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## Collisions Activity for Kids

### Rube Goldberg Machine DIY

 Duration: **30-60 min**    Difficulty: **Medium**    Cost: **\$0 to \$5**

Use energy transfer to design your own Rube Goldberg machine!

### Material List

-  Several books
-  Ruler
-  Marker
-  Binder clip
-  Pencil
-  Highlighter
-  Tape
-  Cup
-  Candy
-  Bowl
-  Battery
-  An additional variety of classroom objects

### Instructions

This DIY has no step-by-step instructions - the fun of a Rube Goldberg machine is designing your own! Observe some of the concepts Zoe uses to make hers, such as one book falling and hitting another book, or an object sliding down a ramp. Design your own sequence of energy transfers. Plan it, build it, test it, and repeat - this is a key part of the engineering design process.

### How It Works

A Rube Goldberg machine uses a set of items placed in a specific way so that moving one of them will make the others move by transferring energy. They are used to complete a simple task. In Zoe's design, the goal is to dump the candy from the cup into the bowl. This is accomplished using the initial energy of the battery sliding down the ramp. This energy of the moving battery is transferred to the pencil at the bottom of the ramp, which causes the pen to collide with the first book. In turn, the book collides with other books. The last book falls on the pencil which flips the cup and pours candy into the bowl. With each step, energy is transferred!