

# Physics, Technology and Engineering in Automobile Racing

## Extension Activities

These extension activities provide opportunities for the eager learner curious about topics related to automobiles and automobile racing.

### Communication Skills in Automobile Racing

One of the more challenging aspects of racing, especially in NASCAR and Indy-style races, is communication between the spotter and driver. At NASCAR races, each team has several spotters strategically placed around the racetrack to guide the race car driver. Because of all the safety features and devices in a modern race car, the driver has a difficult time seeing what is happening beside and behind him or her. Spotters need to help the drivers. The spotters must tell the drivers which way to move on the track to avoid hitting other race cars.

Have the students work in pairs. Set up an obstacle course in the classroom or hallway out of the way of desks or other objects. The driver will close his or her eyes or wear a blindfold. The spotter will walk near the driver and verbally guide the driver around the obstacles to the end of the course. Have the students switch roles so each student can understand the challenge of guiding someone with limited vision, the importance of excellent communication skills and the need for mutual trust when giving or listening to directions.

### Design an Aerodynamic Car

Have students design and build an aerodynamic car. Students can design and build their cars out of modeling clay or play dough, or they can even carve their car out of lightweight wood. Or they can mold the clay over a block of wood (as most car designers do). The cars should be about 10 inches long and less than 4 inches tall. Have the students tape small streamers (made from string) or small cloth strips to the back of the car. Set a fan in front of the car to simulate a wind tunnel and check the aerodynamics of the cars.

### Evaluation of Family Car

Ask the students to look carefully at their own family car, van or truck. Ask the students to list 3 or 4 concepts that they would like to redesign to make the car either safer or more aerodynamic.