



Two hours



Grades
6-8

Build a Candy Dispenser

Make a candy dispenser that gives out a little bit of candy at a time.



Instructions

Participants design and build a prototype candy dispenser.

PREPARATION:

Organize packs of building materials, 1 pack per team, in plastic reclosable bags (as described in the materials on the next page).

Caution: Before starting this activity, be sure to check with the participants to see whether they have allergies to any of the food ingredients used.

Materials

PER WHOLE GROUP:

- Glue gun
- X-ACTO knife
- Miscellaneous craft tools

PER PARTICIPANT:

- Safety glasses

ACTIVITY:


- 1** Organize teams of about 3 participants each. Explain their challenge and provide the following constraints:
 - Each team's dispenser must use AT LEAST 8 of the materials in the pack. Encourage students to use them all.
 - The dispenser must dispense only 3–4 pieces of candy at a time.
- 2** Review the materials inside a pack, and make sure everybody understands how to use the X-ACTO knife in a safe way.
- 3** Instruct teams to sketch ideas for their dispenser and choose the best idea to work with as they construct their model.
- 4** Teams construct their models. As an option, they can name their dispenser.
- 5** Teams test their prototypes and refine as needed.
- 6** Teams present their prototypes to the other teams.





PACK LIST (ONE PER TEAM):

- 1 plastic reclosable bag that holds all of the following materials
- 1 baggie of small pieces of candy
- Paper and pencil
- 2 large paper clips
- 2 small paper clips
- 1 clothespin
- 1 manila folder
- 1 playing card (from a deck of cards)
- 1 CD/DVD
- 1 paper plate
- 1 paper bowl
- 3 tongue depressors/craft sticks
- 1 plastic or paper 3 oz. cup
- 2 straws, bendable or not
- 2 feet of tape
- 1 pair scissors
- 1 balloon (optional)

Engineering & Science Connections

 Pez dispensers are small—but rather complex—candy dispensers. The candy is loaded onto a shelf that fits into grooves inside the container and sits on a spring. The container holds the candy in place. When one is removed, the spring stretches, pushing the next candy to the top. The head is a top attached with its own spring and has a small piece that sticks out. As the head tilts back, the small piece pushes the candy off of the shelf so that it is easy for the user to grab.

 Vending machines are a type of large dispenser. Because the vending machine owner makes money from each item it sells, it is extremely important to limit the amount of candy that comes out of the machine. The design must be quite precise. Some use gravity, mechanical pumps, or electronics to dispense their goods.

 Many vending machines dispense packages of candy, but they can be used to dispense anything: soda, hand soap, gasoline, coffee, ice cream, or accessories for electronic devices. There are even vending machines now that distribute freshly heated pizza or burritos!

Guiding Questions ?

How can you create a small enough opening so that only a few pieces of candy come out at a time?

Would a lever, a button to press, or some other method work best to control the flow of candy?

What candy dispensers have you used that you can keep in mind as you create your own? How did they work?

This activity was developed by Nicole Penn as an adaption of the jellybean lesson originally published by ITEEA (International Technology and Engineering Educators Association).