

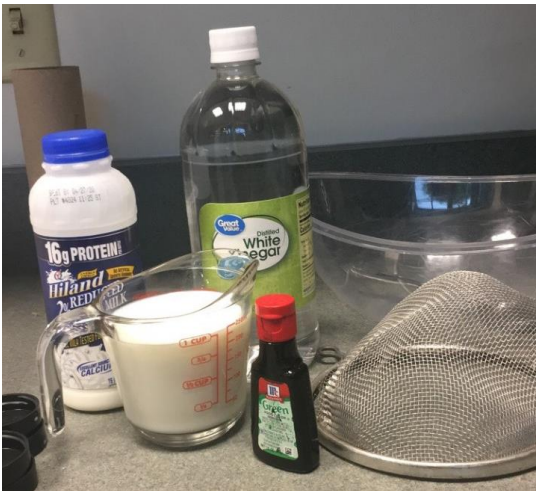
Milk-to-Plastic

Hey guys! Hope you're ready for another fun **STEAM** project



with me, Miss Leah. In this one, you'll be transforming plain old **milk** into a moldable **plastic**. There's some chemistry involved here. In fact, this process has been used for over 100 years!

Milk contains a protein called **Casein**. When mixed with an acidic substance, the Casein breaks down and forms a plastic consistency that can be sculpted and molded. Before we get started, here's what we'll need:

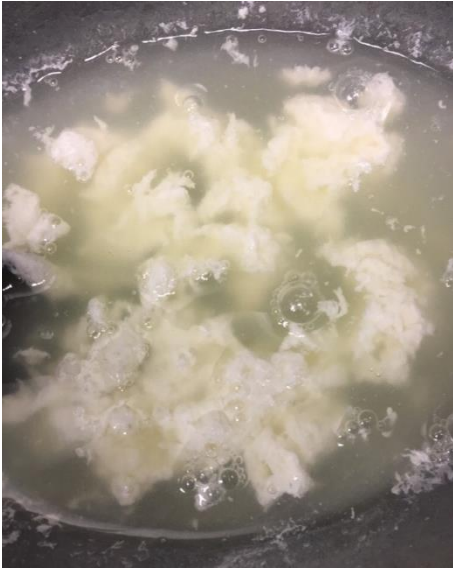


- 1 cup milk (2% works best)
- 4 tablespoons vinegar or lemon juice
- A strainer
- Paper towels
- Bowl and spoon
- Microwave or stovetop
- Food coloring, markers, or paint (optional)

Step 1

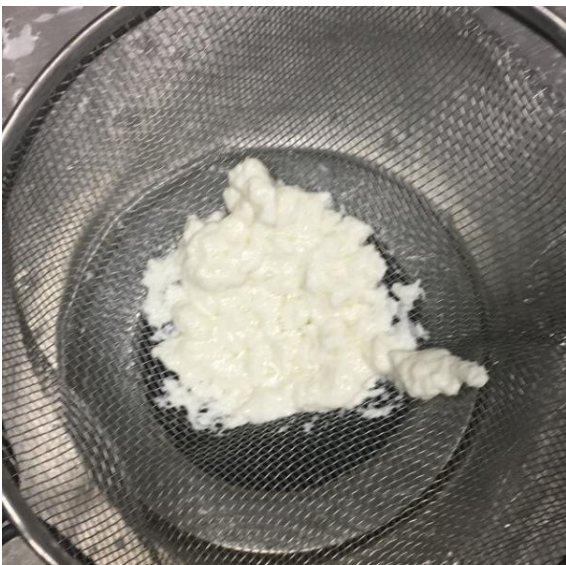
Heat the milk in the microwave or on the stovetop for about 1.5 minutes, or until warm. You do not want the milk to boil. If you want to add food coloring, do so now. If you don't want to use food coloring, you can color your plastic once it dries.

Step 2



Mix in 4 tablespoons of either vinegar or lemon juice. This is the **acid** that will break down the proteins in the milk. Notice how it starts to clump?

Step 3



Time to strain the liquid. Pour everything into a fine strainer and let the liquid drain out. Press down on it to help get it all out. Get as much of it out as you can, and then press the plastic between some paper towels to absorb up the rest.



Step 4



Now that most of the liquid is pressed out, you're ready to start shaping the plastic! There's a lot you can do here. You can make beads by rolling the plastic up into little balls and pressing a toothpick through. Cookie cutters also

make for great plastic molds. Keep in mind- **the plastic will shrink a little as it dries.**

Step 5

Set aside your creation to let it dry. This will take some time- up to **two days**- so be patient! There's no need to refrigerate your plastic while it dries, just keep it covered. Once it's fully dry, you can use paint or markers to decorate your plastic creations.

I hope you enjoy this fun project. Please continue to stay safe and healthy during this time. If you make your own milk plastic, be sure to leave a picture in the comments on Facebook!



Miss Leah



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