



STEM KART



1 - Inspiring Future Engineers

Thank you for your interest in Stem Kart, a unique and effective way to teach STEM subjects to pupils.

Using electric battery powered Go Karts; we provide a hands on learning approach towards secondary education for pupils across the UK with a focus on KS3 & KS4

STEM Kart has developed this initiative to bring STEM to life for students. Our aim is to engage and encourage young people to think about future careers in STEM.

What is STEM Kart?

- This is the first project of its kind. Our Go-karts are the perfect tool to engage young people in their education allowing them to learn and have fun in a stimulating environment.

- We provide three prepared lessons for schools, two lessons take place in the classroom, the other is a practical experience where pupils get to drive the go-karts. We deliver the practical lesson while giving you all the resources to deliver the supporting lessons which take place either side of the practical.
- Pupils work together in teams to understand the importance of STEM and the impact it has on our lifestyle, the environment and everyone's future.
- Schools and colleges all across the UK can all benefit from our services, we deliver the practical initiative on site at your school and provide all the equipment, staff and resources.



Future Engineers

- Our mission is to enthuse and inspire young people into pursuing careers in STEM.
- With a national shortage in technicians, engineers, scientists and innovators we are at the forefront of inspiring the future in every discipline.
- We have a key focus on green technologies so we can accelerate the pace of change. Diversity in STEM is one of our highest priorities.
- We want to help reduce the impact of climate change and believe in the power and importance of educating young people in the importance of clean transport. That's why we're educating the future STEM ambassadors and playing our part in leading the world to reduce its carbon footprint.



2 - Diversity in STEM is one of our highest priorities

Keeping It Green

- We want to help reduce the impact of climate change and we believe in the power and importance of educating young people in the importance of clean transport. That's why we're educating the future STEM ambassadors and playing our part in leading the world to reduce its carbon footprint.
- Our vehicles are manufactured by the world leader, Segway. As a leader in electric mobility, it's always been Segway's vision to produce environmentally friendly short-distance transportation alternatives.
- Today, more and more people are using Segway type products as an eco-friendly alternative for many of the short journeys that are typically made by car. Besides that, zero-emissions are given off during operation.



3 - Pupils will have the opportunity to drive the go-karts

Video



<https://sway.cloud.microsoft/XGSCrLWelDQ7bzzW#content=YX54Pl6dP0dZyi>

4 - Video - get a brief introduction to STEM Kart

Why STEM Kart

- Pupils will develop their understanding how electric vehicles work and how we can improve them. They will understand the impact of STEM and the development of technology, whilst ensuring that we protect the planet.
- Tasks are designed to help everyone works as a team to improve individual and group performance, whilst improving individual self-esteem. We use all areas of STEM to inform our learners and develop individual's strengths.
- Activities are run under controlled conditions with speed limited to under 15 miles an hour. Pupils share the inflatable track with only one other driver, there is no racing. All participants will be fully trained and kitted out with a helmet and seatbelt and is guaranteed a lesson he/she will not forget. All operations will be fully insured, and risk assessed with full endorsement of the school
- STEM Kart is delivered by Big Bang Promotions. We are a company that for over 30 years has been delivering activities and experiences with safety as one of our fundamental values, it is at the core of how we operate. We would like your pupils to experience our STEM Kart initiative and be part of a new concept in teaching. All pupils will have the chance to ride a Go-Kart in a large space, usually your sports hall or if good weather a suitable outdoor area within the controlled environment of our inflatable track.



5 - Speeds are limited and our staff always ensure pupils are safe

Don't worry there will be no racing and our inflatable track keeps everything controlled!



6 - Lesson 2 - Pupils get to drive the Go Karts as well as complete their workbooks

STEM Kart enables pupils to learn that STEM pervades every part of our lives.

Science is everywhere in the world and the science of today is the technology of tomorrow.

Technology is continuously expanding into every aspect of our lives.

