

UNIVERSITY OF ILLINOIS
EXTENSION**Lesson Objectives:****Club members will:**

- Make a fun and pliable corn plastic from cornstarch
- Solve Problems—Generate / evaluate solutions

Time: 20 to 30
minutes**Equipment & Supplies:**

- Cornstarch
- Measuring Spoons
- Corn Oil
- Water
- Pipette/dropper
- Food Coloring
- Sandwich-size plastic zipper-sealed bag
- Microwave
- Poster board to list corn plastic ideas

Preparations:

- Review Lesson
- Gather equipment and supplies

4-H Club GO TO Resources

March 2017

Cool Corn Plastic - 4-H Ag Lesson

Make corn plastic and brainstorm new uses that might solve environmental problems.

Corn is an important renewable resource. There are thousands of uses for this valuable crop, not only as food for livestock and humans, but for many other products such as shopping bags, candles, crayons, detergents, film, adhesives, and medicines. Make corn plastic and imagine the possibilities! How could it solve some environmental problems? What can you do with your corn plastic?

The Activity:

1. Place a tablespoon of cornstarch in a plastic zipper-sealed bag.
2. Add 2 drops of corn oil to the cornstarch.
3. Add 1 1/2 tablespoons of water to the oil and cornstarch. Seal the bag.
4. Stir the mixture with your fingers..
5. Add 2 drops of food coloring to the mixture and mix well.
6. Microwave the bag for 30—45 seconds.

Caution! Open the bag slightly before starting the microwave. The plastic bag will get very hot.

Be careful when removing the plastic.

7. When the substance has cooled a bit, try shaping it into a ball.
8. Create a new idea about how corn plastic could be used to solve environmental problems.

Add it to a list of ideas created by others.

Talk It Over:

1. What happens to the liquid corn mixture after it is microwaved?
2. Is your corn mixture the same as your friends?
3. What could you make with this plastic if you let it harden?
4. How could edible corn plastic help to solve the space problem in many landfills?
5. What future uses or products can you imagine for plastic that could be made out of edible corn?

Ag Facts:

Has a checkout clerk at the store ever asked you if you prefer paper or plastic? If you chose plastic, you may have received a biodegradable shopping bag made from corn products. Many business, such as the Brookfield Zoo near Chicago uses plastic knives, forks, and spoons made from corn. During the 2000 Summer Olympic Games in Sydney, Australia, more than 35 million pieces of tableware, straws, and drink cup lids were made from biodegradable corn plastic. Other creative ideas are being considered for using corn plastic as well. For example, a ski slope is considering changing the life tickets to biodegradable

Cool Corn Plastic - 4-H Ag Lesson continued

plastic so when the snow melts there will be less litter. Another company is using this new plastic to make casings for fireworks. When the fireworks explodes, the casing falls to the earth and decomposes.

Dig Deeper with the Plastic Flubber Challenge:

Compare Corn Plastic to a glob of Plastic Flubber. Compare which ones you like best. Remember that Corn Plastic will bio-degrade while the Plastic Flubber will not.

Supplies Needed:

- ⇒ Ziploc sandwich bags
- ⇒ Elmer's White glue (the non-school type which contains polyvinyl acetate)
- ⇒ Water
- ⇒ Grape Kool-Aid
- ⇒ Borax Laundry Powder
- ⇒ Wax Paper
- ⇒ Paper Towels

- Have each 4-H member take a Ziploc sandwich bag and add 1/4 cup Elmer's White glue (the non-school type which contains polyvinyl acetate), 1/4 cup of water and a pinch of grape Koolaid to the bag and seal it shut. Mix the contents together.
- In another Ziploc sandwich bag, mix 1/4 cup of water with 1 tablespoon of Borax laundry powder.
- Once mixed, pour the Borax solution into the bag with the glue mixture. Seal the bag and have the 4-H'ers mix the ingredients. After 1 minute, remove the coagulated mass from the bag. Be sure the colored glob is well drained before placing it on a piece of wax paper.
- Using a paper towel, gently dab the glob to absorb the remaining moisture. Be careful, the glob may stick to the paper towel.
- After about 1 minute of drying time, the 4-H members may pick up their Flubber and begin to roll it in their hands to shape it. For safe storage, place the Flubber in a clean Ziplock sandwich bag and seal it shut. The Flubber will eventually dry out if not sealed properly. Keep the Flubber away from clothing as it will stick to and stain the fabric.



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Sources & Additional Lesson info:

4-H Club GO TO Resources is being offered to 4-H clubs in Boone, DeKalb and Ogle Counties as a way to enrich and enhance 4-H experiences and programming at the club level. It is the goal of the Extension staff to assist 4-H leaders and officers in providing simple hands-on activities on a monthly basis that can broaden the 4-H club experience and as a result heighten positive youth development.

The Carefree Corn Plastic Ag Lesson was adapted by National 4-H Cooperative Curriculum System, Inc., Afterschool Agriculture, Acres of Adventures 2, Carefree Corn Plastic (BU-08331), pages 14 - 15.

For more information on 4-H Agriculture projects contact your local Extension office.

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