

# Balancing Puppet

## What you need:

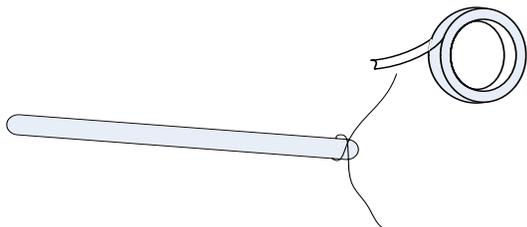
- Craft stick. The wide ones work best.
- Thin wire (20 or 22 gauge works well), about 45 cm (18 inches) long
- Two large steel washers or similar objects to use as weights.
- A picture printed or drawn on card stock, about 14 x 22 cm (8.5 x 6.5 inches). Use the picture in the “Cookie Girl Cut-Out” document, or create your own.
- Masking tape
- Scissors and crayons or markers

## What to do:

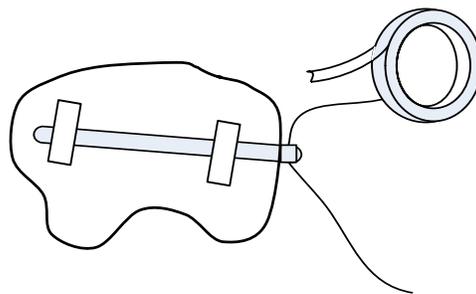
- 1.** Colour your picture, and cut it out on the dotted line.



- 2.** Find the centre of a piece of wire, and wrap it tightly around the end of a craft stick. Tape it securely. It's very important that the wire doesn't wiggle around.



- 3.** Place the picture face down, and place the craft stick in the centre so that the end of the stick extends about 1 cm past the bottom edge. Tape the craft stick securely to the back.

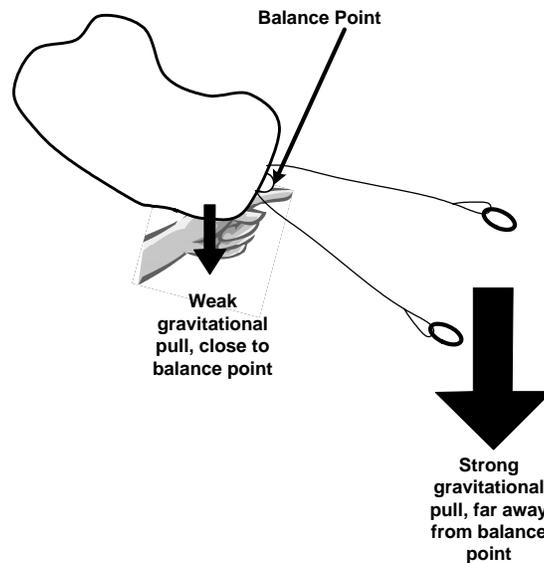


- 4.** Make a small loop in each end of the wire, and hang a metal washer on each loop. Your puppet will balance on the tip of your finger!



## How it works:

The force of gravity tries to pull everything down toward the centre of the Earth, and it pulls more strongly on the washers than on any other part of your puppet. That's because the washers are the heaviest part of the puppet—gravitational pull is stronger for heavy objects than it is for lighter ones. It also helps that the washers are farthest away from the balance point (the end of the craft stick that rests on your finger). The strong gravitational pull on them rotates the puppet around the balance point, until the washers are pointing straight down at the Earth.



When the end of the craft stick is resting on your finger and the washers are hanging down below it, gravity cannot exert enough force on the top part of the puppet (the picture) to overcome the weight of the washers at the bottom.

If you bend the wires, you can make your puppet lean to the left or the right, forwards or backwards. Just don't move the washers to a position higher than the balance point.

## What if it doesn't work?

If your puppet won't balance, check these trouble-shooting tips:

- Make sure the wire is wrapped very tightly around the end of the craft stick, and taped down so it doesn't move. If it wiggles around, the weights will not be stable enough to hold the puppet upright.
- Make sure the craft stick only extends past the bottom of the picture by a centimetre or so. If the picture is at the very top of the craft stick, all its weight will be far away from the balance point, making your puppet unstable.
- If you've used really light washers, try to find heavier ones, or add more of them to the wires.