

# It's Complicated (Machines)

## Creative Expression



### What You Will Discover

In a small group, create a complex machine that will solve a simple problem.

### The Adventure

A **Rube Goldberg machine** uses many steps to solve a simple problem. Choose a simple problem like flipping a switch or popping a balloon and design a complicated machine to do your task. Add elements like a row of dominoes, a rolling ball, a swinging pencil or anything else to use as many steps as possible to complete your task.

Image: [engineergirl.org](http://engineergirl.org)



DISCOVER



MEETING

9 INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



NSERC  
CRSNG



It starts with Scouts.

## Plan

- What steps do you want your machine to have? What materials do you need?
- Where can you find ideas for your design?
- How can you make all of your steps work together to form a machine?

## Do

**#ScoutsDoStuff:** Take photos of your building process and a video of your machine in action to share with others! Challenge another Section to make a machine with more steps than yours.

## Review

- Did your design work how you thought it would? What changes did you need to make?
- What challenges did you run into while building? What did you do to solve these challenges?
- How do you think professional designers and builders solve problems when they run into them?

## Safety Note

- How can you make sure that no one trips on your machine?
- How can you stay safe when using tools to make your machine?

## Try this

### Keep it Simple

Did you know that the game Mouse Trap is just a Rube Goldberg machine? Look up some of the elements of the game for some inspiration. If you can, try playing the game to learn a bit more about chain reactions!

### Take it Further

The world's largest Rube Goldberg Machine consists of 412 steps and takes about 10 minutes to complete its mission— lighting a Christmas tree. How many steps can you add to your machine? Look online for some inspiration for different steps you could add to your machine. Why not challenge other Sections to make a machine with more steps?

