

Making Molds

We tend to take the shapes of foods for granted, but that doesn't mean we should. There are lots of amazing things you can do with molds besides making heart-shaped chocolates or ice cream cones. You probably don't think of cake pans or cookie cutters as molds, but they change the shapes of foods: cake pans confine the 3D volume that batters can fill and cookie cutters define the 2D shape of rolled doughs. What sorts of fun arts-and-crafts things can we do to make our own shapes?

A quick primer on molds: molds can be either rigid or flexible and heat-safe or not. Rigid, heat-safe molds are almost always metal (historically copper) and are used for baked foods such as cakes and madeleines as well as cold-setting foods like gels (*mmm*, Jell-O), chocolates, and sugar decorations. Flexible culinary molds are made with either plastic or food-grade silicone rubber, the latter also being heat-stable.

Before making a mold, think about what food you want to put in or on it. Do you need a heat-safe mold? Does the mold need to be flexible for you to be able to remove the food? Gels are flexible and don't need to be heated, so even rigid plastic molds work. Jell-O will work (rather boringly so); or get creative and use a flavored panna cotta recipe (see page 424). Heat-safe molds are needed for sugar work—say, shaped lollipops—as well as batters that need to be baked (Bundt cake, anyone?). For these foods, use either metal or silicone molds, opting for either a stiff or a flexible one based on the food.

Enough talk about how molds are normally used. What I want to discuss is how to make your own—in whatever shape you like!

Cookie cutters are easy to create, and making one is a fun holiday project. Plus, you probably already have everything you need on hand. Want an R2-D2-shaped cookie? Grab an empty aluminum soda can, your kitchen shears, and a pair of needle-nose pliers. Snip a round strip from the can, fold in the top and bottom of the strip to create clean edges, and use the pliers to bend and shape the strip. (A cardboard cutout template of the desired shape, R2-D2 or otherwise, will help.) If you happen to have access to a CNC (computer numeric control) printer, you can print a cookie cutter out of ABS plastic molds and wrap it in aluminum foil (ABS plastic isn't food grade, and some extruder heads contain lead).



*Tux the Penguin cookies, made using a CNC-printed cookie cutter.
See <http://cookingforgeeks.com/book/cookie-cutter/> for files.*

Simple crude chocolate and sugar candy molds can be made by pressing an object into a layer of cornstarch. Like with sand casting, pressing an object into the cornstarch and removing it leaves a “footprint” behind. Fill that void with chocolate or hard-crack state sugar (sugar syrup heated to 300°F / 150°C), let it cool, and *voilà!* While this method is quick—*mmm*, chocolate LEGOs—the cornstarch tends to stick to the finished food and the mold doesn’t pick up much in the way of details. It’s a fun experiment that doesn’t require much work, but not likely to be a regular technique.

Silicone rubber molds are great at picking up detail (e.g., chocolate coins with recognizable faces) and are usable between –65°F / –53°C and 450°F / 230°C. The downside is availability and cost—you’ll have to order supplies online, and the cost for larger molds can add up. Still, it’s worth it: silicone rubber molds that you see at the store are one-part molds without much detail; the beauty of the DIY option is in detailed multipart molds that can be baked and flexed to pop off of various shapes. Flat objects (coins, keys) and convex objects (no concave shapes, so oddly, asparagus) are easiest to make molds of: drop the object into a flat tray, coat it to cover, let the mold set, remove and flip the object, and then coat the other side. Vintage plastic toys that come from simpler molds (e.g., cars, toy soldiers, dinosaurs) are easy enough to make molds of too: place the toy into a plastic container, coat it to cover, let the mold cure, then unmold the toy and carefully cut the mold in half. (You may need to cut a sprue in before being able to pour food in.)

