



of Greater Indianapolis

## RUBE GOLDBERG MACHINE

**Ages:**  
9-11

**Description:**

Girls will design and build their own Rube Goldberg Machine while reflecting on how machines and engineering contribute to our everyday lives.

**Time:**

40 minutes to 2 hours

**Materials:**

- Computer/ tablet / smart phone (required)
- Pen (required)
- Paper (required)
- Hot glue
- Construction paper
- Marbles
- Small paper cups
- Paper towel tubes
- String
- Jumbo paper clips
- Rubber bands

Remember, most materials are optional! Feel free to get creative and use other items after checking with a trusted adult to make sure it's okay.

**Instructions:**

Engineers create possible solutions to real-world problems by creating machines and technology we use in our everyday lives. Designing and building are both important parts of engineering and today, you'll practice both.

A **Rube Goldberg Machine** is a machine that does a simple task in a complicated way. The machines use gravity and chain reactions to complete a goal. By creating your own Rube Goldberg machine, you will mix your creativity and problem-solving skills to make your machine run. Here are a few great examples of Rube Goldberg Machines below.

[Example One \(YouTube\)](#)  
[Example Two \(YouTube\)](#)

Inspiring all girls to be strong, smart, and bold

## Design:

### Step 1:

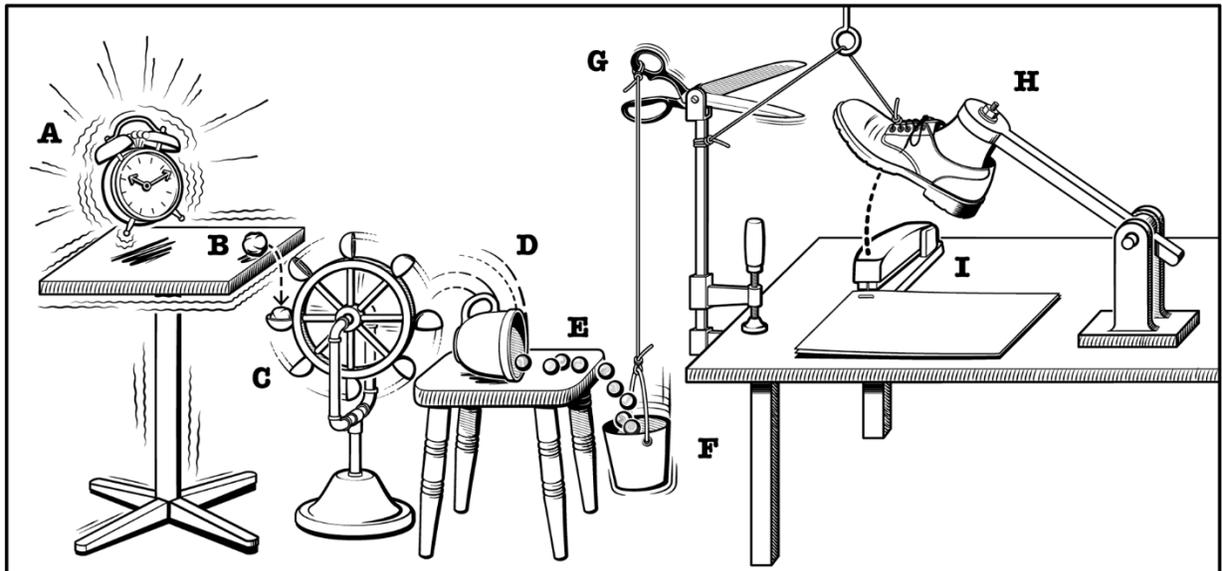
Get a piece of paper and something to write with. It's time to decide on what simple task your machine will accomplish. What will your machine do? A few ideas could be pouring water into a cup, opening a door or landing a ball into a bowl.

### Step 2:

Once you've figured out what the goal is of your machine, it's time to design. You'll want to draw a detailed picture of how your Rube Goldberg Machine will work. What items will you use? How big or small will they be? Where will you build? Be as detailed as possible in your drawing.

### Step 3:

Now that you have a design for what your machine will look like, it's time to gather all the materials you need to build your machine! Make sure to check with your parent or guardian before gathering the materials.



**Build:**Step 4:

Now it's time to put your design to the test and build your machine. It will probably take multiple tries to get your machine to function how you planned. You might even find that your machine doesn't work at all.

Step 5: Re-design and Re-test. If you find that your machine doesn't work, use your design to change and edit your machine until you reach your goal!

## ACTIVITY RECAP

**Discovery Questions:**

- What did you think about the process of building your Rube Goldberg Machine? Did you like the design or building process better? Did your machine complete the task you chose?
- Why do you think it worked or didn't work? Would you do anything differently when designing your machine?
- How does the machine you created relate to the machines we use everyday in our lives? Do you think being an engineer would be fun? Why or Why Not?
- With a parent/guardian's permission, share with design and machine with us on our Instagram page with the tag @girlsincindy.

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