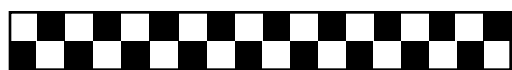
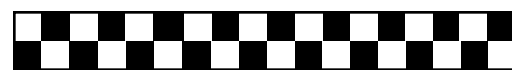


# COACHES & OFFICIALS PROBLEM



## *Pit Crew*



### **A. The Problem**

Your problem is to build a vehicle that will travel a course and return to where it started to break a balloon as quickly as possible. During its trip the vehicle will be stopped by a Pit Crew who will change its tires, add a balloon-breaking device, and send it to the balloon.

### **B. Limitations**

1. The vehicle must:
  - a. be original, however, it may include commercially produced parts.
  - b. not run on electricity (AC or DC).
  - c. be self-contained (nothing external to the vehicle can be used to help it travel in any way at any time).
  - d. fit within a taped 8" x 16" area when measured from any orientation (front, side, upside down, etc.).
  - e. have at least four wheels.
  - f. travel with its wheels touching the floor at all times.
  - g. have two different sets of wheels. Each set must be identifiably different (color, size, etc).
  - h. carry a breaking device added by the Pit Crew. The breaking device can extend past the 8" x 16" measuring area when attached to the vehicle.
  - i. be safe in its design and use. It must not include anything that can harm yourself or others and must not be able to damage the floor. If it is judged to pose potential harm to anyone or the competition site, it will be prohibited. See *2011-12 Odyssey of the Mind Program Guide* pages 39-40.
2. The team must:
  - a. have one "driver" that will release the vehicle from the behind the Start Line.
  - b. have one or two "pit crew" members that will be in the Pit Area and perform the Pit Crew's duties.
3. The Pit Crew's duties include:
  - a. stopping the vehicle once it crosses the Pit Area line.
  - b. replacing the vehicle's wheels. All of the wheels on the vehicle must be replaced by the second set. The wheels are the only part of the vehicle that can be removed.
  - c. adding the breaking device that will pop the balloon. The only sharp objects allowed on the device are pins,

nails and/or screws. It can include a **maximum** of 3 of these combined. The balloon-breaking device is the only thing that may be added to the vehicle other than the new tires.

- d. releasing the vehicle back to the finish line.

### **C. The Competition**

1. You will be assigned a number and have your vehicle measured when you register at the competition site.
2. After you receive your number, you will take a seat until the judges direct you otherwise.
3. Then, you will line up according to number and place your vehicle behind the taped Start Line. The Pit Crew will stand inside the Pit Area across from the Start Line.
4. There will be a balloon taped to the floor next to your taped Start Line. This is the balloon the vehicle will try to break on its return.
5. The race:
  - a. A judge will blow a whistle to indicate when to release the vehicles. The vehicle must be released behind the Start Line next to the balloon. Once the vehicle is released, the drivers will move behind the wood barrier behind the Start Line.
  - b. When the vehicle crosses the Pit Area line, the Pit Crew will stop the vehicle, change its wheels, add the balloon-popping device, and release it back to the Finish Line. The Pit Crew is allowed to prepare the vehicle for travel (for example wind springs, turn a crank, etc.)
  - c. The vehicle will travel back to the Finish Line and attempt to pop the balloon.
  - d. The race ends when the first three balloons are broken in the final heat. If no balloons are broken, the first three cars that cross the Start Area line on the return will win.

### **D. Awards**

1. Trophies will be awarded to the teams that finish the race 1st, 2nd, and 3rd.
2. In the event of a tie, the audience will choose the winner through applause. Bring your cheering section!
3. A trophy will be awarded to the person with the most outstanding STYLE. In this problem, Style will be the appearance of the vehicle, driver, and Pit Crew.

# 2012 Coaches Competition

Remember: Team members are allowed to help coaches and officials with the solution!

Figure A. Course Setup