Plaster of Paris, a.k.a. calcium sulfate, is used to make plaster bandages, which are heat-safe and nontoxic. Plaster bandages are rolls of cloth coated with calcium sulfate; a strip is cut off, dipped in a bowl of water, and wrapped around the object (historically, a broken arm; these days, mainly objects for arts-and-crafts applications). Coat whatever you’re going to wrap—beach ball, tree branch, large tire inner tube—with a generous layer of shortening first, which will act as a mold release, and then cover the object with three to five layers of plaster bandage. If you need to cut the plaster bandages after they’re dry, use an angle grinder with a grit disc. Food-grade calcium sulfate is hard to find (it’s used in making tofu but not in plaster bandages), so you may want to line the mold with parchment paper, depending upon your use.



Some molds are just surfaces on which foods are added, cooled, and then removed, such as for making ice cream cones and chocolate leaves. To make chocolate leaves, coat the back side of lemon or rose leaves with tempered chocolate, rest at room temperature for an hour or two, and peel the leaf off. Try coating the leaf with a thin layer of white chocolate first to highlight the leaf venation.



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You don't have to make a mold to get creative: use existing molds in different ways. Bake an “Apple” apple pie in a square cake pan. Use a knife to cut the logo, or do what Lenore Edman and Windell Oskay of Evil Mad Scientist did: use a laser cutter. See <http://cookingforgeeks.com/book/appleapplepie/> for details.

Sugar Cone Bowls for Ice Cream

Ice cream cones, sugar cone bowls, and even American-style fortune cookies are all the same recipe—a super-sweet sugar cookie—just set into different shapes using different molds. Start with these sugar cone bowls; if you want to get craftier, look online for instructions on how to make molds and templates for sugar cones. (In a nutshell, use thick paper to create a cone, cover it with aluminum foil, and then roll a round disc of sugar wafer around the cone before it cools.)

Expect to have to make a few of these before getting something workable. This recipe should make about 8 small bowls.

Preheat oven to 300°F / 150°C.

In a bowl, thoroughly mix together:

- ½ cup (100g) sugar**
- 2 large (60g) egg whites**
- 1 teaspoon (5 mL) vanilla extract**
- ½ cup (70g) flour**
- 2 tablespoons (30g) butter**

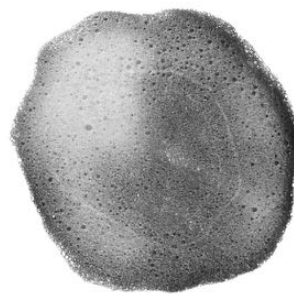
Cut or tear eight sheets of parchment paper, each about the size of a sheet of US Letter paper (8.5" × 11" / 21.5 cm x 28 cm). Each sheet will be used for a bowl; start by baking one at a time, but you can bake them two at a time as you get the hang of it.

Drop about 2 tablespoons of batter on the center of a sheet of parchment paper, and using the back side of a table knife, spread the batter out into a circle of uniform thickness.

Transfer the parchment paper to a cookie sheet and bake the batter in the oven for about 20 minutes, until the entire cookie is a golden brown. (You'll get a more uniformly brown cookie by baking these at a lower temperature for longer.)



Cookie baked at 300°F / 150°C.



Cookie baked at 350°F / 180°C.

Now, for the mold part: find a drinking glass (that's made of glass—not plastic!) with a base that's roughly the shape that you want for your sugar cookie bowl and set it upside down on the counter. Remove the cookie sheet from the oven and, using your fingers, pick up the sheet of parchment paper. Quickly place it upside down on top of the drinking glass (1)—cookie centered over the glass and directly touching it—and continue to hold the parchment sheet in place with one hand. Use your other hand to drape a kitchen towel over the sheet and press down, using the towel as a hot pad (that sugar cookie should be hot!). Use both hands to quickly press the edges of the cookie down the sides of the glass.

After 20–30 seconds, the cookie will have cooled and set. You can slip it off the glass, and then carefully peel the parchment paper off, tearing it if necessary to work it out of any folds (2).



1



2



Notes

- *Sugar is hygroscopic, so homemade sugar cone bowls will pull in lots of moisture from the air and lose their snap after a few hours. They're still delicious, of course, just not quite as delicious.*
- *Try adding seeds or other ingredients—sesame seeds, poppy seeds, candied ginger—to the dough; you can sprinkle these on top around the edges of the flattened-out dough to give the cookie a flavored edge.*