

Making Bioplastic

Renewable resources are either naturally reproduced at a sustainable rate or they can be produced in agriculture at a rate equivalent to the demand or need. Nonrenewable resources are made naturally by the Earth but do not renew themselves fast enough for people to count on having the resource for an indefinite period of time. Although plastic is typically considered to be a nonrenewable resource because it is made from petroleum, there is a method of making plastic that can be renewable. Bioplastics are made from biological materials—plant starches, cellulose, oils, or protein.

Materials

- [Making Bioplastic Activity Sheet](#)
- 1 tablespoon (14 g) cornstarch
- 2 drops corn oil
- 1 tablespoon (15 mL) water
- 2 drops food coloring
- Sandwich-sized resealable plastic bag
- Tablespoon measuring spoon
- Microwave

Vocabulary

bioplastics: a group of plastics made from biological materials like plant starches, cellulose, oils, or protein

nonrenewable resources: limited natural resources that cannot be replaced or reproduced within a generation and cannot be managed for renewal. Examples: oil, soil, mineral resources (lead, cobalt, zinc, etc.)

renewable resources: natural resources that can be replaced naturally or by human efforts at a sustainable rate. Examples: forests, fish, wildlife, agriculture, plants, animals

Activity

1. Bioplastic is plastic that comes from a living thing. It is a renewable method of making plastic. Make bioplastic out of materials that come from the corn plant.
2. Combine 1 tablespoon (14 g) of cornstarch, 2 drops of corn oil, 1 tablespoon (15 mL) of water, and 2 drops of food coloring in the plastic bag.



3. Seal the bag and mix the ingredients by rubbing the outside of the bag with your fingers until the ingredients are thoroughly combined.



4. Answer the questions for Part 1 of the [Making Bioplastic Activity Sheet](#).
5. Open the bag slightly, making sure it can vent, and place it into a microwave oven on high for 20-25 seconds.



6. Carefully remove the bag from the microwave, and let it cool for a few minutes. While it is still warm, allow the students to form their plastic into a ball.



7. Complete the [Making Bioplastic Activity Sheet](#).