Event: Tin Can Racers
Number of Participants: 2

Description: A team consisting of two team members will compete against other teams in a distance race with tin can racers.

The Event:

1. The team will construct and bring one Tin Can Racer to the competition.
2. The Racers will run on a course 10 meters in length and 2 meters wide. The surface will be indoor on a carpeted floor.
3. Each team will have two (2) runs on the course. The racer will be released behind the starting line by a team member without any assisting push, and must not be touched by anyone until it stops rolling or crosses the end line. The course is marked with tape and once it crosses the tape that is the point of measurement. (there are no rails or barriers for the racer to run against.) Each racer will try to travel the furthest distance. If two or more Racers cross the finish line, then the competition standings will be determined by length of time from start to finish. There will be a five (5) minute maximum time limit for any single run (believe it or not, it has happened once over 13 minutes and it rolled just over 10 feet and was still going.)
Materials:

- Racer must utilize only a single can. Any size of "tin" can may be used. The tin can should rotate to create forward progression of the racer.
- The can body MUST be made of metal (any metal: tin, aluminum, etc.). No plastic, glass, or cardboard cans (like Pringles, oatmeal, or most nut cans these days). Please be aware that some coffee and other cans are made of cardboard and have a silver lining inside and metal rims—these will be disqualified as they run much faster and straighter than metal cans.
- The Racer ends and surface may be modified by adding material such as rubber bands, sandpaper, plastic can lids, or tape.
- CDs, LP 45s, or other circular components may be used as "wheels" if desired (wheels are not necessary, and not commonly used).
- Rubber bands are typically used to propel the Racers. Other examples include surgical tubing, bicycle inner tubes, or bungee cords. **NO SPRINGS OR MECHANICAL DEVICES**
- The running arms can be made of any material. You can have one or two running arms.
- Washers are often used to help with weight and to keep the running arm(s) from touching the side of the Racer.
- Nearly any additional individual components are allowed for the Racers, just no assemblies (e.g. no ball bearings assemblies like on a Lazy Susan).
  Racers that are not built with proper materials as listed above will be allowed to participate but will not be eligible for awards.

**Construction:** The typical construction of a Tin Can Racer is as follows (modifications may be made to your heart's content!!)

- Get a tin can. Poke a hole in the center of each end that will be wide enough to get rubber bands and a wire through (hint: drain the contents if the can is full and rinse it out!)
- Cut a small piece of a dowel/stick (shorter than the diameter of the end of the can)
- Loop a rubber band around the piece of dowel
- Using a bent coat hanger or piece of wire, stick the wire through the entire can. Loop the rubber band around the "hook" in the wire, and pull through the can. The rubber band should now be holding the small piece of dowel against one end of the can
- Tape the piece of dowel so it doesn't spin
- Put a couple washers over the hooked wire and thread over the rubber bands (these will keep the running arm from rubbing on the edge of the can). If you want to add washers to the "short dowel" end, you must do so before pulling the rubber band through the can, and make sure the rubber band passes through them before pulling it through the can.
- Put a long dowel (the running arm) inside the rubber band loop sticking out of the end of the can and remove the "hook" from the wire
Helpful Hints:

• The fun of the Tin Can Racers is experimentation to find the best components. Try with different size cans, different size rubber bands, different number and sizes of washers, different number of times winding the running arm, etc.

• To race the can, rotate the running arm around the can (either direction you'll find out that the can needs to be placed appropriately to go the direction you want it to). Winding too tightly will break the rubber bands. Winding very tight will often cause the can to curve and not go straight. Winding too loosely doesn't make the can go quickly. Play around until you find a winning combination.

• Remember to bring extra rubber bands to the competition--they could break, and they could get stretched out from too many practice runs!!!

• You can bring the racer already assembled or put it together at the Field Day, your choice.

• Complaints from previous years include kinked carpeting, starting before the carpet section and having to jump the lip to get started, and being an outdoor event changed the conditions of the carpet as the day progressed. All attempts to mitigate these conditions will be made by requesting an indoor room with standard school carpeting.