

Play(doh)ing with Villi

Purpose: The purpose of this activity is to further describe the mechanism behind Celiac's Disease. To do this, the kids will first learn how to make gluten-free art supplies and apply that to their understanding of celiac disease.

In this activity, kids will learn how to make play-doh, one of the iconic art supplies of the 50's! This activity will help show how even non-edibles, such as art supplies, could contain gluten and be dangerous for the campers' bodies.

They will be making gluten-free playdoh to be used to make a model of the villi in their intestines, a site that is affected for those with Celiac Disease. Students will be separated into two groups: those who will receive an outline of the villi "before eating bread" and those who will receive an outline of the villi "after eating bread" (see attached PDF's of villi). They will use their newly created playdoh to fill the outlines of these pictures.

Once this is complete, the students will compare the sizes of the villi and discuss the differences. In groups, they will talk about what gluten could do to the small intestine of their bodies and how that would prevent them from getting enough nutrition.

Materials Needed:

Here are the ingredients to make gluten-free playdoh:

Easiest Gluten-Free PlayDoh Recipe

Ingredients:

1 Cup White Rice Flour
1/2 Cup Cornstarch
1/2 Cup Salt
1 Tbsp Cream of Tartar
1-1/2 tsp vegetable oil
1 Cup Water, hot but not boiling
Food Coloring, as desired

Directions:

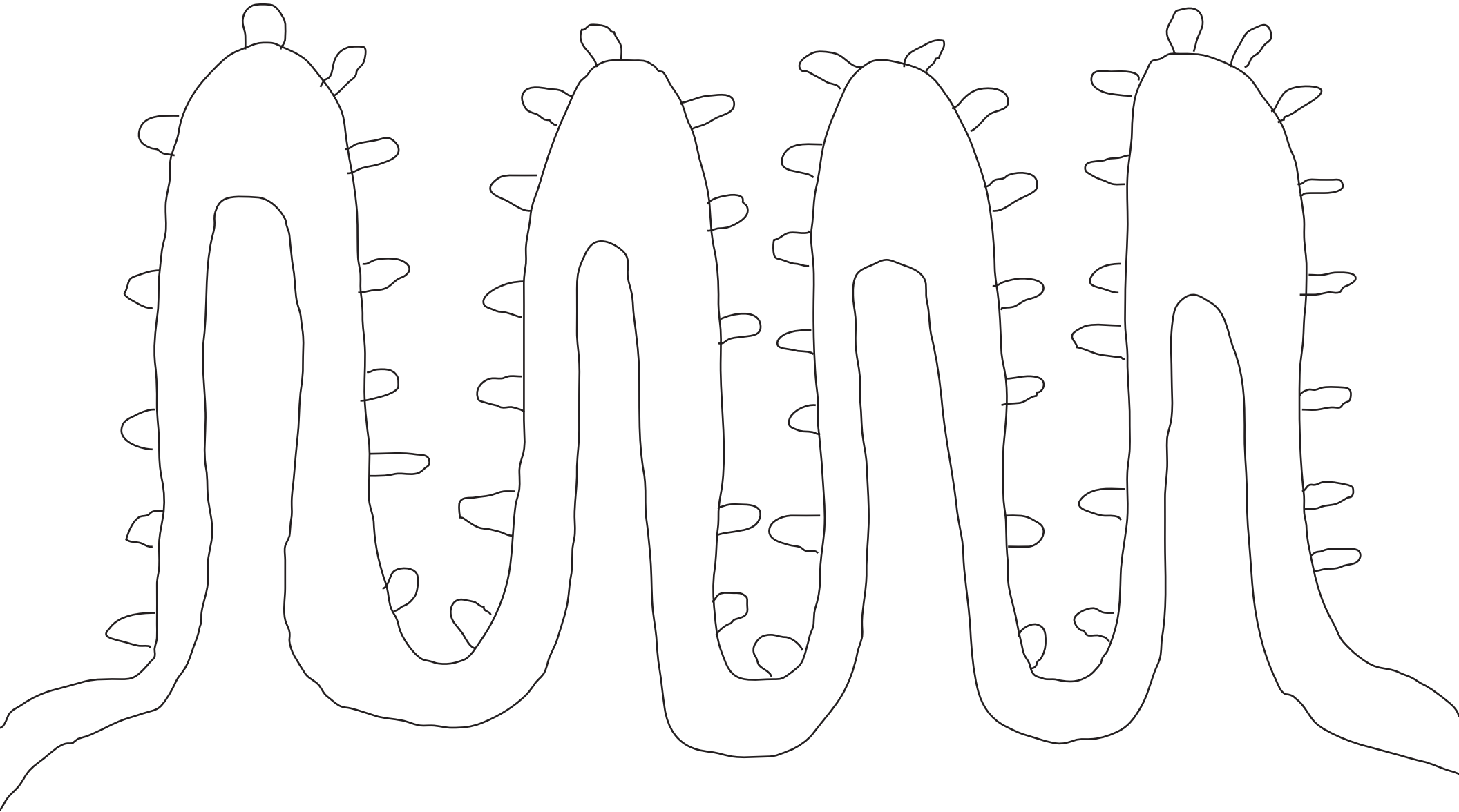
1. Mix all dry ingredients together in a medium pot.
2. Add the vegetable oil, then the water, and continue to mix until thoroughly combined.
3. Heat the pot on the stove over low heat for about 3 minutes. I like to stir frequently with a silicone spatula.
4. When the dough starts to pull away from the sides easily, turn out the dough onto parchment paper. Let it cool briefly until you can work it with your hands.
5. Knead food coloring into the dough until you get the color you desire.

Additional Notes:

- Don't overcook the dough. It shouldn't need more than five minutes.

- To add food coloring, I use the method I've used since I was a kid: Using your thumbs, make a well in the middle of the ball of dough and drop the food coloring into the well. Close up the well with the outside dough, keeping the food coloring in the middle of the ball. Then, carefully begin kneading it until the color is evenly distributed throughout the dough.
 - You don't have to use the parchment paper. The dough shouldn't be sticky. I use the parchment paper to simply keep residue and food coloring off my counter top. Wax paper or a plate would work just as well.
 - If needed, adjust the texture with small amounts of water (for dry, crumbly dough) or cornstarch (for sticky dough).
 - Makes about 2 cups of play dough, or about 2 baseball-size balls of dough.
 - Store in tightly sealed plastic bags or containers.
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Before Eating Bread



After Eating Bread

