

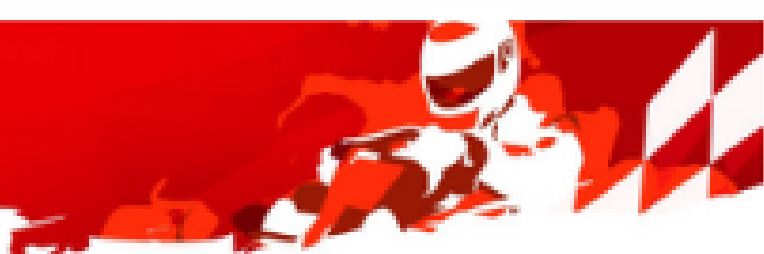


Using the British Schools Karting Championship as a vehicle for STEM club learning

Entry into the British Schools Karting Championship is a highly effective and motivational vehicle for STEM club activities. With entries opening for the championship in September, the racing starting in January and the finals at the end of March, the opportunity to undertake extended STEM study into Karting and Kart driving is clear.

The following programme of STEM study is recommended:

STEM Club Session	Activity/ Study Area	Content	Practical Activities
1	What is the BSKC?	Analysis of the rules of the competition Makeup of the team Location of the regional heats, semi finals and finals Organisation and planning required to compete Cost of competing analysis	Mapping of journey required to compete to the finals Cost analysis of total cost of competing
2	The difference between Karts and road going cars	Size Form Function Properties and Uses Suspension and comfort Safety Considerations	Internet research for properties/ uses and design considerations of cars and karts Production of Safety rules for Kart drivers and spectators
3	Types of kart and their uses	Evaluation of the different types of kart available in the UK Analysis of top speeds, engine sizes and types of circuits raced on	Internet research of Karts types Database production of kart types, specifications, engines and top speeds Mapping of local, regional and national kart centres
4	Chassis design	Standard kart chassis design Chassis flexing to allow bump control Seat and engine fixing Methods of construction and manufacture	Demonstration of pipe bending, metal jointing Testing of tube flexing Design of seat fixings
5	Steering design	Evaluation and analysis of kart steering design, including mechanism, steering arms and mounting	Experiment on effects of changing the length of a steering arm on the "speed" of the steering Experiment on the effects on required strength of changing the diameter of the steering wheel
6	Unwanted Friction - Axles and Bearings	Study of methods and structures to reduce the friction within the drive train and mountings	Experiment of friction produced between axles in tubes and bearings Experiment of the effect of oil and grease in reducing friction
7	Necessary grip - Tyres and cornering	How do tyres work? Which tyres do what in corners?	Experiment on friction produced between rubber and different types of road surface Analysis of cornering effect on tyres
8	Motors	The internal combustion engine – 2	How a motor works



	Personal appraisal	
Performance Evaluation	Development of managerial and leadership skills	Personal Development Enterprise
Personal organisation	Management of own learning Planning and management skills	Functional Skills
SEAL	Understanding of the wider aspects of performance motivation Providing relevance to learning	SEAL/ Aspects of performance
Gifted and Talented	Curriculum enhancement Development of learning routes over and above the ceiling levels at each key stage Personal skill development	Gifted and Talented
Cross Curriculum Development	Cross subject learning Partnership planning for functional and soft skills Development of enterprise education within the curriculum	KS3 curriculum development Developing a relevant/ personal curriculum Enterprise Education
Citizenship	Understanding the green agenda Communication and debate	PSHE Functional and Foundation skills development
School Council	Development of Managerial and leadership skills Development of organisational and enterprise skills	School Council Personal Development Enterprise
Problem Solving/ Decision Making	Development of abstract and applied thought Application of the steps of enterprise into the wider curriculum	Functional Skills Reasoning and thinking skills
Driver Selection	Understanding of the recruitment process including job description and person specification production Understanding of the candidate selection process and the need to judge using objective criteria	Enterprise
Health and Fitness	Understanding of the need to be healthy to be competitiveness	Healthy School