

Squishy Toy Tutorial

This tutorial guides you through making a squeezable, stretchable squishy toy in whatever shape and color you desire. You will first sculpt a prototype out of clay, then create a mold of your prototype, and finally use the mold to cast the toy.

You will need:

- 2-part silicone resin *
- Composimold molding material**
- modeling clay
- pigment (acrylic paint, resin dye, or mica pigment powder) ***
- a disposable measuring cup
- a heat-safe, flat-bottomed container large enough to contain your toy
- an X-acto knife
- a needle or toothpick
- a well-ventilated work area
- a microwave
- clothes you don't mind staining

* For cost-effectiveness, I recommend Elmer's Squishies Refill Pack for small (under 5oz) projects, and Smooth-On's Ecoflex Shore 00-20 for larger projects.

** Composimold is the only mold making material I have found that does not react to the silicone resin and that preserves details well. Most mold making kits are silicone-based, which will fuse with the resin, ruining the mold, or latex-based, which prevents the resin from curing. If you want to try a substitute, make a small test mold first, and then mix up a test batch of silicone resin to see if it reacts to the mold in any way. You can also try using a silicone mold with mold release, but be sure to coat the mold evenly and be aware that the mold release may obscure some detail.

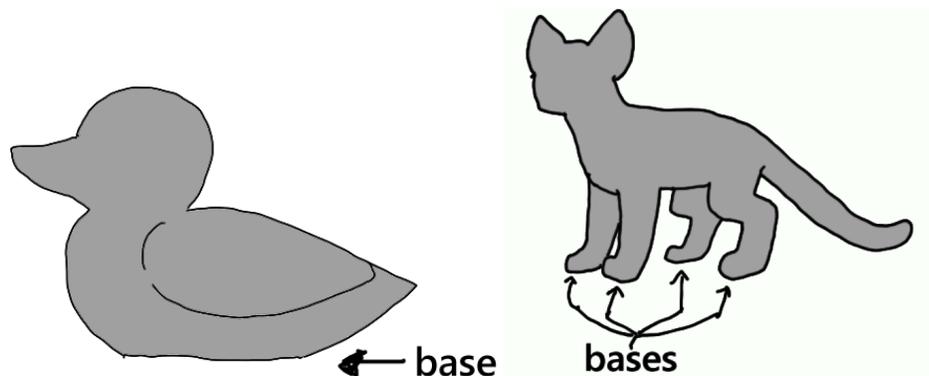
*** There are several factors to consider when choosing a type of pigment.

Pigment Type	Pros	Cons	Notes
Acrylic paint	Easily obtained, easy to mix colors	Adding too much will prevent resin from curing	Regular paint will leave a solid finish, shimmer paints will add some sparkle
Resin dye	Works consistently	Has an odor, limited colors, color looks different in the bottle	Comes in both translucent and opaque
Mica pigment powder	Works consistently	Messy, difficult to mix colors, must wear facemask when using	Adds a subtle sparkle effect

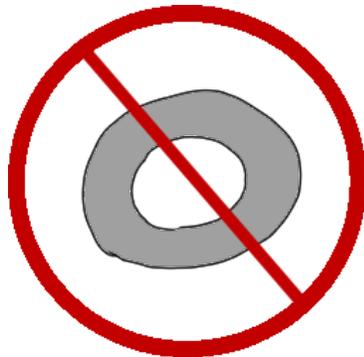
Steps

1. Make the Prototype

- a. Using the modeling clay, sculpt a prototype for your squishy toy. Keep in mind that the mold will pick up a lot of detail, including detail you don't want such as fingerprints. Smooth out any imperfections that you don't want on the toy.
- b. Decide what part of the prototype will be the **base** — the part which touches the bottom when making the mold — and flip your prototype (if necessary) so that the base is on the bottom. The base should be a wide, flat area. Typically the base will be the bottom of the prototype, but in some cases it may make more sense to use another part for the base. The base can touch the ground in more than one spot (such as multiple legs), but keep in mind that this will make the mold-making process more complicated.

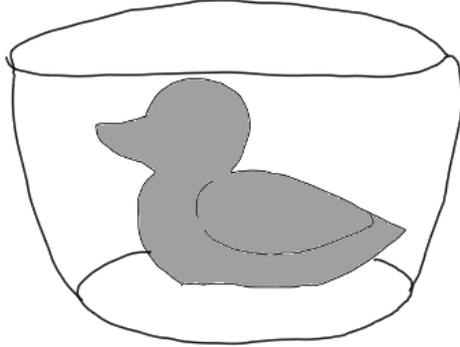


- c. Check your prototype for **holes** — areas where empty space goes through the entire prototype — and if you find any, fill them in. Holes can cause your prototype or final toy to become trapped in the mold.



