

POLYMER WEEK

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FAIRY BALL-JOINTED DOLL

by Eduardo Farillo

Inspired by sugar plum fairies for the holiday season, the stunning natural formations of ice crystals seen under a microscope, and the joy of toy making, Eduardo blended these elements to create a ball-jointed doll with removable wings that can be swapped for different designs. "I modified the doll from my AI self-portrait, which many people were curious about," he laughs. Ready to dive into this meticulous project?

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TOOLS & SUPPLIES

POLYMER CLAY

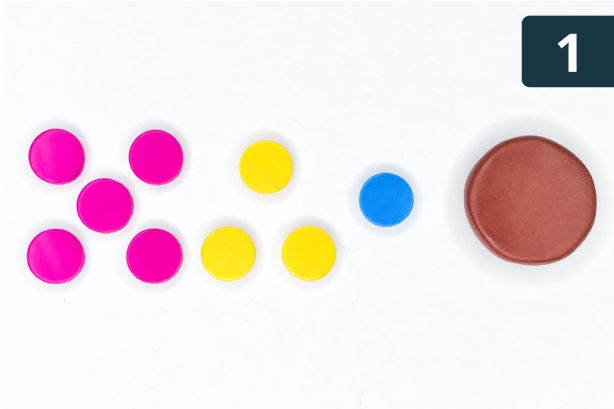
- Fimo Professional - black, white, blue, magenta, yellow
- Fimo Effect - translucent
- Transparent liquid clay

MATERIALS

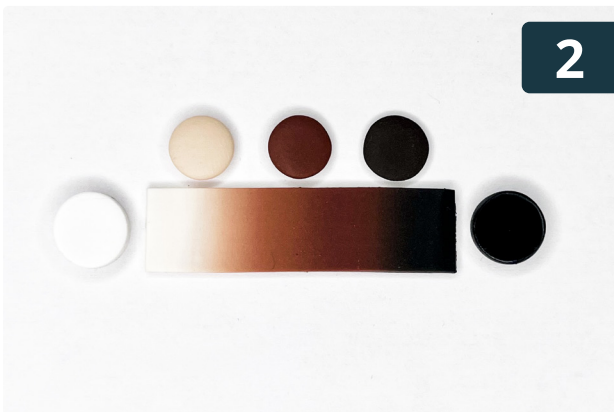
- cornstarch
- acrylic paint
- 2 thin and 1 thicker round magnet
- 1 mm diameter elastic cord
- wing template
- silkscreens

TOOLS

- pasta machine
- needle tool
- 2 mm diameter bead piercing needle
- scalpel
- ruler
- ball tools
- scissors



Mix 5 parts magenta, 3 parts yellow, and 1 part blue clay to create the base skin tone for the doll. For a darker skinned doll, use a half block (approximately 25 g) of magenta clay for all five parts, three fifths of a half block of yellow, and one fifth of a half block of blue.



The base skin tone color can be adjusted with white clay to make it lighter or black clay to make it darker. For a lighter skinned doll, make a small amount of the base brown clay and mix it gradually into three quarters of a full block of white clay until you reach the desired shade.



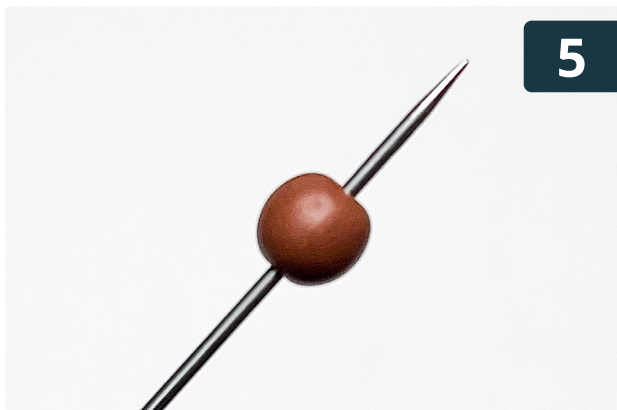
Make balls of the following diameters for the lower body of the doll:

- pelvis 18 mm
- hip joint 10 mm x2
- thigh 15 mm x2
- knee joint 8 mm x2
- calf 13 mm x2
- ankle joint 5 mm x2
- foot 9 mm x2



Make balls of the following diameters for the upper body of the doll:

- head 18 mm
- neck 11 mm
- chest 20 mm
- abdomen 20 mm
- shoulder joint 9 mm x2
- upper arm 11 mm x2
- elbow joint 6 mm x2
- forearm 10 mm x2
- wrist joint 4 mm x2
- hand 9 mm x2



5

Pierce the hip, knee, and ankle joints with a 2 mm diameter needle.



6

For the knee joint, make two cuts into the center of the ball with a scalpel on each side of the needle. Then insert the point of the scalpel into the ball to remove a section of clay between the two cuts. This will create a slot for the elastic cord.



7

Repeat the previous step to make a slot below the first one, aligned with the needle, on the opposite end of the needle hole opening as pictured.



8

For the first hip joint, cut the slots in the same manner as the knee joint. Then make a third slot perpendicular to one of the previous two. The slots should meet at the center hole.



For the second hip joint, mirror the slots of the first one.



For the ankle joint, make two cuts into the center of the ball that are perpendicular to the needle.



Cut into the clay with the scalpel to create one long slot perpendicular to the needle hole. Bake all the ball joints for 15 minutes.



Roll the balls for the thighs into a tapered log. Apply some cornstarch to the larger end and push in the hip ball joint to create a slight socket. Do the same on the smaller end of the log with the knee joint, using a smooth section of the ball joint. Alternatively, you can use a ball tool.

13



Repeat the previous step using the balls for the calves. Push the knee joint into the larger end and the ankle joint into the smaller end.

14



Cut into the bottom of the thigh and the top of the calf with a scalpel at approximately a 45 degree angle. This will create room for the two pieces to close together when bending the knees of the doll.

15



Carefully pierce the thigh and calf pieces down the center with a needle. To minimize distortion, insert the needle halfway from one direction and then fully from the other direction. This also helps keep the hole centered.

16



Roll the foot balls into 15 mm logs. Flatten one end and shape the other end upward to begin shaping the feet.

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Refine the shape of the feet and use the ankle ball joints or a ball tool to create an ankle socket.



Create toenails with a needle and pierce the feet through the center of the socket. Use a ball joint on the underside of the foot holes to create space for the knotted cord when the doll is standing. Repierce with the needle to reopen the hole if necessary.



Shape the pelvis ball as pictured.



Create two sockets for the hip joints using the hip balls or a ball tool. Make the sockets slightly wider to accommodate the thigh pieces when moving the doll's legs, especially when sitting. Position the sockets slightly forward to create more of a pelvic area in the front and a rounded buttocks shape in the back.



21

Refine the shape of the hip sockets and thin the space between them.



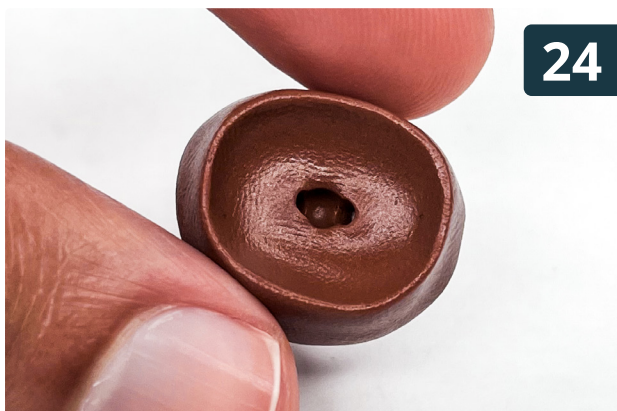
22

Pinch around the top of the pelvis piece with your fingers to create a socket for the abdomen.



