

# Ten80 Student Racing Challenge

## Suggested Implementation Schedules



A variety of suggested schedules are given in this section, but suggestions on how to begin your class or club are the same for every schedule and are outlined in the Getting Started booklet.

### Which Schedule is Right For You?

Use the table below to find implementation schedules that address your overall educational goals and work within your schedule constraints.

1. Find your primary educational goals along the vertical axis.
2. Find your schedule options along the horizontal axis.
3. Numbers in the intersecting cell refer you to Suggested Schedules.

Primary Goals	Schedule →	4 - 10 week modules	Afterschool, Bi-Weekly	Full-Year Course (~3 hours weekly)
Win Student Racing Challenge Competitions		3 (suggested)	1, 2	2
Learn to apply problem solving / Pre-engineering skills		3, 4, 5, 9, 10	1, 2	2
Use 3D CAD to design & build something		4, 5, 6, 7, 8 and/ or 9	4, 5, 6, 7, 8 or 9	Combine two to four projects: 4, 5, 6, 7, 8, 9
Apply math & science concepts in a way that students care about		11 and 12 (integrate these lessons into an existing science and math schedule)		
Alternative Energy ... first & foremost		9, 10 and/or 14 Project #2 (fit into other schedules as 4 - 6 week module)		
Middle School Science & Math		13 (adjust to fit your schedule)		
Project Management or Public Relations		14, 15	Integrate 14, 15 into your schedule	

### Make it Your Own

Here are some things to consider:

- » How many students per station? If there are more than 3, you may need to assign 'background' tasks to make sure everyone is constantly engaged. For example, introduce the public relations or business planning projects and assign a deadline so some team members work on that during 'down time'. Parallel projects are suggested in the next section.
- » Is your track area close to your computer area? If it is, some teams can be running a Chassis Set-Up investigation and others using the 3-D CAD program to design a wing.

## List of Suggested Schedules

Use the previous page to help decide which suggested schedules may be appropriate for you.

#	Suggested Schedule	Description
1	After-School Club, Competitive Team	Meet weekly; Full plan in Project Management Book
2	Full Year STEM Course	48 x 90 min sessions (24 active weeks with 2 sessions per week)
3	Chassis Set-Up Investigations	Optimize the Chassis for performance.
4	Upside Down Wings	Optimize aerodynamics by adding wing(s) using 3D CAD and mechanical engineering principles.
5	Aerodynamic Car Body Design	Optimize aero with a new car body using 3D CAD.
6	Mechanical Eng. Improve the Lower Control Arm	Apply mechanical engineering principles and use 3D CAD to redesign the lower control arm.
7	Mechanical Eng. Streamline the Chassis Plate	Apply mechanical engineering principles and use 3D CAD to modify the chassis underplate.
8	Mechanical Eng. Chassis Plate with Venturi Duct	
9	P.I.T. Now, Wind and Solar Charging Station	Live a sustainable future and recharge your FTRC car with wind power or solar power.
10	Physics Lesson Plans	Actively address standards-based physics and math lessons using FTRC
11	Math Lesson Plans	
12	FTRC for Middle Grades	Framework for upper middle grades
13	Project Management	Project management schedule
14	Public Relations	Public Relations & Sponsorship

## Resource Abbreviations

Resources for each project and investigation are listed in the schedule and are abbreviated as follows:

- MBB: MindBug Buster activities available for download at the team web site
- PPT: PowerPoint presentation available for download at web site; also available in PDF format
- HDT: Handout available for download at web site
- VID: Video available for viewing at the web site
- MID: Printed content in Booklets for Middle Grades. This booklet provides a full series of activities that can be implemented independently of all other Student Racing Challenge content.
- Ten80 Student Racing Challenge Booklets
  - » CURR: Insert on Curriculum & Program Design (this insert!)
  - » RACE: Booklet #1, National FTRC STEM League Handbook
  - » START: Booklet #2, Getting Started
  - » BIZ: Booklet #3, Business Planning, Project Management & Public Relations
  - » CSI: Booklet #4, Chassis Set-Up Investigations
  - » AERO: Booklet #5, Aerodynamic Projects
  - » MECH: Booklet #6, Mechanical Engineering
  - » PITN: Web Booklet #7, P.I.T. Now (Alternative Energies)
  - » SCI: Web Booklet #8, Science Extension Lessons
  - » MATH: Web Booklet #9, Math Extension Lessons
  - » MID: Booklet for Middle Grades, alternative collection of lessons and resources

Web Site = Ten80 team web site