Supporting and Developing Learning through the British Schools Karting Championship

Why can't learning be motivational and exciting? Motorsport is the glamorous and exciting sport in the world – watched by millions at the top levels. Most top flight racing drivers start their career in karting – Lewis Hamilton and Jenson Button did exactly that. The British Schools Karting Championship provides not only the opportunity to compete in motorsport through the school but also provides the school with a platform to use the motivation and excitement of motorsport competition to support learning and curriculum delivery. Linking the BSKC with the curriculum brings relevance and application into the lessons as well as providing your students with an absolute reason for learning – "it will help us to win!"

By applying the classroom learning to the competition, schools can utilise the championship to enhance the learning through real life applications. The championship can be used to cover a large number of subject areas as well as developing personal, functional and core skills. Students can then assess the application of their knowledge and understanding through evaluating their performance on the track and how they could use their learning to improve their competitiveness.

By using the Championship as a base for project development, including problem solving, the competition element can be transferred to maximise learning outcomes. Requiring students to work in their teams in subject specific situations enables students to develop understanding, knowledge and application without the false ceiling of National Curriculum of examination limits. Finding an advantage through learning is an inherent part of competition and students will take learning as far as they are possible in order to enhance their chances.

With the lessons connected with the championship either posed as problems to be solved or opportunities to improve competitiveness through knowledge and understanding, schools can take the opportunity to use the motivation and determination championship brings to boost and develop personal learning effectiveness. Research has shown that the biggest contributor to performance is motivation.

By tackling the problem of improving competitiveness through learning, the teacher/ student relationship can be turned towards a true partnership of discovery and learning – there are no correct answers – only better ones! What works for some may not work for others. How can existing solutions be improved to maximise our own performance? Motorsport competitiveness requires all members of the team to operate at maximum effectiveness, all roles are crucial to achieving the targeted performance.

The core content of knowledge and understanding required to compete at the highest level is predominantly contained within Science, Technology, Engineering and Mathematics, thus bringing STEM subject study to life. By using the Championship as a base for the theoretical study of Sport and Sports science enhances the required curriculum and supports examination studies.

Using the Championship to become the stimulus for discussion of key issues in Citizenship enables students to bring first-hand experience to the discussion.

Details of how the championship can be used as a platform to enhance learning, broken down by subject area, are shown below:

Learning Area	Application
Science	How can I go faster? How can I stop quicker? What makes the kart go/ stop? Measurement and calculation Using kart data to find outcomes Shapes and relative strength

	Useful and non-useful friction Grip and braking Increasing grip Measuring reaction times Factors affecting reaction times Pedals, steering wheels as control systems/ levers Braking Systems – Hydraulics in action Drive train ratios – using gears to maximise speed
Technology	Chassis design brief Possible materials and their properties Specification analysis and performance Joining metal to metal, bolts, rivets Bending and shaping
Maths	Measuring and calculations from lap times Analysis of different drivers/ teams Using raw data to search for patterns Percentage changes needed to beat the opposition
Engineering	Analysis of need/ possible solutions – the kart chassis Bending, shaping, joining – methods of making the chassis Design development to maximise performance (brief, production planning, quality control) Levers and their effect in control mechanisms – pedals, wheels, pulleys, drive systems Steering control and kart design Reducing friction, rolling vs. rubbing Lathes and Milling machines – accurate machining of parts Cable/ Electronics Types of engine, Drive systems Hydraulic systems Braking control Adjustments and outcomes Setting the machine for optimum performance
Sport	Understanding the rules of the sport – competition and safety Methods of gaining an advantage Fitness needs of motorsport Developing fitness Building strength/ developing stamina Applying Scientific knowledge and understanding to increase competitiveness Safety requirements for the organisers, controllers and spectators Specialist safety needs for the drivers
Citizenship	Person Specifications for team members Methods of judging human skills and performance Event planning How can motorsport be green? Should motorsport be made to be green?