

Rube Goldberg Experimental Design

Requirements:

Draw and make and video a "Rube Goldberg"-style machine that uses different types of energy to accomplish one task.

Types of energy are: Mechanical, Electromagnetic, Heat, Chemical, and Nuclear.

Task: _____

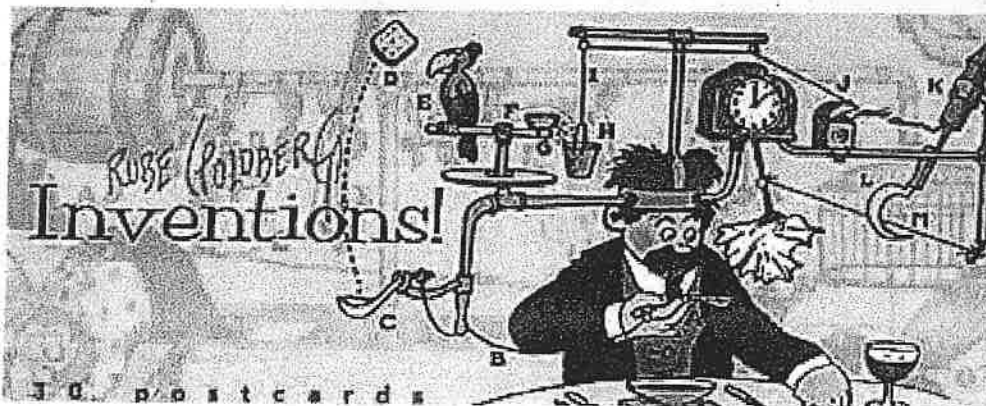
- Regents: at least three types of energy and more than 5 transitions
- College: at least four types of energy and more than 10 transitions

Transition = motion caused by one type of energy that effectuates another type of energy.

YOUR LAB REPORT has two parts:

A video of your project that has both a continuous run and has segments showing specifics for each transition. The segments may be edited (slow-motion, word bubbles, oral explanation, etc.) to enhance understanding.

A picture of your final design, w/ letters indicating transitions and correctly labeled energy types.



- Grading will be based on originality, neatness, and meeting the requirements outlined above.

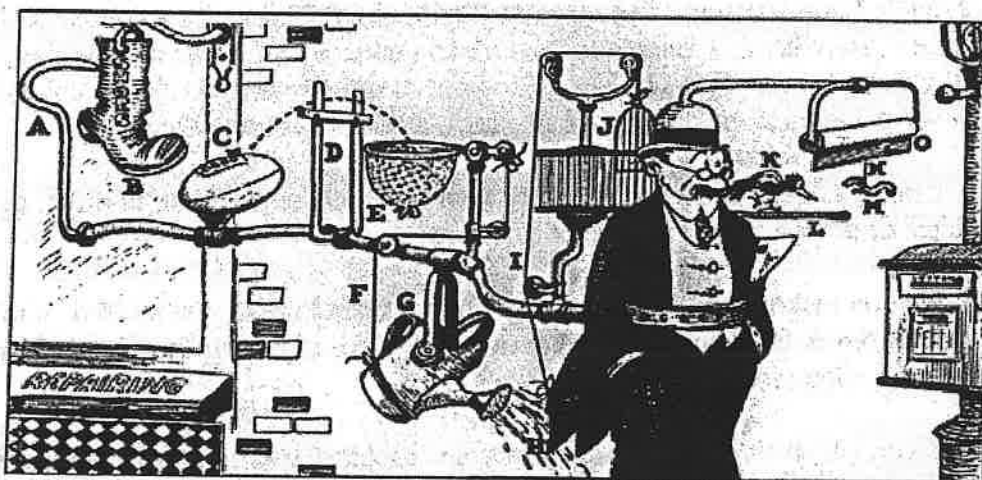
Star Wars: use your collection of a tiny spaceship to drop down a string, bump a toy alien, push some "moon" rocks...

Farming: imagine a small tractor pushing a cow, triggering a mini bale of hay to drop into a small barn...

Sports: golf balls, mini racetracks, tiny tennis racket, and even use a baseball bat or golf club as a sturdy pole.

Cat Lovers: toy cat, mousetrap, catnip, ball of string...

10. Still having trouble? Look up the inspiration for this event and all things related to Rube Goldberg: his original "invention cartoons". While you may not open your garage door by pouring water on a daisy seed and waiting for the flower to start a chain reaction, you'll laugh at his originality and will surely get some ideas. A Rube Goldberg cartoon can be found at our site at [Official Rube Goldberg Site](http://www.rubegoldberg.com) (<http://www.rubegoldberg.com>)



Keep You From Forgetting To Mail Your Wife's Letter RUBE GOLDBERG (RM) RGI 049

Helpful hints:

1. Decide on a goal for your machine. The goal is the last step of your machine. It may be something useful, like how to turn off the alarm clock, or something wacky, such as how to swat a fly.
2. Gather a few things from around the house, in a junk drawer, in your locker or car. Balls, marbles, dominoes, string, toy cars, mousetraps (never use a rat trap - it could break the bones in your hand), magnets, cardboard or tubes, etc. Don't worry, you can collect more later. Avoid fire or dangerous chemicals . . . when possible.
3. Now play with the things! What can the car bump into or knock down? Can the string pull something up? What can push the ball down the cardboard ramp? Try it out!
4. Get a piece of paper and start writing down any idea that pops into your head. This is called brainstorming. No matter how crazy the idea seems, just write it down for later. Even if you don't use it, it may help you think of more things. Trouble brainstorming? Then try this. Write down 50 uses for a computer disk (other than what it is intended - to store computer files). It can be anything, as silly as you want! That will jumpstart your brain! Or go through the alphabet, naming one machine part for each letter: Airplane, Balloon, Comb...
5. Once you get a few good ideas for your machine, make a list, in order, of the steps, or draw a simple picture of the steps.
6. Plan on making quite a few changes to your machine as you build it. It may look different from your original drawing. Try not to get frustrated, this is part of learning what works best.
7. If you get stuck at a certain step of your machine, why not try to work your way backwards? Start at the last step, and connect the part to it that triggers it. Or take a break away from the machine. Sometimes you'll come back with a fresh solution to the problem.
8. Maybe you've overlooked the most important element of an outstanding Rube Golberg machine: WACKINESS! Rube saw the humor in every situation. His ludicrous cartoons were a satire on the American public for their complicated methods for solving a problem. Be sure to follow my guidelines, but then, GO CRAZY! A true Rube Golberg machine would be boring without some common household items (old toys, toilet plunger, egg beater, mousetrap, typewriter...)
9. Another quick brainstorming solution is to develop at least a few parts of the machine around a theme: