

Make Your Own Marshmallows

Next time you get set to make hot cocoa on a chill winter afternoon, consider this: if you make your own marshmallows, you can mix up some very interesting third grade chemistry lessons while you're at it!

Here's the deal: marshmallows depend on gelatin, a common household ingredient. But for third grade scientists, gelatin is also a great way to demonstrate how molecules can rearrange to change matter from one state to another. Follow the directions below to see just what can happen when gelatin meets some sugar, cornstarch, and heat.

What You Need:

- 2 envelopes of plain, unflavored gelatin
- ½ cup cold water
- 1 cup light corn syrup
- ½ cup granulated sugar
- 1/3 cup cornstarch
- ½ teaspoon vanilla
- 1/3 cup confectioner's sugar



What You Do:

1. In a small bowl, combine the cornstarch and confectioner's sugar. Grease the sides of a 9" square baking pan, and place a sheet of parchment paper or wax paper, cut to size, along the bottom and then grease that, too. Use a bit of the cornstarch mixture to dust the bottom and sides of the greased pan.
2. Now place the contents of the two packets of gelatin into a small saucepan, and mix in the ½ cup of cold water. Let it stand for one minute, and then cook and stir over low heat until the gelatin is fully dissolved. (What's happening? The water has spread out the special protein fibers that make up the gelatin, and the heat has dissolved their original bonds. That's why the gelatin seems to "dissolve" into the water.)
3. Now pull out a mixing bowl, and blend the granulated sugar, corn syrup, and vanilla. Add the gelatin mixture, and beat the whole mixture thoroughly—for up to 12-15 minutes—with an electric mixer. Watch the mix become thick and creamy. Pour it into the greased baking pan, and let it stand at room temperature for at least 4 hours. (What happens: the protein bonds will begin to re-form as the gelatin cools...but now it's mixed with other ingredients, so it will hold them together, too, in classic "marshmallow" texture.)
4. After four hours, or overnight, place the white sheet on a cutting board which has been sprinkled with the remaining cornstarch-sugar mixture. Cut into cubes with a knife (hint: it's helpful to dip the knife into hot water first, to keep marshmallow goo from sticking!)
5. Roll the cut-up marshmallows in the cornstarch mixture to keep them dry to the touch...and then devour!