



Balance Challenge

A great art activity that incorporates basic physics and engineering.

Project Type: Challenge. Creative, tactile

Group/Individual: Individual

Lesson Plan Audience: Maker Mentor

Time: .5 – 1 hr

Hard Skills: Building, Science

Soft Skills: Experimentation, Patience

Ideal # of Participants: can be used with large groups

Age Group: 7+, depending on the age and interest of the maker the physics behind balance can be explained

Ideas for Taking it Further:

This activity could be used as a hot glue gun skill test.

Once the golf pencil can balance on its tip the maker can try and balance a regular size pencil. The maker can also decorate and add to the balancing toy and see how more weight affects the balance.

Use this activity with the book “The Man Who Walked Between the Towers” by Mordicai Gerstein.

Difficulties/Tips:

Encourage makers to share ideas that are working with each other!

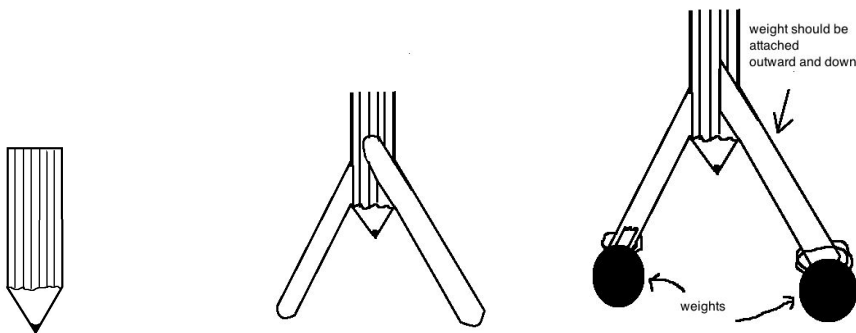


Materials:

- golf pencils
- popsicle sticks
- pipe cleaners, binder clips, paper clips or other things that help attach things together.
- Masking tape
- Some sort of weight (washers, erasers, other little heavish things lying around the library).
- Hot glue (optional to help makers stick things together)

Steps:

1. Ask makers if they think it's possible to balance a pencil on its tip on their index finger. Let them play with the pencils and tell them they are allowed to quietly experiment with the pencils and other materials
2. Give makers some clues: Every object has a center of balance. When you try and balance a pencil on its side it's easier. Why? Where is the weight? In order to balance the pencil on its point weight needs to be added out and down. This makes the center of balance at the tip of the pencil.



3. If makers are struggling you can give them a pencil with popsicle sticks already glued on as shown above. Then makers only need to add weight to the ends of the popsicle stick to make the pencil balance. One maker I showed this to added pink pencil cap erasers to the end of the popsicle sticks which was enough weight to make the pencil balance.
4. Once the makers get the pencil to balance encourage them to make a cool toy out of the object by decorating it with any materials you may have.
Example: Glue on a foam face, wrap embroidery thread around the popsicle sticks, make a paper character and glue it to the pencil...

