



# PLASTIC MILK

## You will need:

- 1 cup of milk
- 4 teaspoons of white vinegar
- 1 bowl
- 1 small strainer
- 1 teaspoon
- Paper towel
- Cookie cutters
- Microwave / Pan



## Procedure:

Step 1: Ask an adult to heat up one cup of milk until is steaming hot. You can use a pan or a microwave (50% power for 5 minutes)

Step 2: Gently pour the cup of milk into a bowl and add 4 teaspoons of vinegar. Then, using a spoon, stir for about a minute.

Step 3: Wait for the milk to cool for a bit and then pour it through the strainer. You will see the curds remaining on top of the strainer.

Step 4: Using a spoon, scoop the curds out onto paper towel and squeeze them to get out any extra liquid. Use extra paper towel if necessary

Step 5: When all the liquid is gone and the curds are cold, squeeze them together and knead the dough.

Step 6: Roll it out like dough and cut it or form shapes using a cookie cutter. You can add some food colouring too if you want.

Step 7: Let it dry for 2 days. After that you can paint and decorate your plastic milk!



What happens if you use lemon juice instead of vinegar?

## Science explained:



Plastics are composed of polymers (molecules that repeat themselves in a chain). Milk contains a protein called casein. Each casein molecule is a monomer and a chain of casein monomers is a polymer. This is why you end up having casein plastic.

Vinegar, which is an acid, changes the pH of the milk and makes the casein molecules unfurl and reorganize into a long chain. That is, the vinegar curdles the milk so you can see the white lumps.

