website: www.thalesgroup.com/uk/stem

Thales Early Careers Website: www.ukearlycareers.thalesgroup.com

Mars Balloon Project: www.thalesgroup.com/futuremartians

STEM Learning: www.stem.org.uk/

Primary Engineer: www.primaryengineer.com/



www.thalesgroup.com

THALES

Manor Royal, Crawley,
West Sussex, RH10 9HA
United Kingdom
Tel: +44 (0)1293 580 000 – Fax: +44 (0)1293 580 000
www.thalesgroup.com/uk