



MAKE BIO PLASTIC



Have you ever noticed how many items around you are made of plastic? What is the simplest item that you use every day that could be made of bioplastic you make yourself? In this activity, you will make your own bioplastic with help from an adult. You can even make a plastic bowl, utensil, or cup to use or give to a friend!



Kimberly Miner is a climate scientist who has taken research trips to Antarctica to study how climate change impacts the Arctic.

YOU WILL NEED:

- Cornstarch [gelatin or agar agar]
- Glycerin
- Vinegar
- Water
- Baking sheet
- An oven
- A pot
- A whisk
- A spoon

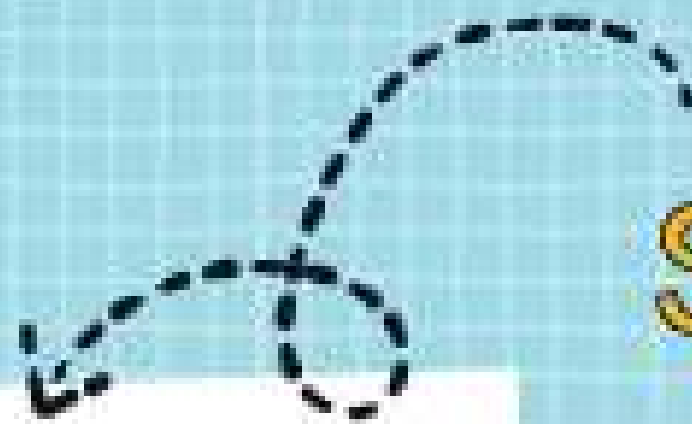
FUN FACT:

Engineers solve problems using a systematic, iterative process called the engineering design process.



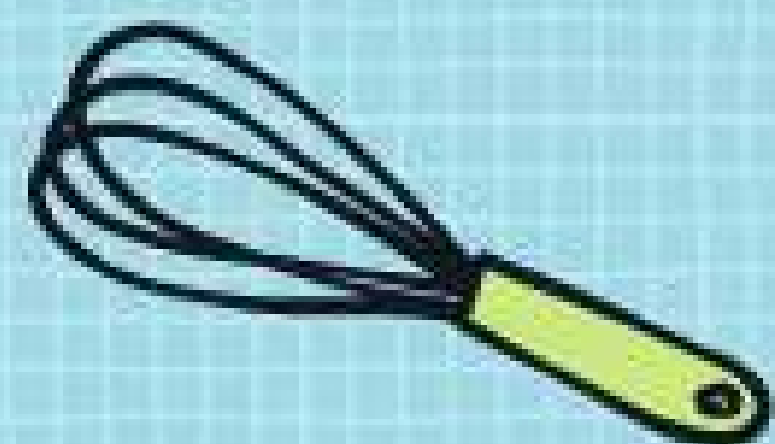
STEP 1:

Add 1 tablespoon of cornstarch [or gelatin or agar agar] and 1 teaspoon of vinegar to 4 tablespoons of water in a cooking pot. Add also 1 teaspoon of glycerin. You can get the glycerine in a pharmacy.



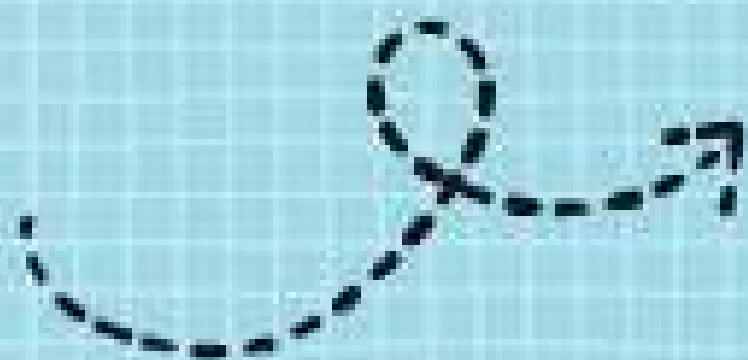
STEP 2:

Stir the mixture thoroughly with a whisk and heat over medium heat. Always keep stirring.



STEP 3:

After a few minutes, the mixture becomes thicker, you have to then replace the whisk with a wooden spoon to continue stirring.