2. Prep the Prototype for the Mold

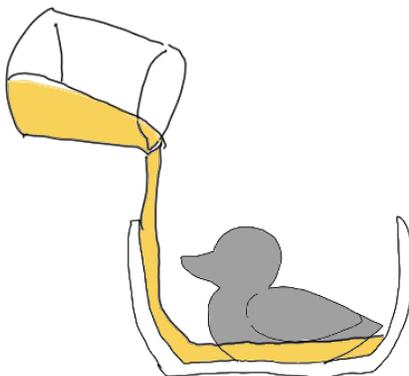
- a. Place the sculpted clay prototype into the container, with the base on the bottom, and press down firmly to stick the clay to the surface. Make sure the lip of the container is higher than the top of your prototype.



- b. Put the container with the prototype into the freezer for 20 minutes. This will minimize the chance of warping when making the mold.

3. Make the Mold

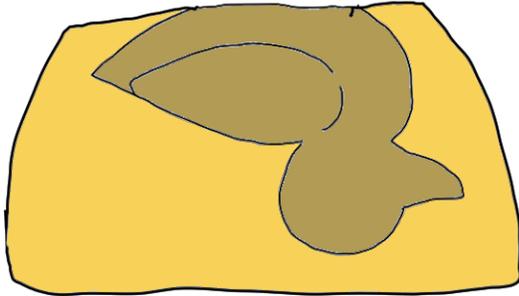
- a. Take the container out of the freezer.
- b. Heat the Composimold in the microwave for 20-second intervals until it is fully liquid. If it starts to bubble, it's too hot! Do not use overheated Composimold; wait for it to cool down before pouring.
- c. Pour the Composimold slowly into the container. Try to avoid pouring directly onto the prototype; instead, aim for the side of the container and let the liquid flow up to cover the prototype. Make sure the entire prototype is completely submerged with at least $\frac{1}{8}$ of an inch covering the highest point of your prototype.



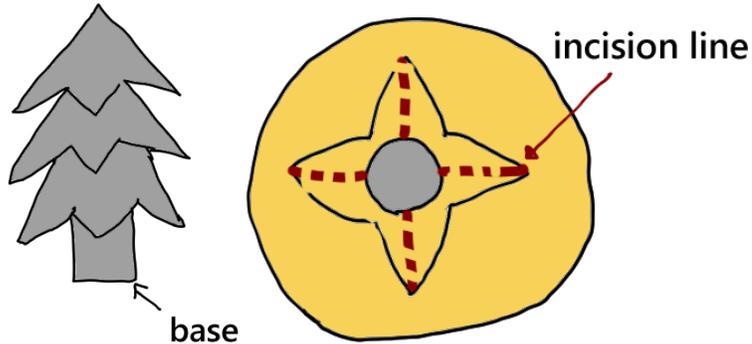
- d. Look for bubbles sticking to the surface of your prototype. If you see any, use a needle or toothpick to remove them. If there are many bubbles, gently shake or tap the bowl to dislodge them.
- e. Once the bubbles have been removed from the surface, place the container back in the freezer for another 20 minutes.

4. Remove the Prototype from the Mold

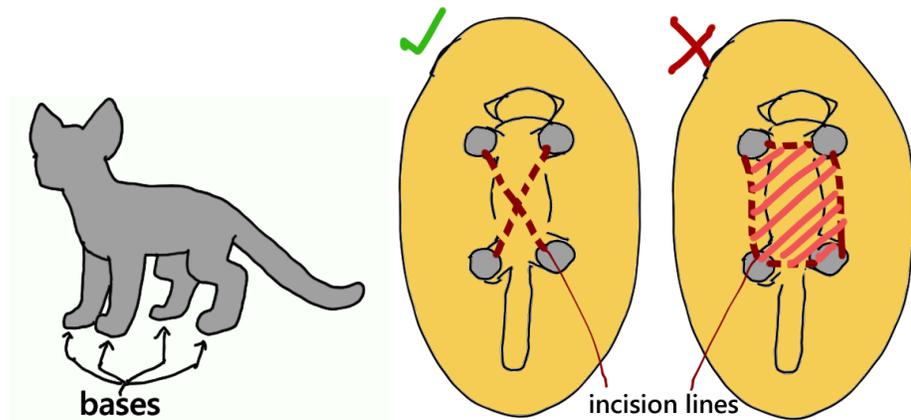
- a. Once the Compositesimold has hardened, take the container out of the freezer.
- b. Separate the mold from the container and flip the mold upside-down, so the base of the prototype is on top.



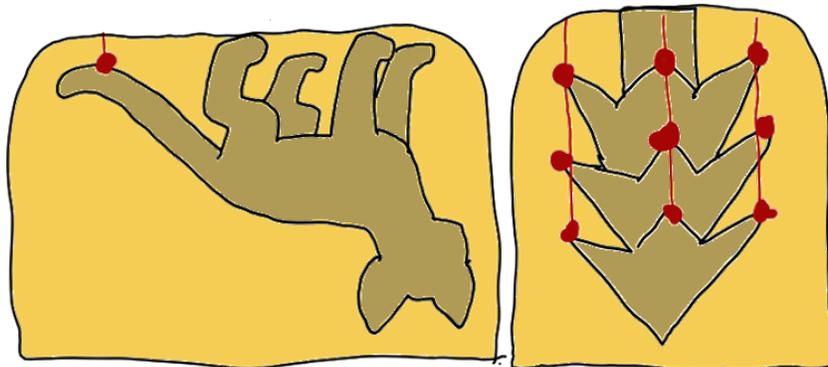
- c. Before removing the prototype, you may need to make an incision into the mold with the X-acto knife. If your prototype's base is smaller than the rest of the prototype, or if your prototype has multiple bases (e.g. legs), incisions are necessary to remove both the prototype and the finished toy from the mold.
 - i. For small bases, the incision(s) should go outward from the base and continue on until it is the width of the widest point of the prototype.



