Espire

STEM ON TRACK

STEM ON TRACK
PROGRAMME PROSPECTUS

Prospectus
2025/26

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WHAT WE DELIVER

55 Hours of core content per student.

100+ Gamified Educational Courses

39 Weekly, structured practical sessions

STEM On Track is a year-long, student-led STEM programme that combines real-world, hands-on learning with curriculum-linked digital modules in Science, Maths, and Design. With no planning required and no prior mechanical experience needed, students build a full-size racing kart using step-by-step video guides and learn the STEM theory behind each component through our interactive online Race Academy.

The programme is simple to run, fully supported, and designed to be delivered as a co-curricular club or timetabled lesson. It culminates in on-track racing events, including a Test Day, STEM Fair, and National Finals, providing unforgettable, real-world inspiration and practical experience.

BUILD

Each school receives a full kart kit and tools in September. Over 39 practical sessions, students follow step-by-step video tutorials to build their own kart from bare chassis to a fully assembled racing kart. The process covers real-world engineering skills, from installing braking systems to fitting engines. At the end of the year, teams dismantle their kart ready for the next cohort, ensuring the programme remains sustainable and accessible year after year.

Eco-Conscious Kart

- Second-hand tyres, pre-used but with plenty of life left.
- Carbon Neutral Synthetic Fuel, the ultimate fossil-fuel alternative.
- Fully dismantle-able system, for year-on-year use.

Learner Focused Design

- Transparent Hydraulic System, to see it working.
- Deliberately unfinished engine, to be understood and completed.
- Adjustable pedal system to fit different sized drivers.

SCHEME OF LEARNING

2026 Programme Proposal

Half-Term	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6
AT1	Assemble + Fit Axle Bearings Friction	Assembling Brake Disk Energy Transfer	Centering Rear Axle Symmetry	Positioning Stub Axles Bearing Angles	Centering Steering Column Rotation	Fitting Track Rods Pivots & Moments
AT2	Fitting Steering Wheel Ackermans Steering Radius & Circles	Securing Floor Tray Vibration	Mounting Sprocket Carrier Circumference	Fitting Rear Bumper Elastic Potential Energy	Constructing the Pedals Levers	Fitting Brake System Cylinders + Volume
SP1	Constructing Brake Line Measurements	Fitting Brake Bar Third Law of Motion	Bleeding the Brakes States of Matter	Assembling Throttle Cable Fire Triangle	Completing the Seat Fitting Percentages	Mounting the Side Pods Polymers
SP2	Mounting the Front Pod Impact Force	Fitting Nassau Panel Air resistance and aero-dynamics	Fitting the Air-Filter & Exhaust Combustion	Fit Clutch & Spark-Plug Centrifugal/ Centripetal Force	Securing the Engine Mount Properties of Metals	Aligning Sprocket & Chain Ratio
SM1	Drilling Chain Guard Inertia	Fitting Wheels & Tyres Compound Measures	Applying Sticker Kit (1/2) Heating & Softening	Applying Sticker Kit (2/2) Adhesives & Glue	Starting Engine Magnets / Circuits	Bolt Check Torque
SM2	Inspect & Clean Emulsifiers	Refine Front Tracking Trigonometry	Transponder Holes Place Value	Setting Tyre Pressures Correlation	Ajusting the Wheel Track Centre of Gravity	Adjusting the Ride Height Proportion

