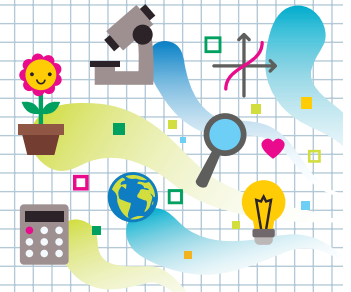




HEADS IN, HEARTS IN

Corn Plastic Instructions for Set-Up



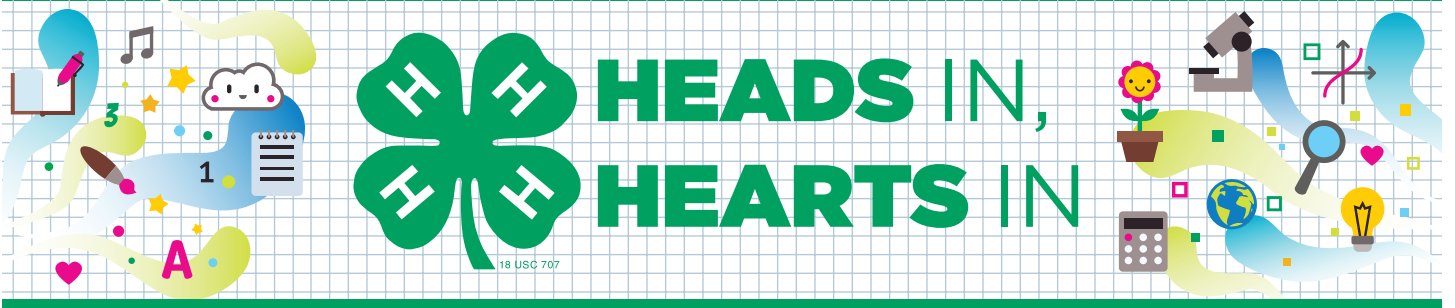
Supplies

- “Guide for Families” handout
- Clear plastic standup display (optional)
- Resealable plastic sandwich bags (1 per participant)
- Cornstarch (1 tablespoon per participant)
- Medium-sized bowl
- 2 small bowls
- Water (1½ tablespoons per participant)
- Corn oil (2 drops per participant)
- 2 tablespoon-sized measuring utensils
- One ½-tablespoon-sized measuring utensil
- Pipette or medicine dropper
- Liquid food coloring (2 drops per participant)
- Microwave
- Extension cord
- Display table

Activity Preparation

- ▶ Purchase or locate items on supply list.
- ▶ Print one copy of the “Guide for Families” handout. Laminate or place in a clear plastic standup display to allow participants to see it more readily.
- ▶ Set up the display table with supplies as described in the following bullets:
 - Place resealable plastic bags on the table.
 - Place cornstarch in a medium-sized bowl for ease of participants scooping and measuring.
 - Place one tablespoon-sized measuring utensil next to the bowl of cornstarch.
 - Put water in one small bowl and corn oil in the other.
 - Place one pipette or medicine dropper next to the bowl of corn oil.
 - Place one tablespoon-sized measuring utensil and one ½-tablespoon-sized measuring utensil next to the bowl of water.
 - Place bottle of food coloring on the table.
- Set up the microwave and plug in to a power supply using the extension cord. Make sure it works.





Corn Plastic

Guide for Families

Learning Objectives

What you need to know:

Corn is **biodegradable**. That means that over time, it will break down without harming the earth. Corn is a **renewable** resource – it can be reproduced or grown again and again. Cornstarch and corn oil are both **by-products** of corn, which means that they were made from corn. Other products made from corn are packing peanuts, trash bags, carpet, stuffing in pillows and filling in bed comforters.

Most plastics are made from **petroleum**, which cannot be reproduced at the same rate it is consumed. Petroleum is considered a **nonrenewable** resource. Today you will make plastic from corn, a renewable resource.

What you will do and learn:

You will learn what **biodegradable** means and identify biodegradable materials when you make your own plastic from corn.

Instructions

1. Put 1 tablespoon of cornstarch in a plastic bag.
2. Add 2 drops of corn oil.
3. Add 1½ tablespoons of water.
4. Seal the plastic bag and mix the ingredients together, gently.
5. Open the bag and add 2 drops of food coloring. Seal the bag, and mix gently.
6. Give the bag to the volunteer or teacher.
7. He or she will unseal the plastic bag, and place it in the microwave for 20 to 25 seconds.
8. He or she will return the bag to you. Caution it may be hot!
9. Squish the ingredients together through the plastic bag and observe what happens.
10. Observe and discuss:
 - What do you notice about your biodegradable plastic?
 - Does it look and feel the same as other plastics you're familiar with such as plastic bottles, bouncy balls, plastic cups and other plastic things?
 - What could you make with it if you let it harden?
 - What does it smell like?

Most plastics are made from **petroleum**, which is a nonrenewable resource or a resource that cannot be reproduced in a useful amount of time. Using renewable substitutes such as corn that can act like petroleum, we can recreate products that are not dependent on nonrenewable resources such as oil reserves. The corn acts as a **polylactic acid plastic (PLA)** and has similar properties to traditional petroleum-based products.