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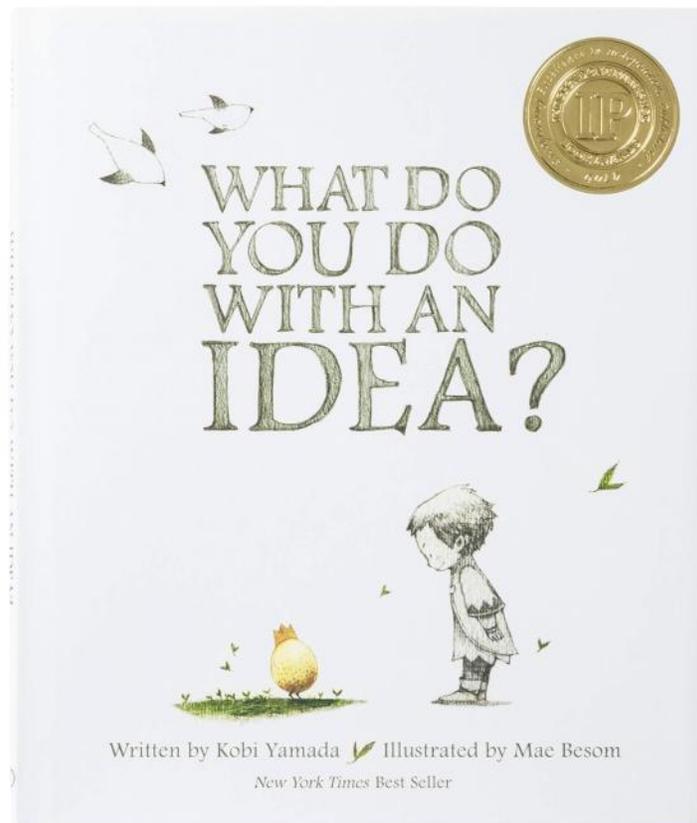
Thinking in 3D

Featured Story

Kobi Yamada's

What Do You Do With an Idea?

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Inspiration from WAM's Collection



Scenes from the Coronation of the Emperor Frederick III in Rome
1400s, Giovanni di ser Giovanni Guidi, Italian, tempera on panel, 1913.46
(<https://bit.ly/WAMEmperor>)

This is an early example of perspective in 2D (“flat”) artwork, in which the artist is beginning to understand perspective. However, the carefully detailed people and horses are too big for the buildings, and all the buildings are being viewed from the same angle.



A Miracle of Saint Silvester
mid-1400s, Pesellino, Italian, tempera on wood panel, 1916.12 (<https://bit.ly/WAMMiracle>)

This artwork is from the same time as the one above, but here the artist understands more about perspective. As an example, the two buildings are angled toward the center to make the scene more realistic, and the floor tiles get smaller the further away they are supposed to be. Yet, if any of the seated people stood up, they would bump their heads!

Interior of the Choir of Saint Bavo's Church at Haarlem
1660, Pieter Jansz. Saenredam, Dutch, oil on panel, 1951.29
(<https://bit.ly/WAMInterior>)



About 200 years later, this artist often painted architecture, and here the perspective is spot-on. The walls, floor, and ceiling slope to the back and the people are the correct size. It seems like you are really there!

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Drawing in 3D - Basics

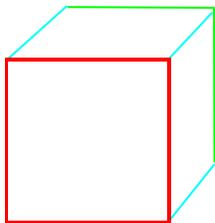
While 2D is “flat”, 3D “sticks out”. We can use perspective to “trick” the eyes into thinking they are seeing something 3D when it is only 2D.

Supplies

- Paper
- Pencil
- Eraser
- Ruler OR straight edge (optional)

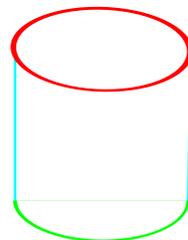


Create



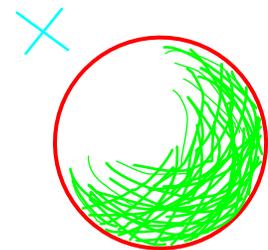
Square

1. Start by drawing a square (see red lines above).
2. Pick three corners and draw a short line from each, all in the same direction (see blue lines above).
3. Connect the open ends of the three blue lines using two lines (see green lines above).



