

# Pop-up cards using Levers: Simple Machines

## Materials: (1 per student, unless noted)

~ 4.75" high x 8.5" wide card stock, hole punched ~1.25" from top & just under ~2" from right side. Label hole with a 3.

~ 0.5" high x 5.25" long card stock, hole punched at ~2.5" from left end. Label hole with a 2.

~ 0.5" high x 2.75" long card stock. Label hole with a 1.

(2) per student of various sizes of circles, squares, triangles from card stock. Used for pop-ups.

Crayons, markers, stickers, glue sticks

Brads

Design Guide - see below

**Prep Time:** 30-60 minutes. Decrease prep time by increasing class time with students cutting and hole punching paper - great for math skills.

**Class Time:** 20-40 minutes

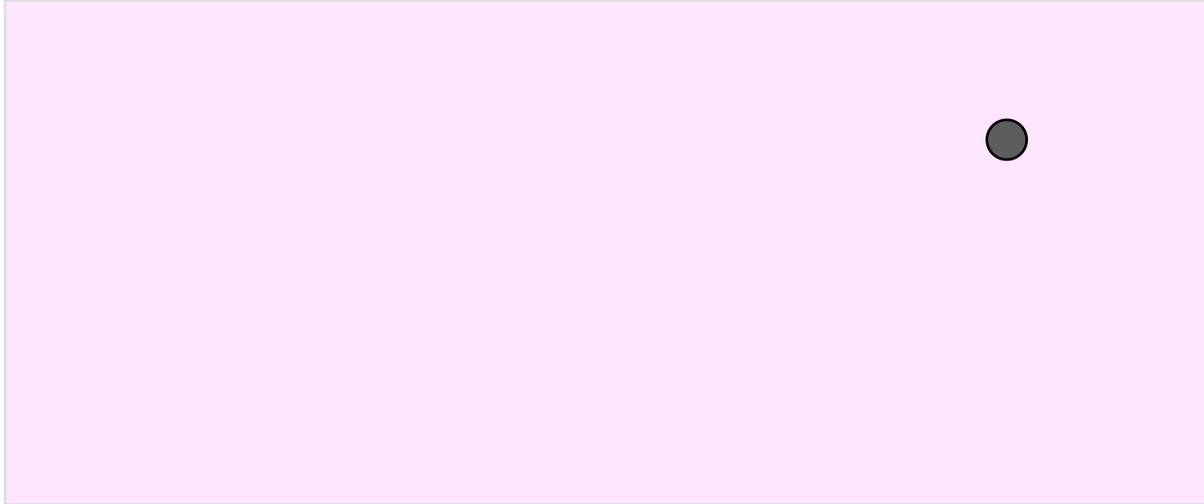
## Instructions:

1. Lever subassembly: Pick up levers marked #1 & #2. Glue #1 lever (smaller one) on top of the #2 (larger one) lever at the left edge of the #2 lever. Lever subassembly should look like an "L."



2. Take 4" high x 8" wide paper with the hole near corner and labeled #3. Hold paper so hole is by your left thumb (wiggle thumb). Should see the #3.

3. Place lever subassembly (from Instruction 1) across 4"x8" paper so it looks like an "L" lying down. Demonstrate by starting with lever in upright L then moving to lie down, saying "I'm so tired."



4. Line up the hole in your lever subassembly, with the hole in 4"x8" paper. Push brad through from behind so brad "legs" fold over the lever subassembly. This part very important to help card function at its best!
5. Now your pop-up assembly should consist of 2 levers - 1 fixed link (glued part) & 1 moveable link (brad part).
6. Test - Flip pop-up assembly over and give it a little test. Should be pop-up on right side that when pulled down, a hidden pop-up shows.

## For Digital Natives - Online Resources

1. <http://www.neok12.com/pictures/Simple-Machines.htm>  
Great website with interesting feature - helps kids prepare a simple machines presentation online using online picture database.
2. <http://www.edheads.org/activities/simple-machines/>  
Excellent online activity where kids identify simple machines in various parts of a house and tool shed. Example: shows the moving gears inside a clock.  
Uses humor too  
Reading required. Could be great group computer activity and/or smartboard.
3. [http://www.msichicago.org/fileadmin/Activities/Games/simple\\_machines/](http://www.msichicago.org/fileadmin/Activities/Games/simple_machines/)  
Great game featuring Twitch and his purple friend.  
Reading not required for this activity.  
Good for ELL students, younger students and classes with wide range of reading levels.