23

Pierce the center of the hip sockets at an angle so the needle exits at the top center of the abdomen socket.



24

Use a small ball tool to create a space connecting the two pelvis holes. This space will accommodate the elastic cord knot connecting the abdomen to the pelvis. Bake the pelvis piece for 15 minutes.

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Create the shoulder, elbow, and wrist ball joints using the same steps as for the hips, knees, and ankles. Because the wrist joint is very small, you can bake it after piercing and then cut the slot to prevent distortion. Bake all arm ball joints for 15 minutes.



Create tapered logs for the upper arms and forearms and create the sockets in the same manner as for the legs. The upper arm logs are 18 mm long and the forearm logs are 20 mm long.



Pierce the upper arm pieces and the forearm pieces.



Cut the bottom of the upper arm and the top of the forearm in the same way as the knee joint area to allow the elbow to bend closely.



Shape the hand balls into an avocado-like shape. Flatten the larger end and shape it as pictured. Shape the bulge on the side into a thumb. Mirror the process for the right and left hands. Cut into the flattened portion with a scalpel to create the fingers.



Refine the fingers by rounding the tips with a needle and running a needle between the fingers to round the edges and create space. Use a needle or another tool to create fingernails. Lengthen the wrist area to make the wrists thinner.



Cut off the clay above the wrist and use a ball tool to create the wrist sockets.



Carefully make a hole at an angle from the center of the wrist socket to the middle of the palm for each hand.



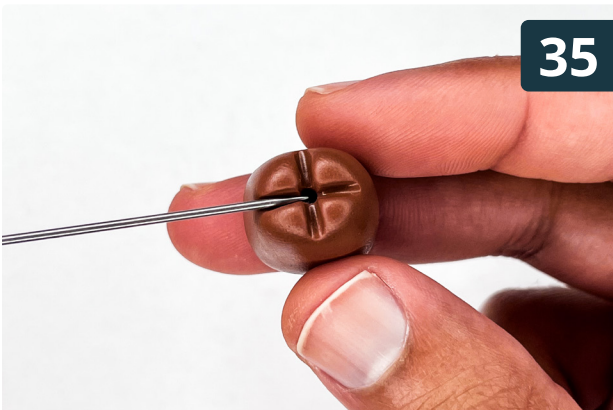
33

Shape the ball of clay for the abdomen as pictured.



34

Pierce it lengthwise down the center and press into the back with your thumb to create a slight arch in the lower back. Ensure the bottom end fits into the top space of the pelvis.



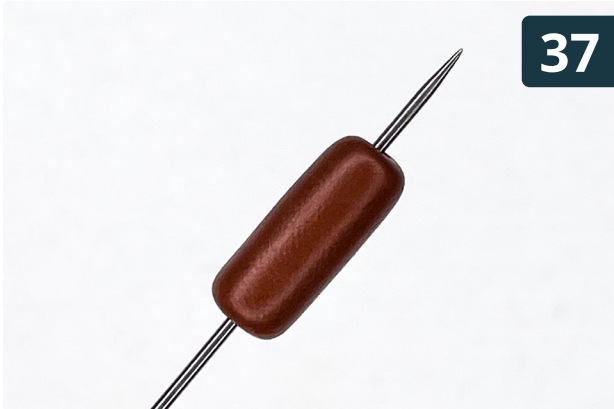
35

Create slots in the shape of a cross centered on the needle hole.



36

Repeat on the other end and repierce with a needle if necessary. Make sure the abdomen still fits onto the pelvis. Use a small ball tool to create a belly button on the front, non arched side.



