

Playful Engineering-based Learning Constructopedia (Resource Exchange)

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FREE RESOURCE!



Tufts
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SUPPORTS HANDS-ON ENGINEERING DESIGN ACTIVITIES

The Constructopedia was designed to help support educators in engaging in engineering design activities that include a wide range of possible solutions.

INSPIRES STUDENT DESIGNS

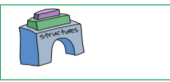
The student-facing resource provides examples of mechanisms and structures that may be incorporated into larger engineering design projects.

**USES CRAFT AND
RECYCLABLE
MATERIALS**

**AGES
5-15**

LOOK INSIDE!

PAPER PILLARS




Materials: Scratch paper (x4 or more), Paper clips (x2 per paper), Rubber band (x2), Cardboard (x2), Hot glue gun.

Step 1: Tightly roll scratch paper. Paper clip both ends.


Step 2: Rubber band the rolls of paper together.

Step 3: Glue a small piece of cardboard on the top and bottom.

Tip: Use more rolls of paper for a sturdier pillar.



BINDER CLIP GEARS




Materials: Binder clips (x8 per gear), String, Popsicle sticks, Rubber band, Scissors, Cardboard.

Step 1: With the arms bent up, string binder clips onto a piece of string.

Step 2: Point the binder clips inwards and form a circle.

Tip: If the clips are shifting a lot, use bits of tape to tape the handles together.




Step 3: Pull the string tight and tie. Trim excess string.

Step 4: Loop one rubber band on the top and bottom of the gear.

Step 5: Connect to a base. Here are a couple ideas:

- popsicle sticks glued to the base
- a pencil stuck through the base



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