



# FastTrack Racing Challenges



The FastTrack RC is a National STEM1 Challenge League. FastTrack RC Teams compete anytime during the 6-month season to accumulate points. Points leaders are invited to the National Finals at Lowe's Motor Speedway in Charlotte, NC.

The standards-based supplemental curriculum can be implemented as a STEM module, applied science or math activities, after-school club or summer camp for students in grades 6-14.

## How it Works

FastTrack RC Teams are rewarded for managing and marketing themselves, but as professional racing teams know, their ultimate challenge is to go further, faster.

Maximize performance and avoid disaster! Through race engineering, students learn to approach their car's physical limits without exceeding them. Example activities include:

**SCIENCE.** *Traction:* Use Newton's Laws of Motion and a skid pad test to calculate the friction coefficient. Use that value to find the top speed around a curve.

**TECHNOLOGY.** *Design on the FastTrack:* Students use a leading 3-D CAD program, SolidWorks, to design a more aerodynamic car body or parts.

**ENGINEERING:** When students apply math, science and technology to solve any FastTrack RC problem, they are engineering a solution.

**MATH.** *Track Layout & Math Modeling:* Learning to make the tracks is an applied geometry lesson. To optimize any variable, teams build and use math models in the form of graphs and tables.

The Challenges are unique because all my students can contribute; from art and algebra to physics and calculus.

*Elizabeth Warfel, Charlotte, NC High School Calculus Teacher*



## What's Included

FastTrack RC Teams build a relationship with industry mentors through Ten80's network. The FastTrack RC Kit & portal include:

- 2 x 1:10 Scale RC Cars with rechargeable batteries
  - 2 x Stopwatches, Tape Measures
  - Smart Battery Charger
  - 4 x Extra gear sets
  - SolidWorks® Student Design Kit with COSMOS FloWorks
  - First Annual League Entry
  - Race Engineering curriculum for STEM classes and clubs (physics, algebra - calculus, technology)
  - Team Management guides and Marketing Plan
- Articles, videos, team forums and web meetings with the engineers, scientists & educators of Ten80

## FastTrack RC Sponsors Include