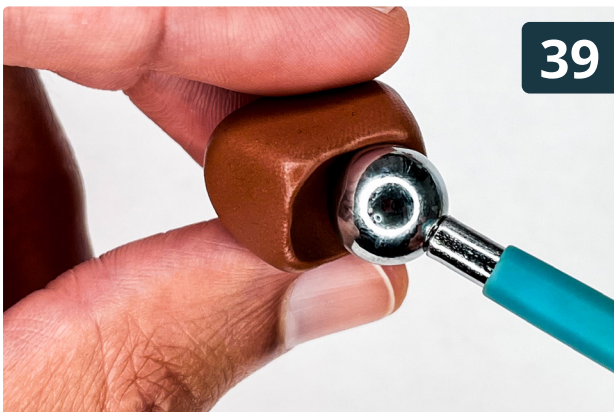
37

Roll the neck ball into an 11 mm log. Pierce it and bake it with the abdomen for 15 minutes.



38

Shape the chest ball as pictured.



39

Create an indented area at the bottom of the chest so the top of the abdomen piece will fit.



40

Place the chest piece on top of the abdomen with cornstarch. Pierce the chest piece while connected to the abdomen. Insert the shoulder ball joints as pictured.



Press the neck piece a few millimeters into the top of the chest with cornstarch to create another socket.



Remove all pieces from the chest and pierce it with a needle from one shoulder socket to the other, passing through the neck socket.



If making a doll with breasts, create two balls of clay. Flatten them on one side and thin the top edge. Attach them to the chest and smooth the seams. Bake all body pieces and ball joints created so far for 30 minutes.



Shape the head ball as pictured or use a head shape of your choice. Create a space for the neck piece with a ball tool.



45

Bake two rounded oval shapes of white clay for the eye-balls. Place them into the head and cover the tops and bottoms with thin pieces of clay for eyelids.



46

Flatten two balls of clay and place them where the cheeks should be. Smooth them onto the face.



47

Create a longer ball, flatten it, and smooth it onto the mouth area. Use a needle to form the lips. Attach a triangle piece and two smaller balls for the nose and nostrils. Use a small ball tool or needle to create nostril holes. Use black clay for pupils and eyebrows. Attach the pupils with a dot of liquid clay.



48

Use very thin pieces of black clay to create upper eye-lashes. Make shallow holes on each side of the head to mark ear placement. Bake the head for 15 minutes. Double check that the neck piece fits before baking.



On the baked head, attach clay to the scalp in your chosen hair color. Depending on the hairstyle, attach more hair colored or skin colored clay to the back so the neck piece will be surrounded. Insert the neck piece to check the fit. Mark hair texture with a needle and bake for 15 minutes.



Attach any additional clay for the hairstyle and bake again for 15 minutes.



Place two thin ear shaped pieces of clay over the ear holes.



Use a small ball tool or needle to create the ear structure.



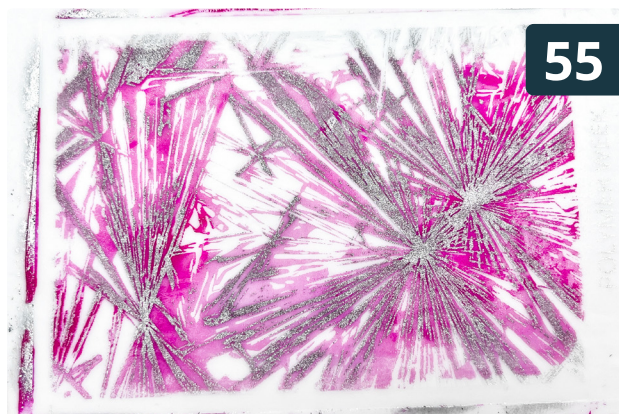
53

Use any clay color to create hair accessories, jewelry, and makeup.



54

Use clay to color fingernails and or toenails if desired.



55

Roll a sheet of translucent clay 1 mm thick or thinner and large enough for the wing template. Burnish silkscreen pattern B onto the surface. Apply acrylic paint or pigment powders to create the wing pattern. Repeat using silk-screen layer A with a second color.