Cylinder

1. Start by drawing an oval (see red line above).
2. Draw two lines straight down from the outside left and right of the cylinder (see blue lines above).
3. Make a curved line, like the bottom curve of the red oval, connecting the open ends of the blue lines (see green line above).



Sphere

- A sphere or ball is different and needs shading to look 3D.
1. Start by drawing a circle (see red line above).
 2. Pick a spot that the light is coming from (see blue “X” above). The side the “X” is closest to will be the lightest and brightest. The opposite side will be the darkest.
 3. Shade the circle using curved lines. Use more, darker lines further from the light (the “X”) and fewer, lighter closer to the light (see green lines above).

Create II - Once you have drawn all three shapes, try using shadows on the square and cylinder to make them pop more!

SQUARE - The sides are flat, so your shading lines should be straight.
CYLINDER - Use curved lines for curved sides and straight lines for flat sides.

Create III - After practicing shadows, gather some simple shapes and draw them with more detail: soup can, box, basketball, mug, etc.! An example of such a drawing in colored pencil is above.

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3D Clay Figures

While 2D is “flat”, 3D “sticks out”. Here we will make real 3D art - a sculpture!

Supplies

- Polymer Clay (like Fimo or Sculpey) OR Homemade Clay (Recipe on next page)
- Assorted tool-like items: pencil, unbent paperclip, dull butter knife or popsicle stick, etc.
- Scissors

3D Clay Basics

1. Coil or Snake

Take a piece of clay and roll it back and forth on the table using the palm of your hand (not your fingers).

2. Ball

Take a piece of clay and roll it in circles between your two hands in your palms. Start rolling one way, then the other way, then in a figure “8”. Then again. You can also roll the ball with one palm against a table top.

3. Slab

Take a piece of clay and either press it out with your palm against a table or roll it out using a roller or cylinder.

4. Connecting

Scratch where you want to connect the pieces. Slightly wet the two pieces where you want to connect them using water. Press the pieces together and smooth the places where they join or touch.

5. Texture

You can press your clay into hard objects with texture for patterns. Examples: patterned dishes or mugs, carved wood, plastic toys, and bubble wrap. Or you can press and remove peeled cardboard, an onion net, or string into the clay for texture and designs.



You may color or paint the clay for more detail once dried or baked according to the clay’s directions.

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Homemade “Polymer” Clay Recipe!

This clay is polymer-like in that it has plastic qualities of being bendable and a bit elastic before baking, and hard after. It is best to keep sculptures on the smaller side, or at least not too thick - about a half-inch thick at most. Not for use to make eating or drinking ware.

Ingredients

- 1 cup (8 oz) Corn Starch
- 1 cup (8 oz) White Glue
- 2 teaspoons vinegar or lemon juice
- Oil or hand lotion
- Container with lid (large yogurt or medium take-out containers work well)

Directions

1. Prepare a clean countertop space for clay kneading by skim-coating it with a layer of oil or hand lotion.
2. Add the cornstarch, glue, and vinegar (or lemon juice) to a saucepan that is on the range top with the heat on low. (It might need to be on very low if you have a gas range due to the constant heat).
3. Stir continuously as the mixture thickens - this takes about 10 minutes.
4. Once the mixture starts to stick to itself and pieces from the bottom of the pan begin to be a bit crusty/crispy, take the pan off the heat and turn the stove off.
5. Transfer the clay mixture to the prepared countertop. Coat your hands in lotion or oil.
6. It will be hot to touch, but start kneading as soon as you can touch the clay.
7. To knead, lift the furthest part of the clay lump up and squish it in to the center-top of the clay using the heel of your hand. Repeat.
8. Every few kneads, turn your lump of clay over and rotate it 90 degrees.
9. If your clay is sticky, you can sprinkle it with a teaspoon of cornstarch and knead it in. Repeat as needed. If your clay is too dry and cracking, add a couple drops of oil.
10. Once the clay has cooled and is elastic (a little stretchy) and smooth, you are good to start creating!
11. Store in an air-tight container.

BAKING

Bake finished sculptures on a baking sheet in a 225F oven for 20-30 minutes.