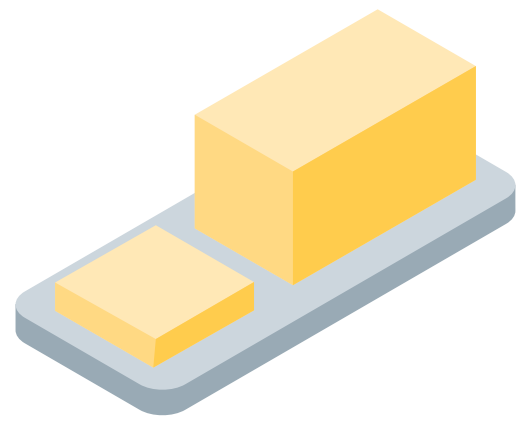


How to Make Butter



Materials:

- 1 cup of heavy whipping cream
- Cup or glass
- Clean jar with a tight seal (e.g. Mason jar)
- Stopwatch or clock
- Bowl
- Cold water

Instructions:

- Pour one-half cup of heavy whipping cream into a glass. Let it sit at room temperature for five hours. Keep the other one-half cup of cream in the refrigerator.
- Pour the room temperature cream into a clean glass jar. Put the lid on the jar and secure tightly.
- Start a stopwatch and begin to vigorously shake the jar.
 - How does the heavy whipping cream change as you shake the jar?
- Continue shaking the jar until butter forms (5-20 minutes). Grab a helper to keep shaking if your arms get tired!
- When the butter and liquid separate, stop shaking and pour the liquid out of the jar.
- Put the lump of butter in a bowl of cold water. Knead the butter to remove an excess liquid. Rinse the butter twice using this method.
- Store the butter in a small bag or container.

Science Variations:

- Repeat the process using cold heavy whipping cream instead of room temperature cream.
 - Is it faster to make butter from cold heavy whipping cream or room temperature heavy whipping cream?
- Weigh the amount of cream you start with and then weigh the amount of butter that you end with.
 - How much of the cream turned into butter?

Science Explanation:

As the cream is shaken in the jar, fat molecules begin to clump together, eventually clumping together so much that butter forms. These fat molecules separate from the liquid found in the cream. The liquid leftover is called buttermilk.

Heated molecules move faster. Therefore, the room temperature butter forms quicker than butter made from cold cream.