High School SUMO Bots

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 radio controlled robots face each other in an 8ft circle and try to push/bang/smash the other robot off of the circle. Winners will be determined through pure competition!

INSPECTION PRIOR TO COMPETITION:

It is the responsibility of the teacher to bring in all Sumo Bots from the participating school the morning of the competition at GCC for the inspection process. Inspection will include weigh in on the coordinator's approved scale. Sumo Bots will be secured after inspection at the competition site until the start of the event. DO NOT bring the remote controllers to the inspection. Students will bring controllers with them directly to the competition site.

Rules of Competition:

1. One minute per match.
2. One point for pushing opponent out of circle. Highest score wins.
3. Ref will determine "off of the circle".
4. Scorer will keep score.
5. Timer will keep time, and stops the clock while resetting Wrestlers.
6. You must handle your own robot.
7. Start at the two lines facing each other.
8. NO "time outs". You must be ready to compete, a full match, when called by officials.
9. Non Functioning Robots: If a machine becomes disabled during the match, for whatever reason: i.e. dead battery, unplugged receiver, burned out speed controller; after 20 seconds of no movement from the machine the judge will rule it disqualified. The opponent will then automatically advance regardless of the score.
10. "Sudden Death". In the event of a tie score after regulation time expires, players will reset their robots. No time is kept. Winner will be the wrestler that scores first.

Restrictions to Robots in Competition:

1. NO REPEATS of projects from prior Tech Wars competitions! Teachers please use your discretion on this and ensure that a robot from your school is not entered which has competed in prior years at Tech Wars.
2. LIMITED MODIFICATIONS ALLOWED ON-SITE: Students can use small hand tools which may include hammer, wire cutters, screw drivers and tape to do minor adjustments! Due to safety concerns of everyone at the competition there will be NO cutting, grinding, sawing, soldering or any other form of Sumo-Bot reconstruction allowed at the competition! This should

all be completed before dropping the robot off at the pre-inspection.
3. Robots must weigh 25lbs or less. The Official Scale will be at GCC for weigh in. If you think the bathroom scale you're using is not properly calibrated, you're probably correct! Be on the safe side, and build your robot much less than the twenty-five pound limit! This will ensure your robot weighs in under the 25 pound limit and you're not disqualified.
4. SIZE LIMITS: Student robots must be NO BIGGER than 24"x24"x24". Robots will be tested by fitting inside a box with these internal dimensions. Robots that are too big or too heavy will not be entered in competition.
5. No explosives, corrosives, flames or pyrotechnics.
6. No lasers, projectiles, or radio jamming
7. No electronic weaponry such as stun guns, tesla coils, heat guns, etc.
8. No entanglement devices - string, tape, fishing line, nets, etc.
9. No liquid weaponry such as water, glue, foam, etc.
10. No physical interference or poor sportsmanship between competitors.
11. No magnets or electromagnets - may cause radio interference
12. No cutting devices - Any major damage to the arena will result in disqualification
13. Electronics must be visible, securely fastened and safe from damage.
14. No sharp edges on exterior of robot.
15. Final radio crystal frequency should be emailed to Event Coordinator by one week before event.

Material Requirements:

1. Use typical materials found in lab (plywood, plastic, sheet metal, etc.)
2. No more than 15 volts total in batteries: 1 - 12v battery, or 2 - 6v, or other combinations totaling 15v or less, such as: Hobbico Torqmaster LC 12 volt, 7 Ah Maintenance-free Lead Calcium Battery from Tower Hobbies or other local hobby shops. (You can use others and in combinations)
3. 2 - speed controllers such as: Innovation First Motor Speed Controllers (you can use others)
4. 2 - electric motors and gearboxes such as: Fisher Price Motors/Gearboxes (you can use others)
5. 1 - On/Off Power switch (should be easily accessible)
6. Paint Robots (not required) - your school colors and no offensive designs.
7. One 2.4 GHz or replaceable frequency crystal radio control system AM, FM, Surface or Air: transmitter, receiver, and battery pack. Use of only two RC outputs only servo or speed controllers!
8. All other materials and design is up to the competitor.
9. There is no limit to cost of materials.

You must supply your own chargers.