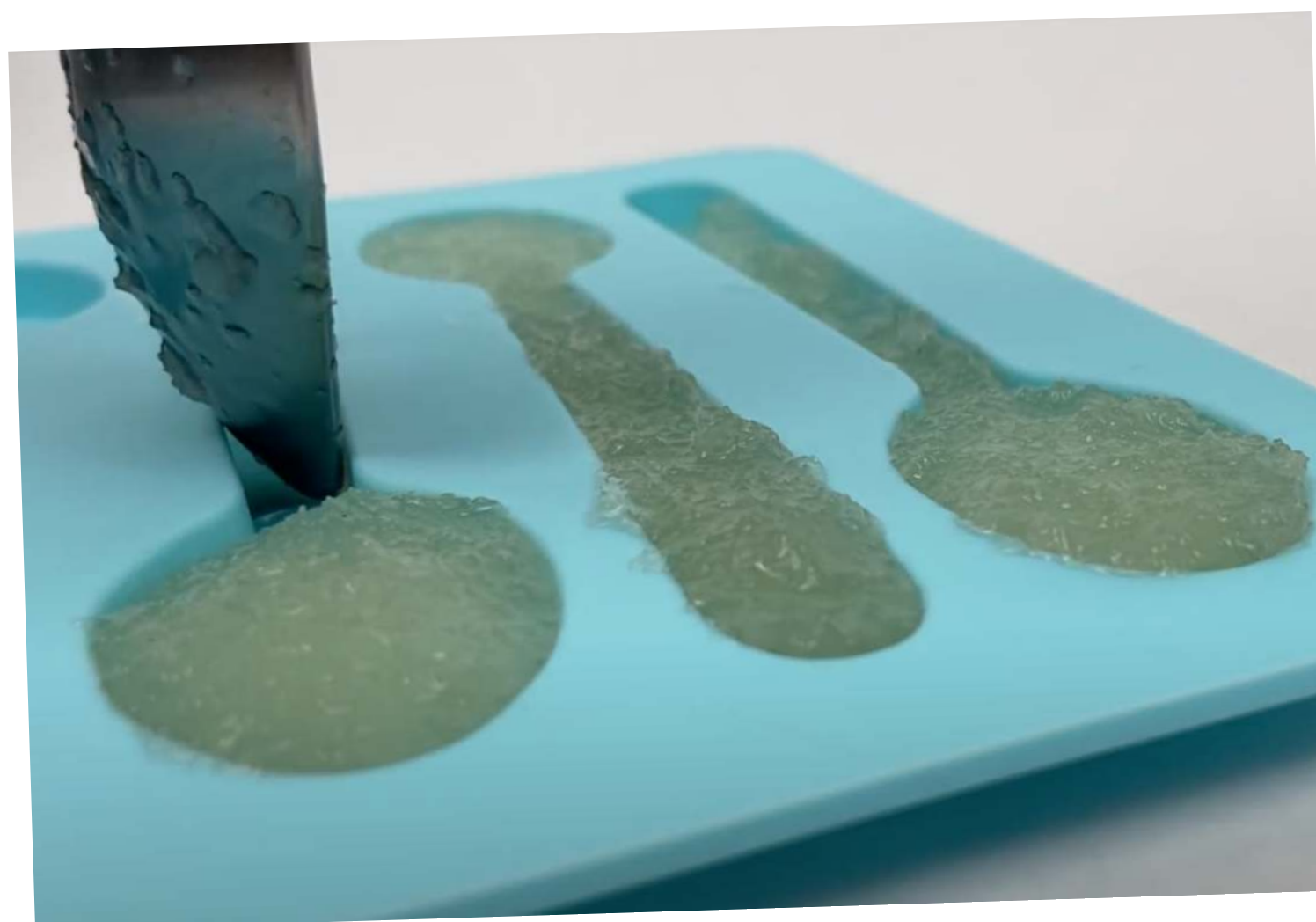
STEP 4:

After more or less 10 minutes you have a sticky and glassy substance in your cooking pot. You can then spread this substance on a baking tray or another suitable surface or use a silicone mold!



STEP 5:

Wait at least 24 hours for the bioplastic to dry. Then you can pull it off the baking tray or out of the mold.

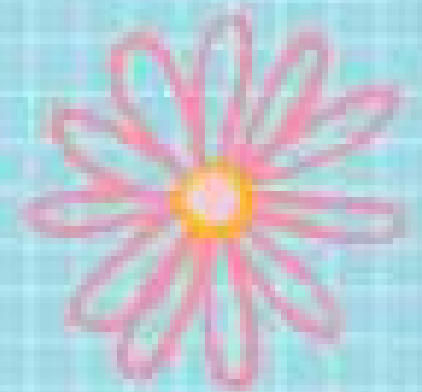




STEP 6:



Safety reminder: The spreadable mixture will be hot and sticky. Be careful of burns, and use gloves or oven mitts to protect your hands.



DONE!

Once you have made one batch of bio-plastic, you can try again and experiment with adding more or less of each ingredient. How does the plastic act differently with more cornstarch? Vineger? Keep notes on the recipe you try and what happens, so that you can make bio-plastic that is just as rigid, strong, stretchy or soft as you want it to be.