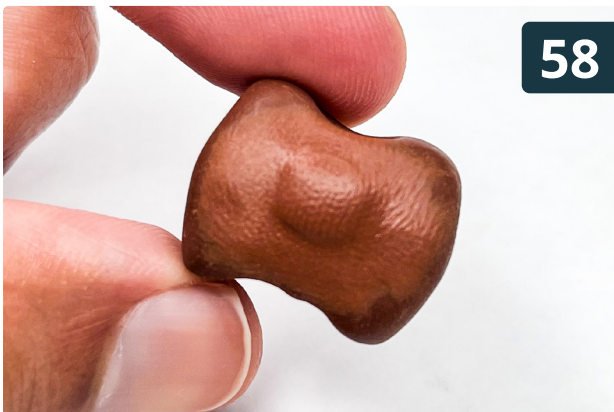


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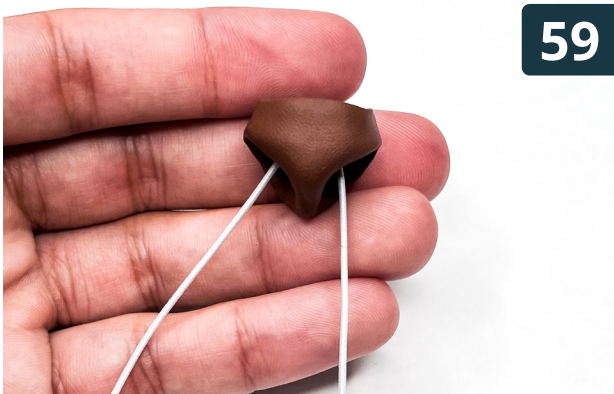
After the paint dries, place the wing template on the clay and cut around it with a scalpel. Shape the wings slightly and bake for 15 minutes. Apply a drop of liquid clay to both sides of a small thin magnet and attach it to the wing center. Cover the magnet with a very thin layer of translucent clay and smooth the seams.



Place another thin magnet on the back of the chest piece using liquid clay.



Cover the magnet with a thin layer of matching skin colored clay. Bake for 30 minutes together with the wings, head, and any remaining raw clay accessories.



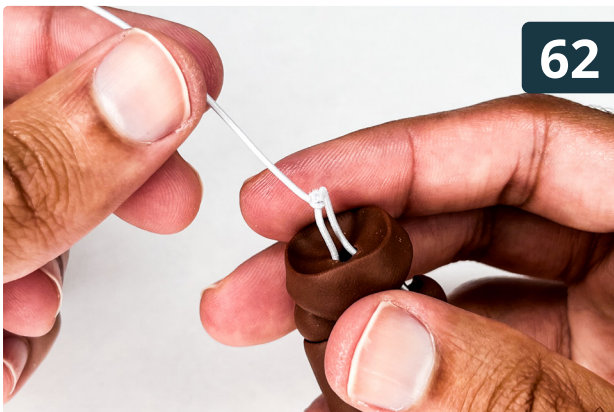
Before assembly, you may adjust body size by adding clay for more body fat. Bake again before assembly. Cut a 25 cm piece of elastic cord and thread it through the pelvis holes.



Thread the leg pieces in order: hip joints, thighs, knee joints, calves, ankle joints, and feet. Tie a knot on one end (foot) and trim excess cord. If the cord frays, trim the end with sharp scissors to make threading easier.



