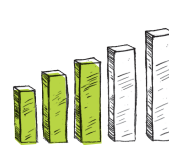


Marshmallow Molecules



MESS
METER: 3



ADULT
SUPERVISION
REQUIRED



SAFETY
PRECAUTIONS



PREP TIME: 5 MINUTES
EXPERIMENT DURATION: 15+ MINUTES

Supplies Needed

- 6 large marshmallows (we used Peeps)
- Glass bowl
- Spoon
- 1 tablespoon (15 ml) melted butter or coconut oil
- 1 cup (120 g) powdered sugar

Science Question:

What can cause the space between molecules to expand (grow) and contract (shrink)?

Often we can't see molecules moving. In this experiment we will watch molecules expand and contract in marshmallows.

The Experiment

Observe the size of the marshmallows, then place them in a bowl and heat in the microwave for 15 to 25 seconds, until the marshmallows have doubled in size. See how the marshmallows expanded with the heat?

Now push on the marshmallows with the spoon and watch them deflate with the pressure.

Add the butter or coconut oil to the melted marshmallows and stir it up. Spoon in the powdered sugar using just enough to create a non-sticky dough consistency.

The Outcome

You now have edible play dough that is a treat!

Why It Worked

Heat is energy and will cause the molecules in the marshmallows to move faster, expanding the space between them. As the molecules are compressed by stirring and cooling, the space contracts or gets smaller.

Variation

- Place a marshmallow in the freezer for a few hours. Can you guess what will happen to it?

Safety First!

The marshmallows will be very hot and sticky when you pull them out of the microwave. Do not touch them!

Did You Know?

The first marshmallows were made from the sap of the marsh mallow plant, and people have been eating marshmallows for thousands of years.