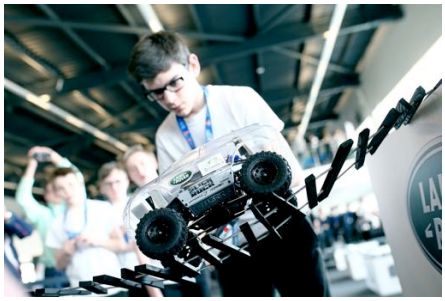
Inspiring students with innovation and application

Engaging students in STEM subjects is tricky. Thankfully, Engineering in Motion has it covered in the form of two very successful initiatives: the Land Rover 4x4 in Schools Technology Challenge and the F1 in Schools STEM Challenge. The challenges are both split into three classes: Entry (free to enter), Development and Professional (both just £75 to enter), with the scope for all abilities, skill levels and ages to participate. It sounds simple, but the breadth of science and engineering employed along the way is where the challenge lies…

Lee Brook, Head of Work Related & Enterprise, Head of D&T at Castleford Academy, West Yorkshire. *"Since 2009 I have run a team in F1 in Schools and 4x4 in Schools. The Programmes are invaluable in helping students develop their engineering and personal skills as well as giving them multiple options in terms of career progression. All of the graduating team of 2016 have gone on to study engineering, some are heading for University and others have opted to complete local vocational courses and apprenticeships."*

4x4 in Schools kick starts engineering passion



Inspiring the next generation of engineers with the practical challenge of designing and building their own remote-control all-terrain vehicles, the Land Rover 4x4 in Schools Technology Challenge captures the imagination of students, while providing teachers with the opportunity to run a real-life automotive design competition with their students.

Teams navigate their vehicle around a bespoke Land Rover track replicating the capabilities of a full scale 4x4 vehicle. The course includes challenging road surfaces including water dips, rope and pipe bridges, rocks and steep inclines, which really get the heart racing! Your first decision is where to start:

Entry Class offers an introduction to vehicle design, aesthetics and concept modelling, resulting in the team showcasing their design for a super-cool, futuristic 4x4 vehicle.

Development Class builds on the foundations established in the Entry Class, incorporating basic electronic engineering into the vehicle development process.

Professional Class is aimed at experienced participants, challenges the teams to design and engineer their car from the ground up. Here teams can design and engineer complex systems including coding and autonomous functions, design and make their own drive train, suspension systems, steering and more.

F1 in Schools – taking careers up a gear

The F1 in Schools STEM Challenge uses the high-profile, glamorous and high tech world of fast cars, and one of the most popular sports on television, Formula 1, to engage with students, introducing them to engineering in a compelling and unique educational programme. Teams face each other head-to-head in a battle of wits and concentration on the F1 in Schools 20 metre elevated race track, where reaction times are just as important as the speed of your car; a real spectacle in itself! So where should you begin?

Entry Class offers a bite-sized introduction to designing the F1 car of the future, with a choice of manufacturing methods to suit any workshop. Teams present and race their concepts against rival schools for the title of F1 in Schools Regional Champions.

Development Class builds on the foundations established in the Entry Class, incorporating more challenging rules and regulations, along with more assessed project elements. Teams in the Development Class have the chance to earn their first taste of a National or even World Final.

Professional Class is where the future brains of F1 are formed, with a rigorous rulebook not too dissimilar to that of real Formula 1. Here teams are challenging to out-design, out-market and outwit their competitors with the slickest designs and most convincing all-round team performance.

Keen to get involved? Read our EIM Challenge FAQ's

How can I enter?

The challenges are open to young people between KS3-5 in schools, and 11-19 year olds in any out of school initiative, e.g. STEM Clubs, Scouts, Cadets, Guides and Youth Clubs. Teams can register via the competition websites (see below for details) and enter their team into a Regional Final to compete for a place at a National Final. National Champions from all round the world are then invited to the World Finals.

Why does it work in school?

The challenges can be used as an education tool or hook to engage students in STEM subjects. This gives both students and teachers the opportunity to develop key skills such as communication, presenting and team work, while forming the foundation for any career path students choose to follow. They can be delivered as stand-alone projects in schools and clubs, or embedded into the curriculum as a full Level 2 qualification using teaching materials mapped to AQA and OCR Qualifications.

What happens on the day?

At each event a panel of judges assesses the design and build of each team's vehicle, along with a full track session and a dedicated judging timetable for each competing team. Our events are a real day to remember, with students from all sorts of backgrounds and schools competing head to head in a battle of innovation and creativity. At the close of the day, we hand out our coveted awards to the best performers celebrate the achievements of all our competing teams.

How far can it take the students and teachers?

Straight into a career if your students work their way to the top of the competitions, where scholarships, mentor programmes and the chance to work alongside top engineers awaits.

Phil Cain, Head of Technology at Robert May's School in Hampshire. *"I've seen a real benefit of students competing in F1 in Schools - confidence, STEM skills, and personal growth – it's been great for them. I've also had the privilege of going to some great international destinations."*

If you have students with a passion for engineering, team work, marketing, design, presenting, business, science, mathematics or a mixture of the above, why not put them to one of the ultimate tests and take on the world with an Engineering in Motion STEM challenge?

For further information on these challenges visit www.4x4inschools.co.uk and www.f1inschools.co.uk

ENGINEERING IN MOTION
INNOVATIVE EDUCATIONAL PROJECTS

THE FORMULA 1 STEM CHALLENGE
IN SCHOOLS

LAND ROVER
ABOVE & BEYOND

4x4 IN SCHOOLS
technology challenge