Building in 3d allows students to acquire the perception of space and form. In this lesson, students learn how to build a figurine using armature wire. Students learn the story of Shuri - a superhero from Marvel Comics and learn step by step how to build her from plasticine.

**OBJECTIVE**

This lesson has a video tutorial component: https://youtu.be/_tyCWumiFkk

Plasticine is a material used in the tutorial. It does not harden and can be reworked into different projects. It is easy to soften plasticine with a hair drier or by placing it in the sun for 15 min. The project can be made using a variety of materials including the homemade play dough.

**Playdough recipe**

**Ingredients:**
- 1 cup flour
- 2 tsp cream of tartar
- 1/2 cup salt
- 1 tbsp cooking oil or vegetable oil
- 1 cup water
- food coloring

**Instructions:**
1. In a large bowl, combine all of your dry ingredients (flour, salt, cream of tartar) and mix well.
2. Mix food coloring with your water first. Then add the vegetable oil and water with food coloring to a large pot. Mix together.
3. Add the dry ingredients to your pot and mix well.
4. Cook over low to medium heat until the dough starts to form and becomes dry.
5. Once it starts to form a ball together and looks fully cooked, take off the heat. Let the dough cool first before touching.
6. Once cool, knead the dough for 5 minutes to make the dough soft.

**Storage:** First wrap your playdough in saran wrap then store in an air-tight container.

**ADAPTATIONS**

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**MATERIALS**

brown plasticine 2oz; black plasticine 2 oz; orange plasticine 1 oz; yellow plasticine 0.5 oz; plastic knife; bbq skewer; ziploc bag; aluminum wire: 14 in long and 7 in long.

**VOCABULARY**

The **torso** is an anatomical term for the central part or core of many animal bodies (including humans) from which extend the neck, legs, and arms.

The **forearm** is the part of the body between the elbow and the wrist.

The **Arm** is the part of the body between the elbow and the shoulder.

**Sphere** — geometrical name of a ball.

**Coil** is made by rolling a piece of clay into a long roll.

**Armature** is a framework (a skeleton) on which the clay is formed into a figurine. It is used to hold all pieces together.

**Gauntlet** - an armored glove to protect the hand.

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**SHURI’S STORY**

Shuri is the Princess of Wakanda. Her brother T’Challa fights to get the kingdom of Wakanda back to its people and Shuri is assisting him with her intelligence and technological inventions.

Shuri's superpower is her intelligence. She is the smartest character ever to exist. She is only 16 years old but already has her own lab where she works on new designs with Vibranium. Vibranium is the metal that can be found only in Wakanda. It has extraordinary ability to absorb, store, and release large amounts of energy.

She invents sound absorbing sneakers. She made T’Challa his Black Panther suit that deploys from the necklace at a moment’s notice. She engineered a remote piloting system—a car that allows her to join her team no matter where in the world it is. Shuri created the Vibranium Gauntlets that are powerful weapons, as well as extremely resistant as they are made of Vibranium. They can fire single super sonic wave shots.

Shuri chooses protection over destruction. She is also a great healer and able to cure anyone. She can heal bullet wounds in just a few days.

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First, you need to make the armature. Fold the 14 inch aluminum wire in half. Take the 7 inch wire and lay it across the folded wire, close to the loop at the top. Then wrap it around.

Now you have something resembling a stick figure. To prevent the arms from sliding up and down, wrap the leg wire around the arm wire on both sides. Then twist leg wires a couple of times.

Take one third of the black clay and form it into a sphere - a clay ball. Flatten it and then wrap it around the wire in the center of the figure.

Shape the torso into an egg shape with the wider side on top.

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STEP 5
Using black clay, roll two coils for Shuri's legs. Make them as thick as your finger. Make sure those coils are shorter than the leg wire.

STEP 6
Flatten each coil and wrap it around each leg wire, leaving some wire sticking out at the bottom.

STEP 7
Smooth out all seams between the legs and the torso.

STEP 8
Form two small pieces of clay into jelly beans -- those are feet. String them onto leg wires and shape them into Shuri’s shoes. Make sure you have wire left over and sticking out from the bottom of each shoe. We need that wire to insert into a stand.

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STEP 9
Roll two coils out of the brown clay, long enough for arms. Wrap them around arm wires.

STEP 10
Smooth out seams between the torso and the arm. Make sure some wire is sticking out from each arm.

STEP 11
Now we need to make the Vibranium Gauntlets that look like panthers heads. Roll two small pieces of clay into two spheres for panthers' heads.

STEP 12
Form each sphere into a head of a panther. Pinch the sphere to form the muzzle of the panther. Pinch out ears. Using the wooden stick, draw eyes, nostrils, and the mouth.

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Wrap the ribbon around the forearm and smooth out the seam. Repeat on the other side.

To make the top part of the gauntlet, take a small piece of clay and pinch it into a ribbon that is about Shuri's forearm length and wide enough to wrap around.

Fix panther's head on each tip of the arm wire.

To decorate Shuri's arms with bracelets, roll out really thin coils and wrap around her arms.

Roll a little sphere out of the black clay and thread it through the loop on top of the armature. Spread it down to her shoulders but leave enough for her neck.

Roll a piece of brown clay into an egg shape to form the head. The head should measure up to a half of the torso.

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For hair, take a piece of black clay and pinch it into a thin pancake.

Wrap it around the top of the head. Pinch the excess clay into a bun.

Roll a bunch of really thin coils and wrap them around the bun so they resemble braids.

Pinch the nose out and draw the eyes and the mouth with the wooden stick.

Fix the head on top of the armature. Make sure to shape the chin and pinch out the ears.

Next is the Shuri’s skirt. Pinch a piece of yellow clay into a ribbon long enough to wrap around her waist. This takes a little patience - just keep pinching a little clay at a time to stretch it out.

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STEP 25
Cut the ribbon into two pieces lengthwise—one part should be thinner than the other. Use the thinner ribbon to wrap the figure around the waist from the front.

STEP 26
Use the wider ribbon to wrap the figure at the waist from the back.

STEP 27
Roll a little sphere from the orange clay, flatten it and attach it as a buckle. Draw details on Shuri's costume. You can invent your own. Add more braids to her head coming down her shoulders.

STEP 28
Roll the rest of the orange clay into a sphere and flatten it - this is the stand. Shape Shuri's legs as if she is walking and insert wires at the bottom of her feet into the stand.

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