

Stay at Home Science



Microwave Soap

Caution! This experiment may cause your microwave to smell of soap for an extended time. Use an older or less-used microwave if possible.

What You Need

Bar soap (Fresh Ivory soap will produce best results)
Microwave
Microwave safe plate
Sharp knife

What You Do

1. Cut soap into approximately 1-inch cubes.
2. Place one cube of soap on a microwave safe plate and place in microwave
3. Watch closely as the microwave runs, stopping when the soap has expanded (20 – 60 seconds). Carefully remove from microwave.
4. Look closely and gently touch the soap. *What do you notice?*
5. Set your fluffy soap next to the sink or tub. It is still perfectly suited for washing hands!

Safety First! Cutting the soap and using the microwave should be done by adults only. Please use caution when removing materials from the microwave, as they may be hot.

Questions to ask

- *What do you notice happening to the soap in the microwave?*
- *How does the soap look and feel?*
- *Do you think this will work with other types of bar soap? Why or why not?*

What's the Science?

Microwaves heat food by exciting the water molecules within, causing them to vibrate and produce heat through friction. Ivory soap is known for containing air bubbles – making it the “soap that floats”. These gas bubbles expand as they heat up in the microwave, causing the soap to become large and fluffy.

Try This

Use science vocabulary: Use related science words such as solid, liquid, gas, friction, heat and expansion as you talk and play together. Children learn new vocabulary words when they hear grown-ups use them in context.

Extend your experiments: Try this same experiment with marshmallows or peeps! How much do they expand? Explore the properties of gases by inflating a balloon and placing it in the freezer. Measure the circumference before and after to see how it changes!

Keep in Mind

- Children are natural scientists; let them lead the way in their experimentation! Encourage them to ask questions and make suggestions only when they are stuck/discouraged.
- The order suggested is not the only right or perfect way. Adjust the activities based on the age, ability, and interests of the children.

Additional Resources

Wash Your Hands by Tony Ross
Change It! Solids, Liquids, Gases, and You by Adrienne Mason
Matter: See It, Touch It, Taste It, Smell It by Darlene Stille