Maths Curriculum Science Curriculum Curriculum Point

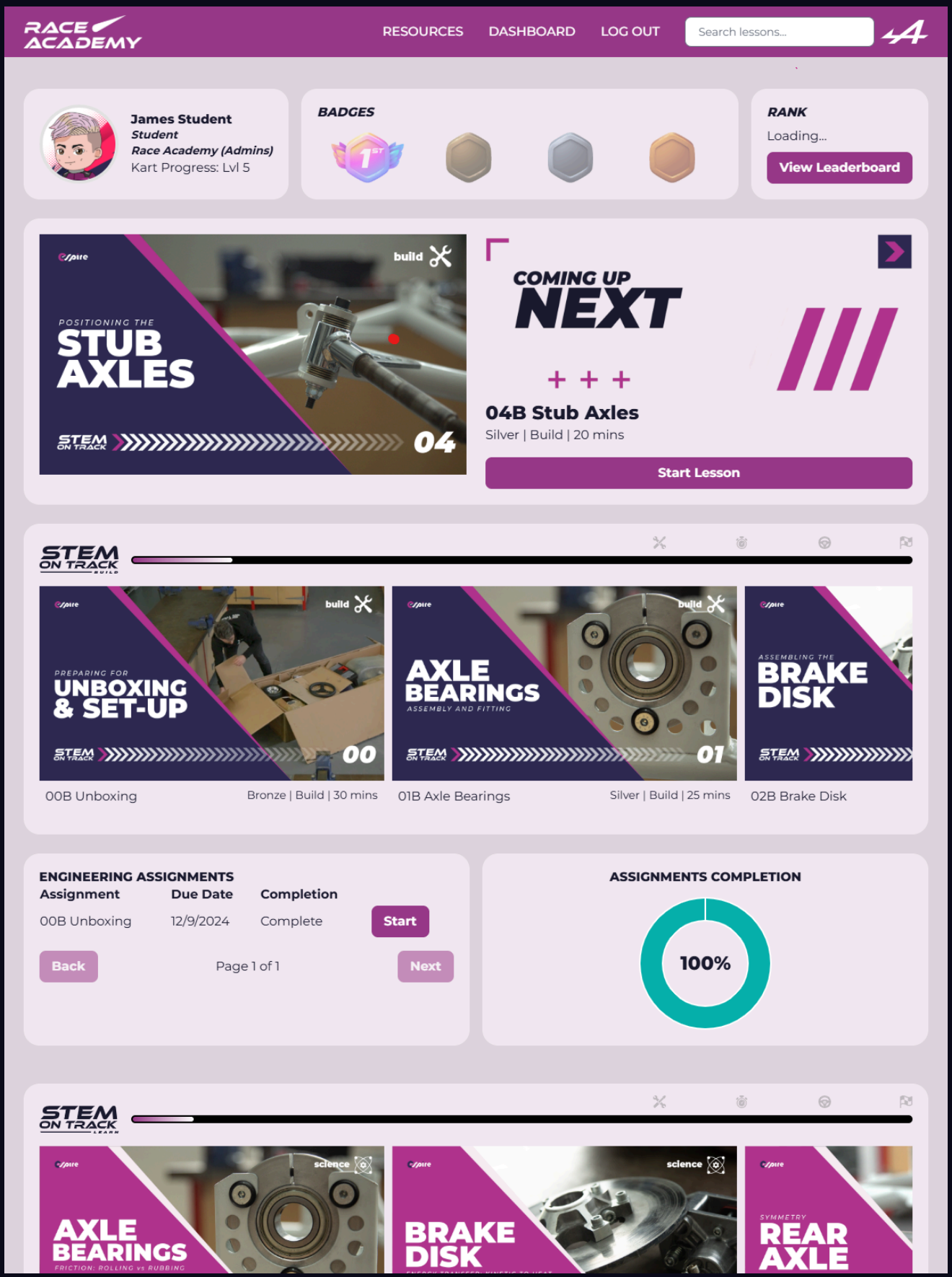
LEARN

Every build practical is backed by curriculum linked, STEM learning, connecting classroom theory to engineering, teamwork, and problem-solving.

This is facilitated through the Race Academy Learning Management System (LMS). Which keeps your team organised and supported with:

- Easy-to-follow modules that can run as a co-curricular club or timetabled lesson
- Student progress tracking, quick quizzes and structured assessment for learning
- Curriculum-mapped additional roles including, Desinger, Engineer and Marketeer

Race Academy is where your team learns, builds, and preps for race day, one module at a time.


