

#### STEM PROJECT CURRICULUM

Students are introduced to the Greenpower Challenge with activities including the development of a program for their school's participation in the project. The Greenpower Challenge is an international STEM initiative of The Greenpower Education Trust.

#### GREENPOWER FORMULA 24

The Greenpower F24 gives students aged 16 to 24 years old an opportunity to build and race either a Greenpower Kit Car or, using supplied motor and batteries only, to build their own design (to meet Greenpower safety regulations).

#### CONTACT INFORMATION

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## Greenpower F24 Electric Car Project



The Greenpower F24 program and curriculum were developed to advance education in the subjects of engineering and technology for young people, ages 9 to 25. This is achieved through a unique hands-on project that enables students to design, build and race electric cars. As a local sponsor, RICM is proud to support Greenpower and help participating schools and students. Below you will find a link to information on the car kits, software, as well as tutorials and resources to ensure your success.

[www.F24greenpower.org](http://www.F24greenpower.org)

The Rhode Island Computer Museum (RICM) in partnership with the Exeter-West Greenwich Junior/Senior High School Library and the Chariho Regional High School Library were selected by OLIS for an American Rescue Plan Act (ARPA) funded grant to support learning. The partners participated in the Greenpower Electric Car Challenge, a hands-on project that encourages students to explore aspects of design and teamwork. Opportunities for hands-on, in-person

collaborative learning have been limited during the pandemic and this project gave over 50 students the opportunity to connect with peers, library staff, career and technical faculty, and mentors from the RI Computer Museum to build and customize a formula-24 car kit as a real-world exploration of STEM careers.



The Greenpower Electric Car Challenge was found in 1999 in the United Kingdom by the Greenpower Education Trust with the goal of enhancing the teaching and learning of Science, Technology, Engineering, and Mathematics (STEM) through a highly engaging and inspirational design-build-race competition. With an emphasis on sustainable, multi-disciplinary, and cross-curricular applied-learning, the Greenpower Challenge has categories covering the entire range of education. Participating teams may design and build their own car from scratch, working within Greenpower Education Trust's technical and sporting regulations.

#### TECHNICAL SUPPORT

RICM is a ready mentor to help your team during the design and building of your car. Mentors can be engineers from a local business, university and college students, or parents with expertise in this area.

#### FUNDING

Greenpower cars are eligible for CTE funding. We encourage teams to contact companies for potential sponsorship.

Students can help raise money by organizing fundraisers and

Parent Teachers Association (PTA) may be able to help with Funding and technical support.

#### SCRUTINEERING

A scrutineer will check the car over to ensure it is safe to compete in a race. The Greenpower scrutineering process checks that all elements of your car are safe and that the kit has been built according to the regulations.

The tallest driver, wearing a correctly fitting helmet, overalls, gloves must be present.

## KIT CAR OR BUILD FROM SCRATCH?



A Greenpower Kit Car is the perfect introduction to IET Formula 24 for a team. It will engage students, teach them the principles of building a car and can be built in around 15 hours - this does not include the time to design and build the bodywork. The IET Formula 24 Kit Car is self-assembly and the kit includes everything you need to get the car up and running, except bodywork. The bodywork is easy to design using programmes such as Siemens Solid Edge, a CAD program free to schools, which can be downloaded at:

[www.siemens.com/plm/solid-edge-highschool](http://www.siemens.com/plm/solid-edge-highschool)

*The Goblin Kit Car is designed for 9 to 11 year-old children and is ideal for schools and community groups. The kit comes with easy to follow instructions and the build requires only simple hand tools. Schools can run the project as part of the design and technology or science curriculum, or as an after school or weekend club – with the possibility of parent support. The children design and create their own bodywork once the kit has been assembled. This gives them the opportunity to be creative, look at a range of materials, and consider recycling car material.*

## Tool Requirements

- Basic hand tools: Hex wrenches 2mm-8mm and, sockets 8mm-14mm
- Clamps (multiple C-clamp or spring clamps)  
Hand Drill and bits 3.3mm, and 8mm  
Flat File, Gloves, Hacksaw, Hammer, Levels
- Phillips head and slotted screw driver set  
Pop rivet hand tool, Rubber mallet
- Safety glasses (1 pair for each team member)  
Saw horses (2) or small stable bench
- Security straps or clamps to secure car to saw horses or bench, Tape, Tire pressure gauge, Tire pump, Tire spoons
- Body material Coroplast and knife

#### SERVICES AVAILABLE

Technical Support  
Ordering and Delivery  
Maintenance  
Application Support  
Hardware Support  
Training