Engineering surrounds us, but also tackles the challenges of the environment and our futures.

What Do You Receive As A School?

Three lessons including a lesson where every pupil is able to drive the go-karts

- You will be provided with the following material to deliver each of the lessons
 - Lesson plans
 - Powerpoint presentations for use in the lesson
 - Resource, workbooks for printing and distributing to pupils
 - Supporting documents such as consent forms
 - All equipment and staff for the delivery of the "experience" element where pupils will drive the Go Karts

Lesson 1 - Classroom

- Ergonomics, this lesson develops an understanding of anthropometrics and ergonomics on products and vehicles. It involves pupils designing a Formula One car steering wheel. Pupils gain a better understand of how STEM is useful in everyday life and what careers it can lead to.
- Lesson to be completed ideally one week prior to the practical day mentioned below



Lesson 2 - Practical Day

- Pupils will drive the go-karts
- One hour session which involves splitting into groups and completing the associated workbooks.

- Pupils develop an understanding how electric vehicles work and how they can improve them. They look at how they can improve their vehicle and lap times, whilst documenting the findings.
 - Inflatable Track - provides a safe operating area
 - Go-karts - battery powered and speed restricted for pupils to drive
 - Our Staff
 - Qualified technology teacher liaises with your teachers to help deliver the educational element on the day
 - Instructors - Our instructors will brief pupils on how to operate the go-karts as well marshalling the track area
 - Risk Assessments and method statements
 - Insurance
-

We can process up to 150 pupils over a five hour period (start times can vary to suit individual schools requirements)