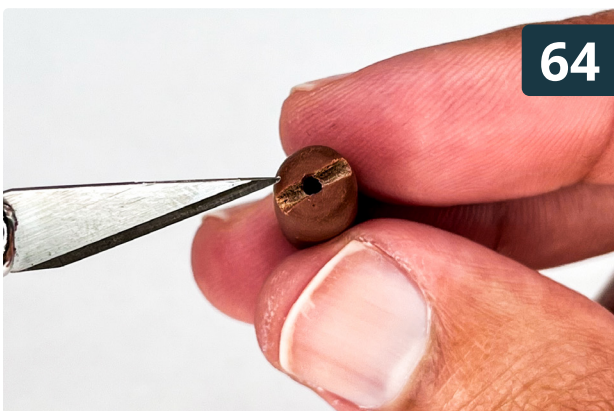
Cut another 25 cm piece of elastic cord and thread the arm pieces with the chest piece in the order shown. Tie a knot on one end (hand), pull tight, tie the second knot (opposite hand), and trim excess cord.



Use a needle to pull cord through the top of the pelvis. Attach a 15 cm cord to the middle of the leg cord with a knot. Pull the knot into the pelvis. Pull the second leg cord tight and tie a knot under the opposite foot.



Thread the cord through the abdomen and chest pieces. Use a needle to move the arm cord aside to allow the chest cord to pass.



Cut a slot in the bottom of the neck piece to allow more neck movement.

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Thread the cord through the neck piece, pull tight, make the final knot, and trim excess cord.



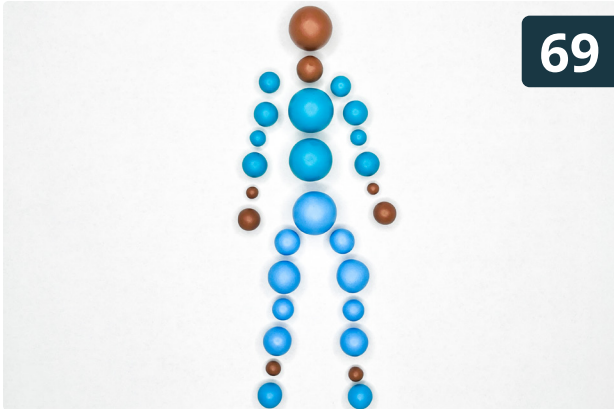
Attach the head to the neck. It should fit tightly but remain removable for cord replacement or modifications. Super glue may be used if desired.



Placing a third, thicker magnet between the wings and chest can help the wings stay attached more securely. This magnet is held only by magnetic force.



Feel free to create simple clothing items for the doll using clay.



69

As an alternative to a nude doll, replace certain clay balls to create built in clothing, such as a long sleeved shirt and pants. The brown clay balls represent exposed skin.



70

Shape all doll pieces as before and add additional clay details such as buttons, collars, or pockets.

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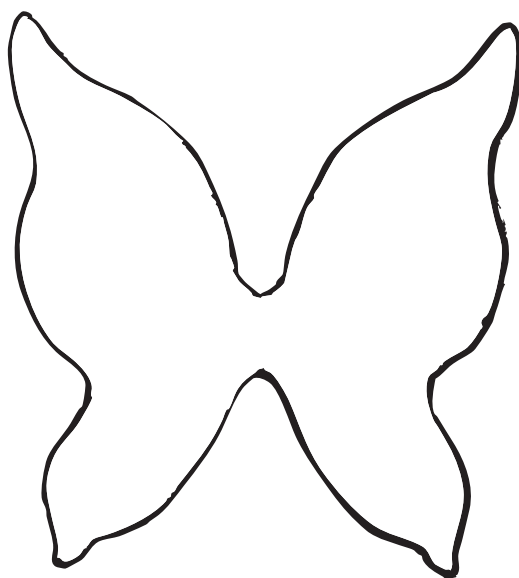
FINAL PROJECT



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TEMPLATE





EDUARDO FARILLO

Eduardo Farillo is an American polymer clay artist who has been working with the medium since childhood. His first major undertaking with Polymer Week was an ambitious, self-imposed challenge to create one project a day from our first Advent Calendar in 2025. Using an innovative approach, his artwork often features polymer clay that mimics ceramic glazed pots and vases. This time, however, he shares a project that highlights his passion for toymaking, inspired by his love for his son.

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