F1 in SCHOOLS

(A Program to Interest Students in Science and Technology)

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The Mission: ***To help change perceptions of engineering, science and technology by creating a fun and exciting learning environment for young people to develop an informed view about careers in Engineering, Science and Technology.***

F1 in Schools™ aims to help change the perceptions of engineering, science and technology by creating a fun and exciting learning environment for young people to develop an informed view about careers in engineering, science and technology.

F1 in Schools™ is a not-for-profit organization that operates solely on the support of sponsors and partners. The initiative brings to education an exciting learning experience for students and teachers alike, challenging negative stereotypes associated with engineering in a fun and positive way. The challenge inspires students to use IT to learn about physics, aerodynamics, design, manufacturing, branding, graphics, sponsorship, marketing, leadership/teamwork, media skills and financial strategy, and apply them in a practical, imaginative, competitive and exciting way.

The F1 in Schools™ Technology Challenge

The program was introduces to the UK in 2000 and has expanded to 20 countries, with over 2 million students taking part around the globe. The students are challenged to design a model CO_2 powered F1™ Car of the future using CAD (Computer Aided Design) package. Once the cars are designed, they are analyzed using advanced CFD (Computational Fluid Dynamics) software in a virtual wind tunnel. The fixed design is then transferred into CNC (Computer Numerical Control) language using a CAM (Computer Aided Manufacturing) Package. Cars are then manufactured on a CNC machine.

The Challenge

Students are required to test their designs before attending regional or state competitions. Schools without the required equipment to make their final model can link up to a certified manufacturing center and have their model car machined. There are various “Manufacturing Centers”. Teams must also produce supporting evidence of their design in a folder including an orthographic projection of the car and a color isometric drawing or 3D rendering of the teams’ final idea.

Industry Support

Autodesk, Denford, and Pitsco have teamed with TSA (Technology Student Association) to introduce students to industry-standard software and equipment that help them relate academic and technical subjects and put them into a real-life working environment, with the hope to help them make informed career choices. The teams work with 3-D CAD/CAM software and computational fluid dynamics (CFD) software as they strive to build the fastest F1 car of the future. They design everything from the car body to the wheels and axles, and they assemble the components after generating drawings of the race cars. The cars are raced on an 80-foot track and are powered by CO_2 cartridges. The cars reach speeds of close to 50 mph with the world's record elapsed time of 1.082 seconds.

Competition

Middle school and high school teams, of 3 to 6 members, make up teams that compete at state competitions to qualify to compete at the National Championships.

The National Championships were held at the Technology Student Association (TSA) Conference in Dallas, TX, June 21-25, 2006. Twenty-nine middle and high school teams composed of no more than six members each designed, analyzed, made, and tested their F1 race cars. In the middle school division, the first-place prize went to Breckinridge Middle School, Virginia; second-place prize was awarded to Jefferson Middle School, Tennessee; third-place prize went to East Cobb Middle School, Georgia. In addition, Bloomsburg Area High School, Pennsylvania, was the top winner in the high school division; second place was awarded to Morgantown High School, West Virginia; and third place was awarded to Mount Vernon High School, Washington. Winners of the Judges' Choice awards were: Bloomsburg Area High School, Pennsylvania, first place; Breckinridge Middle School, Virginia, second place; and East Cobb Middle School, Georgia, third place. The Pitsco Fastest F1 Car Award was presented to Bloomsburg Area High School, Pennsylvania. The Autodesk Inventor Award was presented to Breckenridge Middle School, Virginia. The Denford Manufacturing Award was presented to Heritage High School, Colorado. Judging was based on safety, aerodynamics, engineering, aesthetics, quality and manufacture, race time, and presentation. Students also created a portfolio and gave an oral presentation of their work to a panel of judges.

Bloomsburg Area High School, Pennsylvania and Breckinridge Middle School, Virginia represented the United States in Melbourne, Australia, in March 2007, at the third annual F1 in Schools World Championships.

For more information, visit www.f1inschools.com.