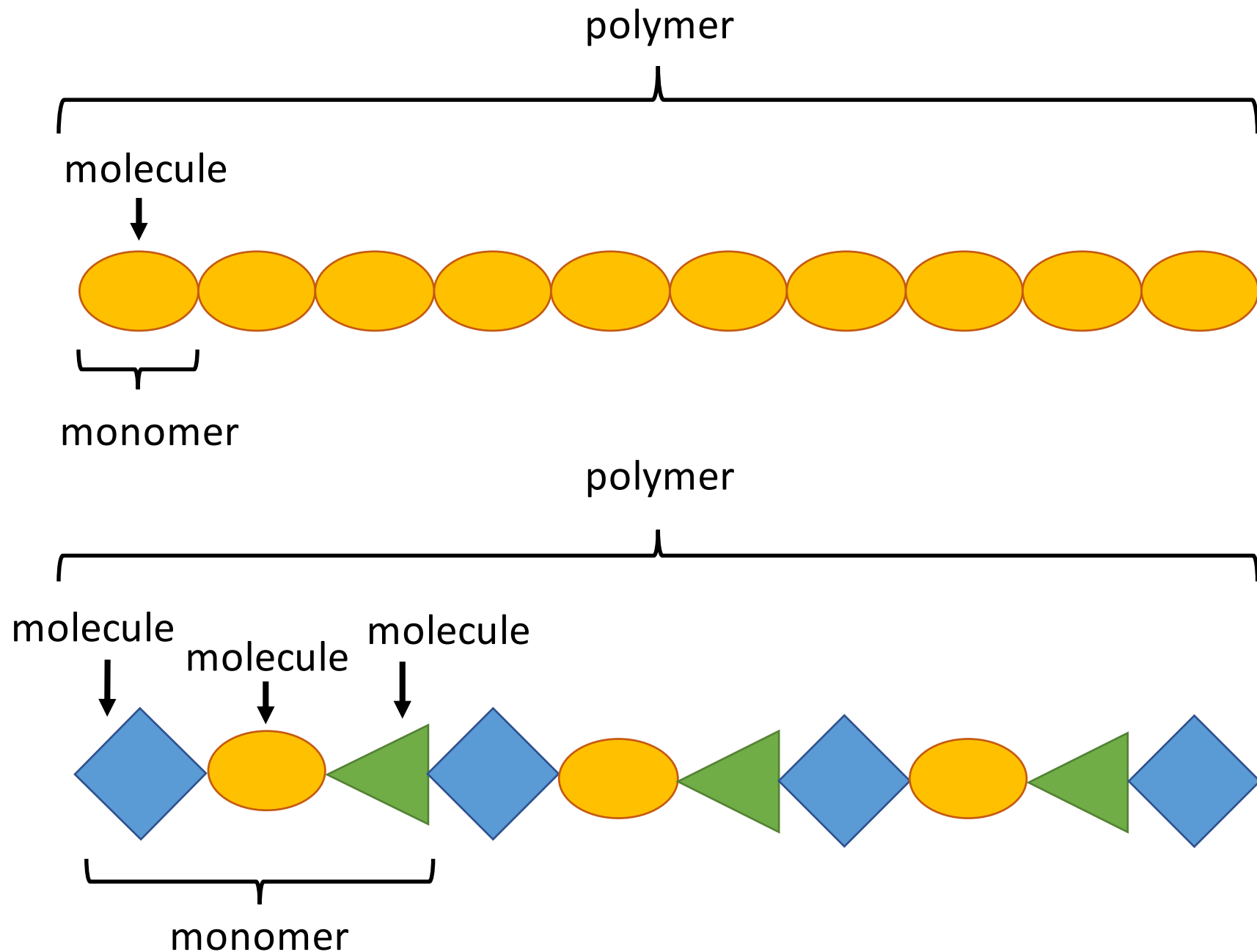


What
is a
polymer
?



Turn milk into plastic

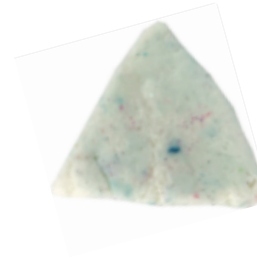


Milk

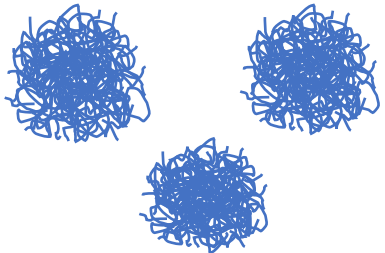
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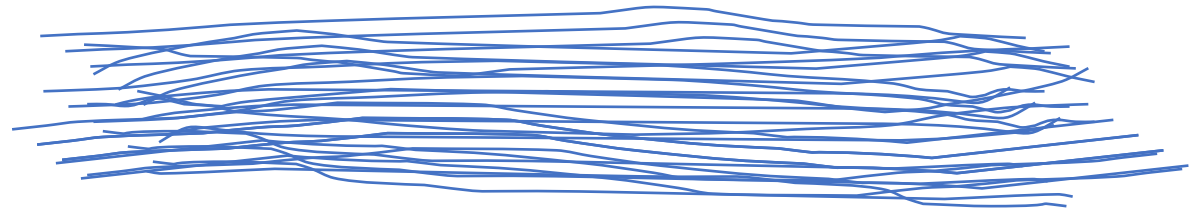
Vinegar



