# Rube Goldberg Machine Science Project

The Rube Goldberg Machine Contest (RGMC) brings the ideas of Pulitzer Prize-winning artist Rube Goldberg's "invention" cartoons to life. This Olympics of Complexity is designed to pull students away from conventional problem-solving and push them into the endless chaos of imagination and intuitive thought. To be specific, groups are given an elementary challenge: something as simple as peeling an apple, sharpening a pencil, or putting toothpaste on a toothbrush. But instead of just "solving" the problem, students have to make the solution as complicated and as convoluted as possible. In fact, the more steps - there's a minimum of ten - the better the Rube Goldberg Machine. And what a machine! An assemblage of ordinary objects, mechanical gadgets, and the oddest odds and ends are linked together and somehow get to the desired goal.

## Rube Goldberg Project Rules and Regulations

- The machine must be no larger than 1.8 m x 1.8 m x 1.8 m
- The machine must have a minimum of ten (10) unique steps. There is no maximum number of steps. Note: 10 steps is a minimum; more steps will earn more points.
- The machine must run for no more than two (2) minutes per run.
- Students will have two (2) minutes before demonstrating to explain their project.
- No live animals may be used in the machine.
- The machine must not imply profane, indecent or lewd expressions.
- Any loose or flying objects must remain within the set boundaries of the machine. This includes, but is not limited to, drops of water, slivers of balloon, and other “small” objects. Steam and other gases are exempt from this rule.
- The machine may utilize one (1) power cord. No other cords may be run to or from the machine; however there is no limit to the number of hoses and cords utilized within the space of the machine.
- No flames may be used on or within the machine.
- No hazardous materials or explosives can be used on or within the machine.
- The project must be safe to the satisfaction of the your teachers. Teachers must approve any questionable items prior to competition.
- Any destructive action against another machine is grounds for disqualification & failure.

### *Team Restrictions*

- No more than 2 students per team.
- Projects must have a minimum of 15 steps.
- Team grievances will not be handles within the classroom; understand the risks and benefits of having a partner before choosing one.

### *Class Demonstration Time*

- Students will be given a date to set up their project in class.
- Project set-up must take place in the morning prior to the start of school.
- A typed copy of a numbered step-by-step description of the project must be submitted to the teacher by the due date and must include the following.
    - An introduction explaining the goal of the project, its size, basic working functions;
    - Conclusions about the successes and/or failures of the putting together of the project;
    - A picture or detailed diagram of the project;
    - Numbered step-by-step description of the steps in the project.

### *Blalack Rube Goldberg Project Contest*

- Each Science teacher will select two (2) top projects from each PreAP class.
- Top projects will be given a date/time in which to set up the project in the contest area.
- At the time of judging, students will explain and demonstrate their project to the judges.
- Awards will be given for first, second, third, and honorable mention. Additional awards such as most creative, best use of materials, best overall design, etc. may be issued by the judges.

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## ~ 2009-2010 Timeline & Rubric ~

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| OCTOBER 26 | Introduction and start of project |
| NOVEMBER 6 | First 2 stages of project must be submitted to teacher via image/diagram |
| NOVEMBER 13 | Stages 3 & 4 of project must be submitted to teacher via image/diagram |
| NOVEMBER 20 | Stages 5 & 6 of project must be submitted to teacher via image/diagram |
| DECEMBER 11 | Stages 7 & 8 of project must be submitted to teacher via image/diagram |
| JANUARY 8 | Stages 9 & 10+ of project must be submitted to teacher via image/diagram |
| JANUARY 20 | Completed Introduction and Description of working project is due to teacher & project is ready to bring to school within 24 hours of teacher request (assigned demonstration date) |