

# Simply Machines Challenge Project

**Goal:** Draw a “Rube Goldberg”-style machine that uses at least 3 different types of simple machines to accomplish one task using a minimum of 10 steps.

## Requirements:

- You must use at least 3 different types of simple machines, such as levers, pulleys, inclined planes, screws, wedges, and wheel and axles.

*Clarification: You cannot use just 3 levers. You must use other types of simple machines, such as use 3 levers, 2 pulleys, and 1 inclined plane.*

- Your machine must have at least 10 steps and include a written list. Use letters to show the order, such as A for the first step, B for the second step, etc.
- Label your drawing using the same letters for the steps.
- Your machine must accomplish at least one task, such as feeding a pet or turning a light switch on/off.

Go to <https://www.rubegoldberg.com/> to learn more about Rube & his machines!

## Project Rubric – Grades will be determined using the rubric below.

	Great (3)	Good (2)	Fair (1)	Poor (0)
<b>Task</b> ____/3	Designed machine would accomplish the assigned task	Designed machine needs a few modifications to accomplish the assigned task	Machine is lacking major parts that would allow it to accomplish the assigned task	Machine is not completed
<b># of Simple Machines</b> <b>Pts x2</b> ____/6	Includes 3 (or more) different types of simple machines	Includes 2 different types of simple machines	Includes only 1 type of simple machine	Machine is not completed
<b># of Steps</b> <b>Pts x2</b> ____/6	Includes 10 or more steps that are labeled and easy-to-follow	Includes 5-9 steps that are mostly labeled and easy-to-follow	Includes less than 4 steps or some steps are not labeled	Machine is not completed
<b>Other</b> ____/3	Diagram is neatly drawn, easy to read, and designed machine shows originality and/or creativity*	Diagram is good, but needs some corrections; designed machine shows originality and/or creativity*	Design is hard to understand/read; shows little originality and/or creativity*	Machine is not completed

*\*Not copied from another idea found online or from a classmate*

# My Simply Machines Project

*Draw your machine in the space below and list the steps. You may use a different page or create your machine electronically to share with your teacher.*

# Simply Machines Project Reflection

Name: \_\_\_\_\_ Class: \_\_\_\_\_

Complete this page after you are done and turn in the page with your project.

1. What task did your machine accomplish?
2. How many different types of machines did you use? \_\_\_\_\_ Give the # of each in the space below. Refer to Lesson 3 if you need help.

\_\_\_\_\_ Levers                      \_\_\_\_\_ Inclined planes                      \_\_\_\_\_ Wedges  
\_\_\_\_\_ Pulleys                      \_\_\_\_\_ Screws                      \_\_\_\_\_ Wheel and axles

3. Identify any “work” done as based on the scientific definition from Lesson 1.
4. What type of frictional forces were involved in your machine? Explain. Refer to Lesson 2 if you need help.

5. How could you improve your machine’s efficiency; i.e. make it run better/faster?

6. Initial the box to show that you reviewed the rubric to make sure you have all the required parts to earn the maximum score.



7. What challenges would you (& your family) face if you were to build the device?