Class size 30 (max) for each one hour session

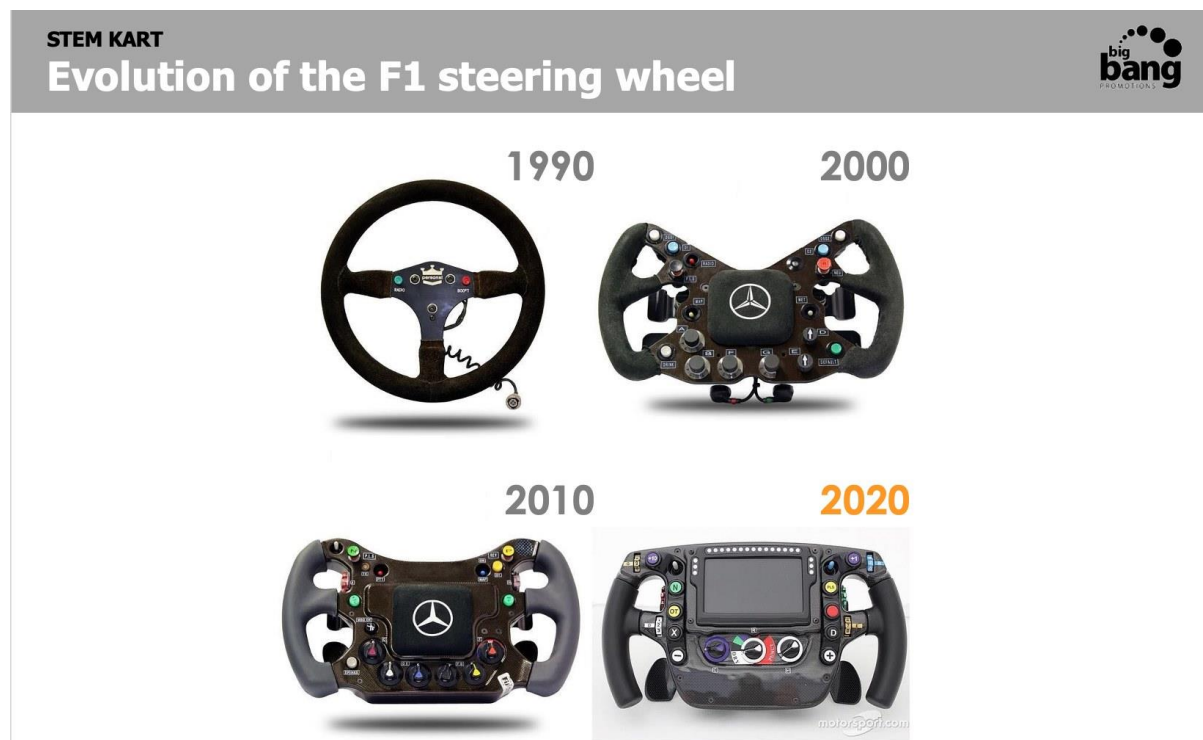
Lesson 3 - Classroom

- Aerodynamics, in this lesson pupils discover how forces impact on the performance of a vehicle to develop an understanding on aerodynamics and its impact on products and vehicles. Pupils discuss what elements change a vehicles performance and then design their own Go-Kart to improve its capabilities.
- Lesson to be completed ideally one week after the practical day



STEM Kart has developed this initiative to bring STEM to life for students and to engage and encourage young people to think about future careers in STEM.

Lesson 1 - Ergonomics



Powerpoint Presentation

To be delivered in the classroom ideally one week before go-kart practical

- [Lesson 1- Ergonomics - Click to download](#)

Teachers Resource

Material to be printed and handed to pupils to support the lesson

- [Lesson 1 - Resources - Click to download](#)

Lesson Plan

Road map to the lesson

- [Lesson 1 - Lesson Plan - Click to download](#)

Lesson 2 - Practical

This lesson takes place in the sports hall or outdoor area with the go-karts, the class is required to split into groups of no more than six and the below will be completed while each groups takes their turn on the go-karts. The groups have a go-kart on display to help with completing their booklet.

Teachers Resource

Material to be printed and handed to pupils to support the lesson

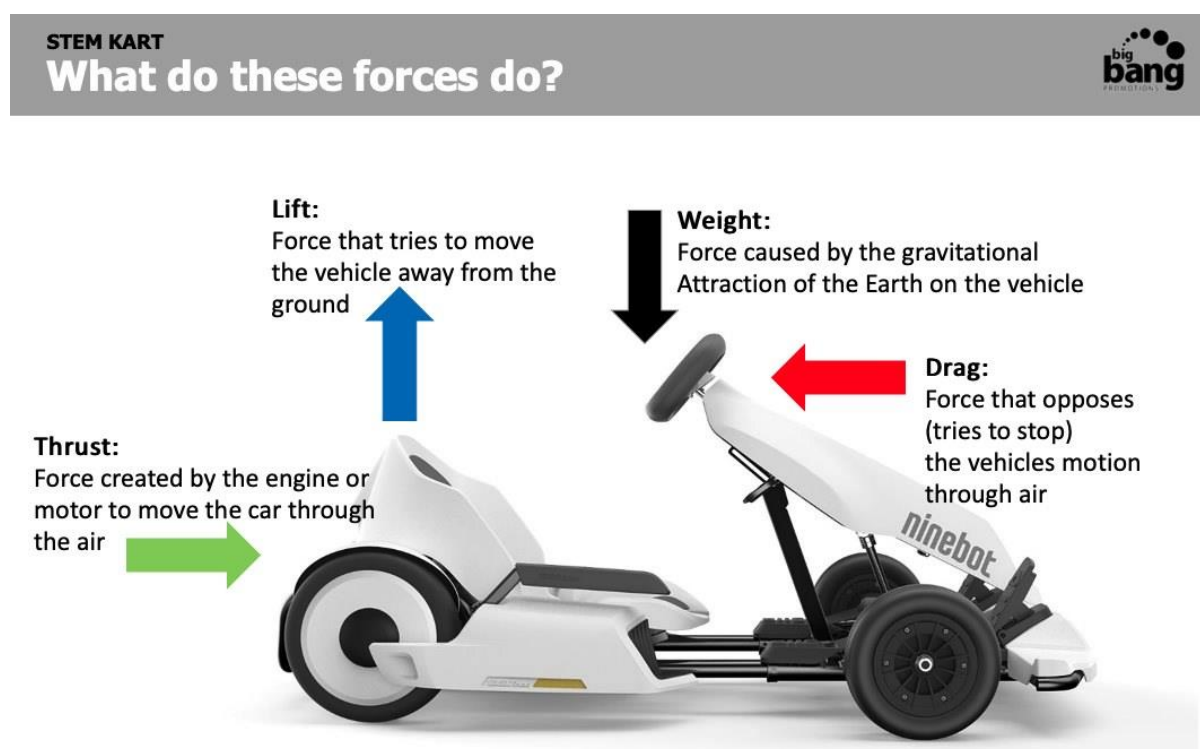
- [Lesson 2 - Resources - Click to download](#)

