Rube Goldberg Project

Due Date: May 15, 2014

Students may work with one other person on this project

**Objective:** To build a complex machine that will complete a simple task using at least 5 steps.

**Background Info:** Rube Goldberg is a cartoonist that created elaborate ways to do simple things. Use the website: [www.rubegoldberg.com](http://www.rubegoldberg.com) and <http://www.anl.gov/Careers/Education/rube/rube.html> to investigate Rube’s ideas further. See example below:

Rube Goldberg™ & © of [Rube Goldberg, Inc.](http://www.rubegoldberg.com/)

Rube Goldberg walks in his sleep, strolls through a cactus field in his bare feet, and screams out an idea for self-operating napkin: As you raise spoon of soup (A) to your mouth it pulls string (B), thereby jerking ladle (C) which throws cracker (D) past parrot (E). Parrot jumps after cracker and perch (F) tilts, upsetting seeds (G) into pail (H). Extra weight in pail pulls cord (I), which opens and lights automatic cigar lighter (J), setting off sky-rocket (K) which causes sickle (L) to cut string (M) and allow pendulum with attached napkin to swing back and forth thereby wiping off your chin. After the meal, substitute a harmonica for the napkin and you'll be able to entertain the guests with a little music.

**Requirements:**

1. Must accomplish a simple task.
2. Must have an appropriate name.
3. Must execute at least 5 steps. All steps must be clearly defined and separated. (8 steps if with a partner)
4. Steps are creative and interesting… inspired by Rube!
5. Must include at least 3 different simple machines. (5 if with a partner)
6. The machine must work on its own, after being started. It also must work repeatedly for 3 consecutive trials.
7. Must include a written description and a sketch of your machine with proper labels (like the picture and description above). **You must label the simple machines with its proper name** within your written description.
8. Record your machine with video in one continuous clip in a Windows Media Player File or QuickTime to show to the class on a flash drive or burn to a DVD.

**Bonus Points:**

Students can earn ***up to 10 bonus points*** for creating a machine that can be performed live for the class. The machine must be smaller than 1.5 cubic meters.

**Important Note!!!**

Please DO NOT spend money on this! You can find many of your supplies around your home. Use toys, blocks, sporting goods, recyclables etc.

Name(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Rube Goldberg Rubric**

(Partner Requirements)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Excellent** | **Good** | **Poor** | **Needs Improvement** |
| **Machine Types****(10 points)** | Includes at least 3(5) machine types. Each machine is used as a true, different simple machine | Includes at least 3(5) machine types. Each machine is used as a true simple machine, but some machines may repeat | Includes at least 3(5) machine types. Some machines are not used as true simple machines. | Less than 3 simple machines. |
| **Machine Process****(20 points)** | Includes at least 5(8) distinct and separate steps to accomplish the task.  | Includes at least 5(8) steps to accomplish the task, but a few steps seem to blend together.  | Includes at least 5(8) steps to accomplish the task, but many steps seem to blend together.  | Includes less than 5(8) steps to accomplish the task.  |
| **Reliability****(5 points)** | Machine works reliably every time and does not require human intervention.One continuously recorded clip. | Machine works reliably, but required human intervention at some point and/or Video is recorded in multiple clips. Could be edited for viewing. | Machine frequently does not work. Video has separate clips.  | Machine does not really work. |
| **Introduction****(5 points)** | Machine has a name and the steps of the machine are explained to the viewer. | Machine has a name and the steps of the machine are not clearly explained to the viewer. | Has inappropriate name or the steps of the machine are not explained to the viewer. | Has inappropriate name and the steps of the machine are not explained to the viewer. |
| **Creativity****(5 points)** | Rube Goldberg Master! A novel and amusing idea! | A Rube Goldberg Apprentice! Interesting, but no “wows!” | A straightforward implementation. | Copied and boring… |
| **Written Explanation****(15 points)** | Picture and written explanation are well written, amusing and follows Rube Goldberg’s format. | Picture and written explanation are included and follows Rube Goldberg’s format. | Picture and written explanation are included but does not follow Rube Goldberg’s format. | Missing written explanation and/or picture. |

Total Points: \_\_\_\_\_\_\_\_\_/ 60 + \_\_\_\_\_\_\_\_\_\_ bonus points

Comments