

Rube Goldberg™ Invention

– “accomplishing by extremely complex, roundabout means what seemingly could be done simply.”

Rube Goldberg designed inventions that made simple tasks much more complicated. Now it's your turn to try and create one that completes a task in no less than eight steps.

Materials Needed:

Different things from around your house can be used as the materials. That's the beauty of it! You could use dominoes, cardboard, paper clips, magnets, rubber bands, straws, plastic containers, string, sand, cups, clamps, balloons, a rubber ducky, a hammer, Lego pieces, Tinker Toys, marbles, paper towel rolls, ping pong balls, hot wheels, pulleys, Barbie dolls, or parts from construction kits. Other stuff you may need to buy depending on what you want to make.

What do you need to do?

Your grade will be based on the following:

1. Like an architect, you must first make a **DETAILED** “blue print” (drawing) of your Rube Goldberg machine. Your blueprint must include
 - a. a description of all 8 steps, including at least 4 different simple machines you plan to use.
 - b. a materials list showing what “stuff” you will need to complete your project.
2. You will also keep a journal for the duration of the project. In an effort to remind you that science is the ongoing process of discovery, **you will make DAILY journal entries**. Your journal entry should include
 - a. what you have accomplished that day.
 - b. what you plan to accomplish the next day.
 - c. what additional materials you may need to bring in, if any.
 - d. In addition, you must describe any changes you had to make to your machine **AND** explain why those changes were necessary.
3. You must build and mount your project on a wooden or solid platform. **The base of your project can be no BIGGER than 2.5' x 3'.**
4. You will first present your project by discussing each step then by physically demonstrating your machine. You can have only one “human interaction” when demonstrating your machine. **Each additional interaction will result in a loss of 15 points.**

DEFINITION OF A STEP:	A single step is defined as a transfer of energy, or 1 cause through 1 effect.
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EXAMPLES OF STEPS:	<ol style="list-style-type: none">1. Ball rolls down a ramp and hits a car.2. The car rolls and knocks over some dominoes.3. The dominoes hit a marble that drops into a cup.4. The cup drops onto a bell and it rings.
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Please Note!

1. Your group will be required to keep all of your building materials in a bag that zips on your base when you are not in class. This way no one can "borrow" your materials, and my room stays a bit neater.
2. You may not launch, shoot, or catapult anything from the apparatus against people, the wall, or the ceiling. You MAY NOT use a mouse or rat trap.
3. Any and all messes created by your machine will be cleaned up by you!
4. In building your project you **MUST USE AT LEAST FOUR** simple machines.

Task Ideas:

Feed a small animal, open a soda can, raise a flag, turn on a radio or TV, set off a party popper, blow up a balloon, prepare a bowl of cereal, turn on a light, turn the page of a book, smash a grape, pour a drink in a cup, prepare a bowl of salad, mix a kool aid drink, put toothpaste on a toothbrush, put a golf ball into a hole, turn on or off a faucet, or turn on a flashlight.

Extra Credit:

Up to 15 points of extra credit may be awarded for projects that exceed the requirements by using all six simple machines and including four additional steps.

Try, try again!! You will have to test your apparatus several times to get it right. Hang in there – that's science!

IMPORTANT

When bringing tools such as screw drivers, hammers, etc. you MUST be a car rider and bring them in through the front office in a secure bag. They will then be delivered to my classroom or I will come get them. These items are NOT allowed on the school bus. Make sure your name is on everything that you bring for your project.

Larger materials are NOT allowed on the school bus and should be brought by car. Please park in a parking space to unload your items.

Any smaller materials may be brought to school in your backpack or a duffle bag that zips and locks. These materials should remain in your possession until they come to my room.

If you are causing a disruption with your materials, disciplinary action WILL be taken.

YOU are responsible for YOUR materials!