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Fun

Kids, Try This At Home!

Marshmallow Madness

by Jude Isabella

Marshmallows used to be made from the marsh mallow plant's root and can be traced way back to—no, not China—Egypt!

Not too long ago—in the 1800s, well before your parents were born—the fluffy confection reached its perfect, modern form with sugar and gelatin.

By the way, this experiment is much more fun with Peeps—you know, those little, yellow marshmallow birdies. (Don't worry, if we lose a few Peeps, plenty are born every day. At the Just Born candy factory in Pennsylvania, 3.8 million Peeps are hatched daily.) We, however, were "stuck" with regular, ol' white, cylindrical marshmallows. (So we painted faces on them.)

All photos by Gord More & Judy Somers

Instructions

1. Dip the toothpick in food colouring and blot faces onto two marshmallows.
2. Put the marshmallows on the paper plate. (Or paper towel).
3. Put the marshmallows inside the microwave and close the door.
4. Cook for about 30 seconds on the "high" setting. (Microwave temperatures do vary, so you might have to experiment with this. We know one thing for sure: microwaving a marshmallow for more than two minutes is gross—it turns brown and it stinks.)
5. Stand back and watch. The marshmallows puff up and the faces stretch out.
6. When the microwave stops, take the marshmallows out and wait a few seconds. (The marshmallows will be very hot.)
7. Pull a marshmallow off the plate. You can mold it into a funny shape. Leave the other marshmallow. It will shrink.
8. You can eat the cooled, cooked marshmallows if you want, but they don't taste that good.

Materials

- Marshmallows (or Peeps)
- Paper plates or paper towels (paper plates work better)
- Microwave oven
- Toothpicks
- Food colouring

What's Happening

The water molecules in the marshmallow vibrate furiously when cooking in the microwave. This, of course, makes the water heat up, warming and softening the sugar. Heat from the water molecules also warms up the air bubbles, and they start moving faster. They expand and bounce off the "walls" of the marshmallow. Since the sugar walls are softened, these active, growing air molecules make the marshmallow puff up.

When the marshmallow cools, the air bubbles shrink and the sugar hardens. The magic is over. And so is the marshmallow.

Fantastic Fail-free Fudge

by Jude Isabella

Food for thought: how did people with the last name Fudge come by their name? Were their family members master fudgemakers?

Who knows. We don't even know for sure where or when fudge was first made. Some food historians say fudge is an American invention, whipped up by madcap female college students. (Maybe because they weren't allowed to play football?) But, just like hockey, the origin of fudge is hotly disputed and everyone has an opinion. At *YES Mag,* we really only care about one thing—does it taste good and when can we eat? (Okay, make that two things.)

Materials

- 300-gram package of semi-sweet chocolate chips
- 300-gram package of milk chocolate chips
- 1.5 cups of sweetened condensed milk (we bought 2 300 ml cans)
- Dash salt
- 1 cup of chopped nuts (optional, of course, but we used walnuts)
- 1.5 tsp of vanilla extract
- Square 8x8 baking pan
- Wax paper
- Heavy saucepan
- Spoon

Instructions

1. Ask an adult for help as the fudge can get extremely hot.
2. In the saucepan, combine chocolate chips, sweetened condensed milk, and salt. Melt over low heat. Stir to prevent burning. In the meantime, line the baking pan with wax paper.
3. Remove the pan from heat and stir in the nuts and vanilla. (We accidentally dumped in too much vanilla. It was really yummy.)
4. Pour the chocolate elixir into the wax paper-lined pan and spread evenly.
5. Lick the spoon and the (now-cooled) pot.
6. Place fudge in freezer until it's firm.
7. Remove fudge from freezer, turn over on cutting board or plate, and remove paper.
8. Cut the fudge into squares. Eat one then pass the plate around.
9. Cover the fudge (if there's any left) and store at room temperature.

What's Happening

Remember, fudge is a crystalline candy. For creamy fudge, you want a lot of small sugar crystals.

Heating the mixture to a high temperature (112°C) and then letting it cool (to 43°C) makes a supersaturated solution. Supersaturated means more sugar molecules are in solution than the solution can hold. This is a very unstable time in the fudge-making process. Supersaturated solutions are easily disturbed—stir it one bit and you've allowed the sugar molecules (sucrose) to find each other and hold on tight, forming big sugar crystals that make for a grainy fudge. Blech.

In more complicated fudge recipes (that call for cream, milk, and sugar separately) it's important to stir during the cooling process (43°C and dropping). Stirring at this time produces thousands of little sugar crystals. It can get a little tricky.

That's why we chose the easy route. Because we used sweetened condensed milk, we avoided the pesky problem of manually controlling sugar crystal formation—stirring at precisely the right time, until your arm falls off. We like to think of our fudge as "automatic". Of course, some people think this is not fudge and that we are cheating. To that, we say, *priorities*!