RACE ACADEMY
RESOURCES
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Kart Progress: Lvl 5
BADGES
RANK
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build
POSITIONING THE
STUB AXLES
STEM ON TRACK
04
COMING UP
NEXT
04B Stub Axles
Silver | Build | 20 mins
Start Lesson
STEM ON TRACK
build
PREPARING FOR
UNBOXING & SET-UP
00
00B Unboxing
Bronze | Build | 30 mins
AXLE BEARINGS
ASSEMBLY AND FITTING
01
01B Axle Bearings
Silver | Build | 25 mins
ASSEMBLING THE
BRAKE DISK
02B Brake Disk
ENGINEERING ASSIGNMENTS
Assignment
Due Date
Completion
00B Unboxing
12/9/2024
Complete
Start
Back
Page 1 of 1
Next
ASSIGNMENTS COMPLETION
100%
STEM ON TRACK
science
AXLE BEARINGS
FRICTION: ROLLING vs RUBBING
BRAKE DISK
SYMMETRY
REAR AXLE

RACE

After months of building, learning, and solving problems together, it's time for teams to put their karts and their teamwork to the test.

REGIONAL TEST DAYS

- Students bring their self-built karts to the track for the first time, get hands-on driving tuition, and make those all-important tweaks. It's where the learning hits the tarmac.

NATIONAL FINALS

- The top 75 to 100 teams qualify for our flagship event at Whilton Mill. They race head-to-head for the title. Every team, even those that didn't qualify, is invited to attend the event, explore the STEM Fair, and celebrate the journey.
- Alongside the racing, students meet real people working in STEM and motorsport. From engineers to designers to data analysts, it's a window into the world they've been learning about all year.

STUDENT JOURNEY

Kart-kit + Tools arrive in school and students login to the Race Academy LMS.

SEPT

Students build their kart step by step, whilst completing curriculum linked learning modules.

The students find sponsors, design their kart graphics kit and apply it to their bodywork.

JAN

MAY

Each team tests their racing kart for the first time at our Test events, whilst also attaining their racing licenses.

The climax of the competition, schools from around the country compete in a final endurance race, and discover endless career opportunities at our National Finals and STEM Fair.

JUNE

DESIGN

Every team designs their own kart graphics, turning blank bodywork into something bold, brilliant, and uniquely theirs. From colours and logos to full wraps, students learn what it takes to make their team stand out, on and off the track.

But design isn't just about looking good. We also teach students how to attract and work with real-world sponsors. Our five-module sponsorship course includes editable proposal templates, email scripts, explainer videos, and guidance on how to create a winning pitch.

Sponsors aren't just names on the side of the kart, they're part of the journey. All sponsors receive VIP tickets to attend race events, meet their team, and see the impact of their support first-hand.

Our National...

PARTNER

We're proud to be working with the BWT Alpine Formula One Team, who support STEM On Track as our official National Partner. Their involvement gives students something you can't manufacture: real-world relevance. From engineering insight to exclusive access, their backing brings elite motorsport directly into the classroom.

Students gain access to industry role models, learn how top-tier teams operate, and even get to meet BWT Alpine Formula One Team's staff at our National Finals. For some learners, it's the first time they've ever seen themselves in STEM and that moment matters.

Together, we're building a pipeline that connects education, inspiration, and opportunity. Because talent should decide your future, not your postcode.

BWT ALPINE FORMULA ONE™ TEAM | STEM ON TRACK

STEM ON TRACK

Whether you're fired up to bring STEM On Track to your school, want to talk through the programme, or just need to know how it all works, get in touch.

✉️ Email us: info@espireeducation.co.uk

📞 Call James: 07585 721939
📞 Call Adam: 07814 274241

Book in a catch-up with our Founders

📅 James | Adam