- ii. For multiple bases, the incision(s) should connect all of the bases **without** cutting out an entire section of the mold.



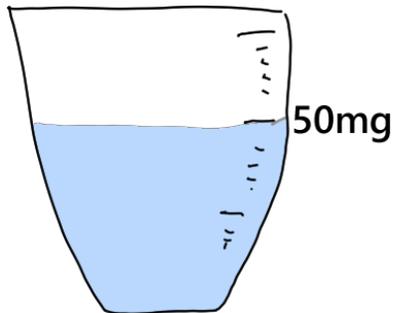
- d. If there are any parts of your prototype that point downwards without touching the ground, such as a tail, you will need to create a hole for air to escape from. Press the needle or toothpick straight down through the top of the mold (still upside-down) until you reach the prototype. Then remove the needle/toothpick.



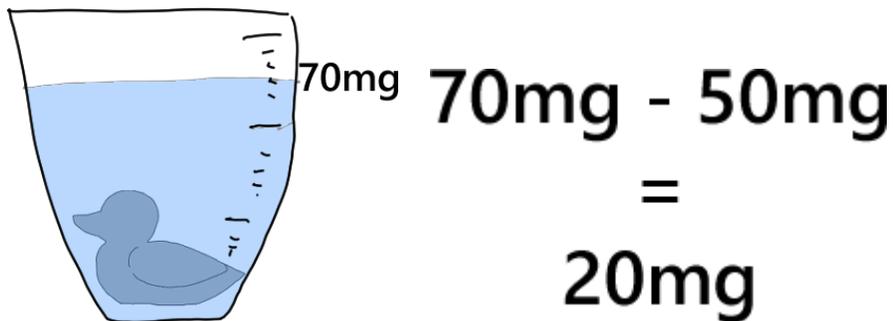
- e. Remove the prototype from the mold by pulling it out through the hole made by the base. If you made incisions in step c, you may need to pull the incisions open to fit the prototype through the hole. Don't worry about the prototype breaking or stretching; at this point the prototype no longer needs to keep its shape. Make sure all of the clay is removed from the mold; keep in mind that small details may break off and stick to the mold. Set all of the clay from the prototype aside for the next step.

5. Pour the Resin for Your Toy

- Fill a measuring cup partway with water. Note the exact amount of water the cup contains.



- Place the prototype in the measuring cup, taking care not to spill any water. Subtract the amount of water you originally had in the cup from the amount you currently have in the cup to calculate the volume of silicone resin you will need.



- Empty and dry the cup.
- Pour equal parts of resin Part A and resin Part B into the measuring cup. The total amount of resin in the cup should equal the volume of silicone that you need, calculated in step b.
- To add color to your toy, add pigment to the resin in the cup. If you are using acrylic paint or resin dye, 1 drop per 10 mg of resin is sufficient. If you are using mica pigment powder, start with $\frac{1}{8}$ teaspoon of powder and add more if desired.

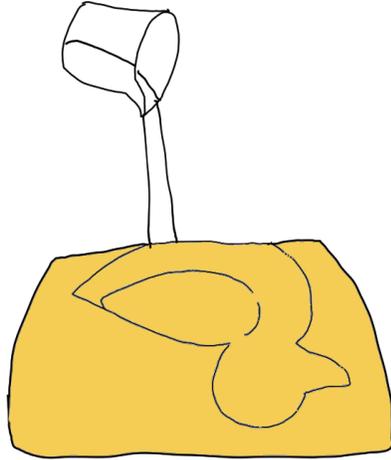
Caution:



Pigment powder is hazardous if inhaled. Wear a face mask while pouring and mixing pigment powder.

- Mix the contents of the measuring cup thoroughly. Stir for at least sixty seconds, Avoid introducing air bubbles by stirring gently.

- g. Pour the resin into the mold. The more slowly you pour, the less chance of air bubbles. Check for air pockets where the resin is not filling in, and rotate or shake the mold to allow these air pockets to escape.



6. Demold the Resin

- a. Wait at least 2 hours for the silicone resin to **cure** (solidify). It may cure in less time than 2 hours, but freshly cured silicone attracts dust which can be difficult to remove.
- b. Bend the mold until the resin begins to separate from the mold edges. Then gently pull the resin out through the hole in the base.

Congratulations! You have made your first squishy toy.