



DIY PACKING PEANUT

Grade Level

4-6

Length of Lesson

20 minutes

Objective

By the end of this lesson, students will have a better understanding of biodegradable resources.

Materials Needed

- Cornstarch
- Water
- Paper cups (1 per student)
- Spoons (1 per student)
- Microwave access

Standards

NGSS

2-PS1-2; 5-PS1; MS-PS1

Lesson Summary

This lesson is a fun, hands-on activity designed to help students understand that common products can be made with agricultural products and can be biodegradable so that we can reduce waste and pollution.

Suggested Sequence of Events:

1. Set Up: Depending on your class age and size, you could measure out the ingredients into separate cups for students ahead of time. Each student needs 1 tablespoon of cornstarch and 1 teaspoon of water.
2. Read "[Corn](#)" by Gail Gibbons to snag student interest.
3. Read through the AITC Corn Ag Mag to learn more about corn and its many uses! Interactive online versions can be found on our website.
4. Complete the activity following the procedures:
 - Hand out a paper cup, a spoon, cornstarch, and water.
 - Add 1 tablespoon of cornstarch to the cup. Then, add 1 teaspoon of water to your cup and use the spoon to stir into a paste.
 - Once mixed, you can try to form the peanuts into shapes.
 - Microwave the mixture for 20 seconds.
4. Whole class discussion and reflection of activity. How could this type of product be more beneficial to our environment? Explain how this product is considered a renewable resource.

TEACHER RESOURCES

Background Information:

Unlike Styrofoam packing peanuts, cornstarch packing peanuts are biodegradable and decompose in water, leaving no toxic waste. The polymers, long-chain molecules, that make up corn packing peanuts are polymers that occur naturally in nature as opposed to Styrofoam peanuts being made up of synthetic, or man-made, polymers. Corn, being a plant, is a renewable resource that we could use to reduce the amount of non-renewable and non-biodegradable products!

Extension Ideas:

- Turn this into an inquiry experiment and play around with the measurements of the cornstarch and water and also with the 'cooking' time in the microwave. Will changing these variables change the time it takes for the peanuts to breakdown?
- Complete our "Packing Peanuts" activity and compare their home-made corn packing peanut with the others in that activity.
- Test the protectiveness of corn packing peanuts vs. Styrofoam packing peanuts. Test them by packing a cardboard box with an egg and dropping them from various heights. Have them create a hypothesis and the make sure they test the materials with multiple trials at each height.
- Define and discuss the words "biodegradable," "decompose," and "toxic waste." Dig deeper and look at the by-products and wastes from making various materials.
- Brainstorm as a class and make a T-Chart on the board and list renewable and non-renewable resources.
- For older students, have them research what products can be made renewable, but are still primarily made with non-renewable resources. (Ethanol, corn packing peanuts, plastics, etc.)
- Learn more about other common corn-based products.
- Invite a corn farmer into the classroom to talk about types of corn, their uses, and what it takes to be a corn farmer.
- Try making corn packing peanuts using [this](#) recipe and compare to the ones you just made! Available at: <https://getawaytips.azcentral.com/how-to-make-packing-peanuts-12133405.html>
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!