MONSTER MARSHMALLOW

Toast a marshmallow from the inside out.

THE SETUP

Picture a toasted marshmallow. Black and brown on the outside, white and gooey on the inside. Toasting a marshmallow in a microwave oven is a totally different experience.

You will need:
• A marshmallow
• A paper plate
• A microwave oven

Put a marshmallow on a paper plate and nuke it. The length of time will depend on the strength of your microwave oven. (Ours took one minute and thirty seconds on high.) As the microwaves bombard the marshmallow it appears to become a living thing: It grows to three times its original size, it moves and sways.

Remove the monster marshmallow from the oven. But don’t touch the monster marshmallow it’s very hot. Give it a few minutes to cool. Watch as it slowly shrinks and shrivels. The outside is white and looks uncooked. Break it open. The inside is brown. You’ve toasted your marshmallow from the inside out!

Eat your experiment when it’s cool. It is crunchy and delicious.
INSIDER INFORMATION
Microwave ovens cook by making water molecules in the food vibrate. The faster the molecules vibrate, the hotter the food gets. When the water gets hot enough, it changes into steam and escapes. This causes the tiny air spaces in the marshmallow to expand.
Unlike a campfire, which cooks from the outside in, microwaves penetrate the marshmallow and cook it all at once. The inside temperature of the marshmallow gets hot enough to brown the sugar. The outside surface is cooled by escaping steam so it doesn’t get hot enough to turn brown. The marshmallow will turn brown and burn after all the steam has escaped, so stop the microwave oven as soon as the puffing has stopped.