



# High School King of the Hill

## **Event Coordinator:**

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## **Description of the Competition:**

Students design and build a robot following the guidelines listed below. In the contest, two robots race down a 4' x 8' playing field which has a narrower opening mid-way down the board just large enough for one vehicle to pass through. They retrieve one of two ping-pong balls, and then deliver it to a hole on top of a small hill next to where they started. Design (creativity or complexity) and workmanship are important only in achieving a well functioning robot. Vehicles will not be judged on aesthetics.

**NOTE:** Opponents may impede each other, but the duration of the obstructive interaction will be limited to a 3 second duration - not to occur more than twice any single match

## **Rules of Competition:**

1. NO REPEATS of projects from prior year Tech Wars competitions!
2. Students can utilize any tools or machines to build their robot.
3. Each competitor will have a designated ping-pong ball their robot will retrieve and attempt to drop into a hole on top of the hill to score in the match.
4. Each round will consist of best two out of three matches.
5. Time limit for each match will be 60 seconds (1 minute). A maximum of 15 seconds will be given between matches for any adjustments or repairs.
6. A competitor will be given a minimum of two (2) minutes between a bracketed round for any adjustments or repairs.
7. Robots may not be touched at time during the match time period.
8. If your robot falls off the playing field, it will forfeit that match.



### **Restrictions to Robots in Competition:**

1. No store purchased R/C vehicles (component robotic kits are allowable) can be used and/or modified for use in the competition. Projects have to be student built, NO EXCEPTIONS!!!
  2. No explosives, corrosives, flames or pyrotechnics.
  3. No lasers, projectiles, or radio jamming.
  4. No electronic weaponry such as stun guns, tesla coils, heat guns, etc.
  5. No entanglement devices - string, tape, fishing line, nets, etc.
  6. No liquid weaponry such as water, glue, foam, etc.
  7. No physical interference or poor sportsmanship between competitors.
  8. No magnets or electromagnets - may cause radio interference.
  9. No cutting devices - Any major damage to the arena will result in disqualification 10.
- Maximum Size of robots is 12" wide x 12" long x 12" high (robots will have to fit completely into a 12"x12"x12" box before competition takes place).

### **Material Requirements:**

1. One replaceable frequency crystal radio control system AM, FM, Surface or Air: transmitter, receiver, and battery pack.
2. 1 - RC receiver
3. 1 - ANY volt NiCad Battery or comparable depending on the radio and receiver chosen.
4. **Note: There is no limit on the number of motors/servos on the robot**
5. Transmissions and gears may be used.
6. All other materials and design is up to the competitor.
7. There is no limit to cost of materials.

### **Scoring/Evaluation:**

Judging will be competition based. Win two of three in a match and you move on in bracket-style elimination. The competition is engineering function based. The best engineering ideas to capture and carry the ping-pong ball will be successful.

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