

# Robots on a recycling rampage

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(PhysOrg.com) -- More than 150 robots, in a wide variety of sizes, shapes and capabilities, will battle it out on May 6 and 7 in a contest to see which can collect the most soda cans and simulated bales of trash and return them to a recycling facility -- actually a milk crate in the corner-- all in under a minute. The robots will be competing head-to-head in a series of elimination matches, and the top eight finishers will get trophies or T-shirts.

The matchups are the culmination of 2.007, a required class for sophomores in mechanical engineering, and it's an MIT tradition that goes back more than two decades. The popular contest has spawned a host of imitators over the years, including the very popular FIRST competition for teams of [high school students](#).

The students, who each build their own robots individually from identical kits of components, will not have their grades for the class affected by the contest outcome, nor will they win any prizes beyond the trophies and shirts -- except, of course, the all-important bragging rights.

The competition, called "Sweeping the Nation," takes place on a square playing field two meters on a side. It is divided in half by a line of cinderblocks painted to resemble buildings, with narrow alleys between them. There is also a "tunnel" in that row, which rotates at random intervals and directions, so robots that start on opposite sides can cross into the opponent's side by passing through the tunnel, or by being built narrow enough to go through the alleys, or by climbing over the buildings.

Points are awarded for collecting a crushed soda can and returning it to a narrow slot (the "recycling bin"). There are more points for picking up an intact can and crushing it before returning it. Points are also awarded for taking the "bales" to a designated spot, more points for stacking them up, and even more for grabbing one from the opponent's side and returning it to one's own stack.

In short, the many possible strategies contribute to very different robots, and students are encouraged to use their creativity. In addition to the provided components in the kits, students can add decorative elements to their 'bots, and that's where they often unleash their imaginations.

A preliminary elimination round will take place Wednesday evening, followed by the finals Thursday evening, starting at 7 p.m., at the Johnson Athletic Center's ice rink. The event will also be shown live by webcast and on MIT's cable TV.

Provided by Massachusetts Institute of Technology ([news](#) : [web](#))

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