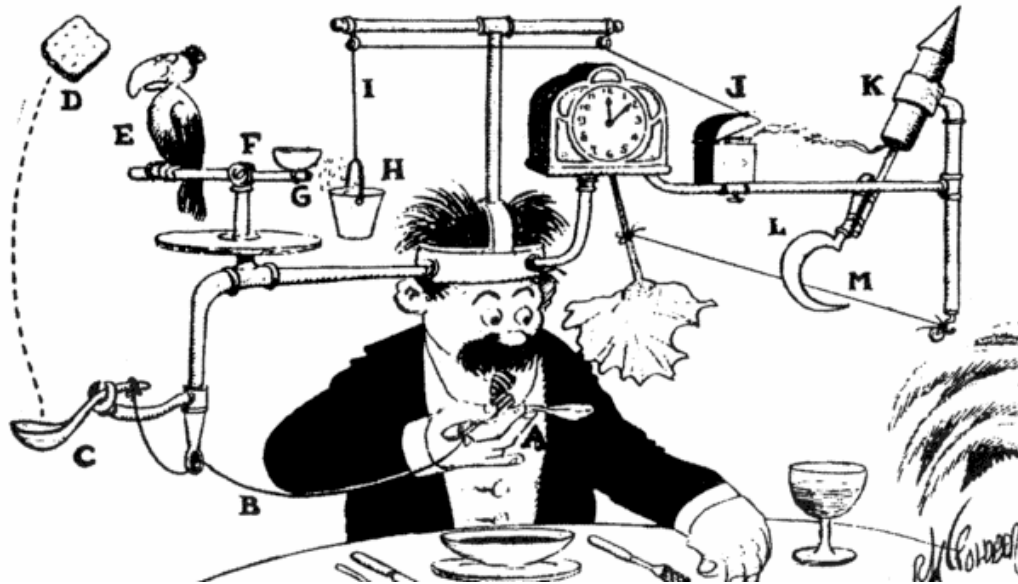


What is a Rube Goldberg Device?

Rube Goldberg drew contraptions that make simple tasks into difficult and complicated ones.



Your Task:

You must design and build a Rube Goldberg device that has at least 5 steps and completes a specific task. You must incorporate at least four out of six simple machines (wheel & axle, pulley, screw, inclined plane, wedge, and lever.)

This project has two gradable parts:

1. Task # 1 Blueprint (20 points)
2. Task # 2 Device (65 points = 5 points for each day we work on it in class, 35 points for final product)

Task	5 Points	0 Points
Step 1	Machine successfully completes the first step without human assistance.	Machine DOES NOT complete the first step without human assistance.
Step 2	Machine successfully completes the second step without human assistance.	Machine DOES NOT complete the second step without human assistance.
Step 3	Machine successfully completes the third step without human assistance.	Machine DOES NOT complete the third step without human assistance.
Step 4	Machine successfully completes the fourth step without human assistance.	Machine DOES NOT complete the fourth step without human assistance.
Step 5	Machine successfully completes the task it set out to complete.	Machine DOES NOT complete the task it set out to complete.
Number of Machines	Machine includes at least four different simple machines.	Machine DOES NOT include at least four different simple machines.
Creativity	Machine is decorated and has a theme.	Machine lacks decoration and/or has no theme.

Task #1 Blueprint

- Create a blueprint (drawing) of your machine on a clean sheet of unlined paper. (10 points)
- Number and explain each step of your machine, and the task it is meant to complete. (5 points)
- Label the simple machines that you used. (lever, inclined plane, wheel and axle, screw, wedge, pulley). (3 points)
- List the materials you plan to use at the bottom of your blueprint. (2 points)
- Remember, neatness counts! Sloppy drawings will not earn 20 points.

Task #2 Build the Device

- Construct a Rube Goldberg machine, which utilizes at least four simple machines, and consists of at least 5 steps.
- Your machine must complete a task, such as putting a ball in a cup. If you would like to complete a different task, you must have it approved by Mrs. Yan BEFORE YOU BUILD IT.
- There can be no human assistance in the process once the machine begins.
- The machine must be self-contained. In other words, if you are turning on a light switch, you will not be allowed to use the classroom's light, so you must bring in your own switch. The classroom chairs, desks, and tables can't be essential to your project. In other words, if we took your project to the next room, it should work the same. Also, you cannot be part of the machine. For example, you can't hold pulleys in the air. They must be attached.

Task #3 Presenting

You will explain & present your machine to the class and demonstrate how it works. Teams whose machines successfully complete their tasks and meet all criteria will be eligible to win a nacho party during lunch. Mrs. Yan will consider neatness, creativity, and the complexity of the design when choosing a winner.

Frequently Asked Questions:

- **Can I have a partner?**
Yes. You may work alone, or with one, two, or three other people. Your teammates must be in your class. Remember to choose your partner(s) wisely!
- **Will we be working on this in class?**
Yes. We will work on the project on the following days:
 - *Thursday, April 12*
 - *Friday, April 13*
 - *Monday, April 16*
 - *Tuesday, April 17*
 - *Thursday, April 19*
 - *Friday, April 20*

- **What happens if I am absent?**

If you are absent the day of the competition, and you are working in a group, your group members may present your project on your behalf. However, if you are working alone and are absent the day of the competition, you will present to Mrs. Yan during lunch when you return, but you cannot participate in the competition aspect of the project. Sorry!

- **How do I get a daily grade?**

Stay on task, no wandering, no being reminded to stay on task = 5 points

Off-task, redirected once: 4 points

Off-task, redirected twice: 3 points

Off-task, redirected more than twice: 2 points

Not working on your project at all: 0 points

- **Can I use animals or fire?**

No! Use simple machines only.