Lesson Plan

Road map to the lesson

- [Lesson 2 - Lesson Plan - Click to download](#)

Lesson 3 - Aerodynamics



Powerpoint Presentation

To be delivered in the classroom, ideally one week after go-kart practical

- [Lesson 3 - Aerodynamics - Click to download](#)

Teachers Resource

Material to be printed and handed to pupils to support the lesson

- [Lesson 3 - Resources - Click to download](#)

Lesson Plan

Road map to the lesson

- [Lesson 3 - Lesson Plan - Click to download](#)

Support Documents



[Consent Form Doc](#)

[Prior to event - Key points](#)

[On the day - Key points](#)

Key areas covered in STEM KART



- Team work
- Aerodynamics
- Forces and their impact on objects.
- Design Challenges
- Product Development
- Understanding modern technology developments
- Building resilience
- Design and Development
- F1 Technology
- Ergonomics & Anthropometrics
- Mechanisms and Linkages
- Data analysis and measuring averages
- Information gathering
- Self-evaluation
- Racing lines and angles
- Electric vehicle technology
- The impact of STEM on society
- Environmental impact of vehicles
- Improve individual and group performance
- Building individuals self-esteem
- Setting targets and building on strengths



7 - Fun and engaging learning

Bespoke Packages

Our STEM Kart packages can be tailored to suit your requirements for areas such as pupil premium and disadvantaged children.

How to book stem kart for your school?

If you are ready to book please contact Jon to check the availability of dates and prices which do vary depending on where in the UK you are located.

Jon Snape

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01226 982770

jon.snape@bigbang-promotions.com

All we need to secure your STEM Kart experience is a signed booking form, a small deposit with the balance not due until a week before your event.



Who are Big Bang Promotions

Big Bang Promotions are experts in delivering adventure activities and event-based roadshows

Big Bang Promotions operate in the following sectors and areas

- Gift Experience Days
- Education
- Charity Fundraising
- TV & Film
- Brand - Experiential Marketing



- 30 years experience in events and delivering adventure activities
- Safety as a fundamental and core value
- Event roadshow specialists, we operate over 500 individual event days a year
- Specialist teams for project delivery with experts in adventure products, education, specialist event staff, vehicles and logistics
- Experience working with high profile venues and clients internationally
- Extensive experience with television and film including live broadcasts. Ability to provide activities and experiences to journalists whilst delivering key points and messages
- Established infrastructure with a B2C division, providing long term stability and auxiliary services such as, centralised call centre, in house bookings and reservations system, logistics teams and an ability to process high volumes of people.
- We process over 250,000 people a year through our B2C operations



Our Work

- [UK Bungee Club](#) - Owners
- [Segway Events](#) - Owners
- [BBC Top Gear - Car Bungee Jump](#)

- Segway's
 - Olympic closing ceremony provider
 - Event planner for 400 event days a year for
- Pink (Singer) - Zip Wire onto stage Berlin
- Beyond the Ultimate Ultra Marathon Series - Founder
- Electric GoKart - mobile roadshows