Casein plastic



Casein spheres



Unfolded casein chains

Materials you need

Teacher

- Measuring cup
- Milk
- Stovetop oven or microwave
- Microwaveable container
- Thermos
- White vinegar

Students

- Work surface that is safe to get damp
- Prepared hot milk
- Heat-resistant cup
- Prepared vinegar
- Paper towels
- Spoon
- Optional: food coloring, glitter, or markers



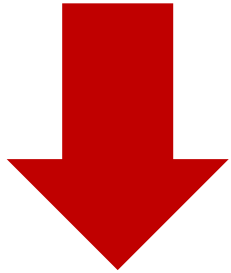
Add hot milk to vinegar



- Measure out 1 cup of milk with the help of your teacher
- Add milk to the prepared cup with vinegar

Stir milk-vinegar mixture

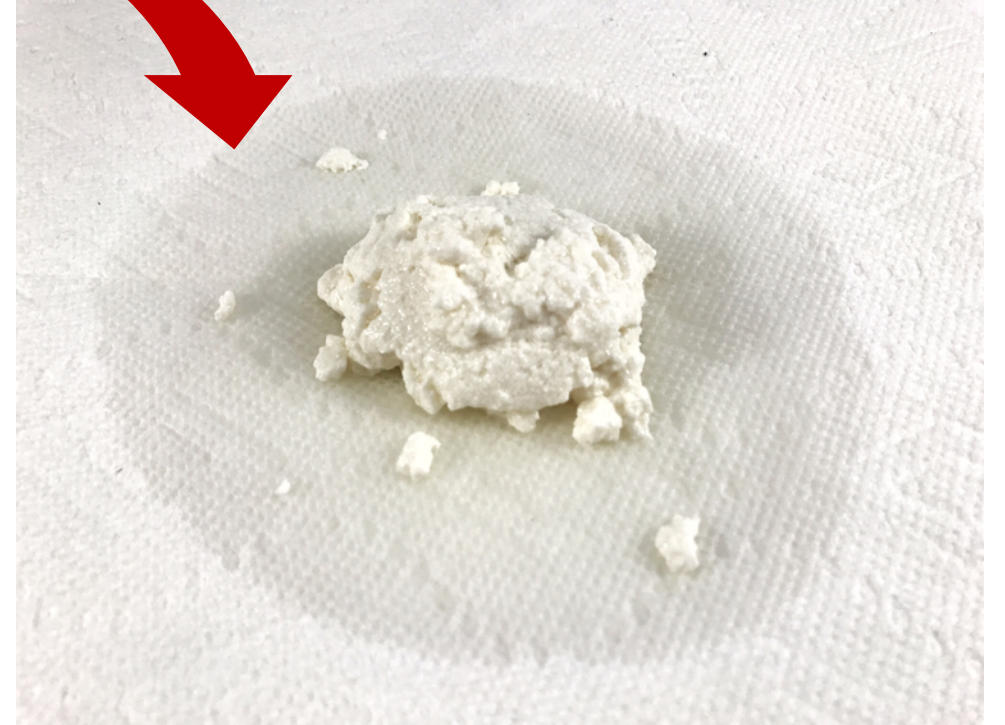
- Mix the hot milk and vinegar with a spoon for a few seconds



What happens to the milk?



Scoop out the solid curds



Four layers of paper towels

Remove excess liquid

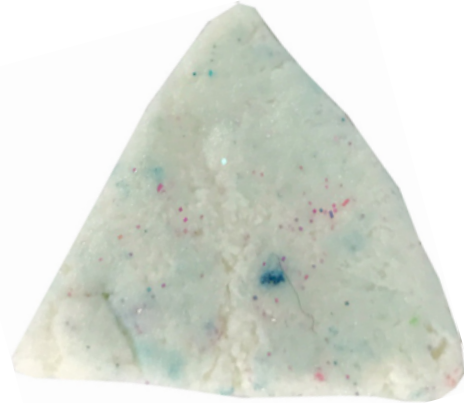
- Fold paper towel stack over the curds and press down on them
- Use two more paper towels to press down on top of the curds



Knead the curd with your hands



Mold and shape the milk plastic



- Knead the polymer well before shaping
- Optional: use food color, glitter or markers to decorate your products
- Let your milk plastic objects dry on a paper towel for about 48 hours