Gingerdome

Prepared for Natural Spaces Domes by Marty Harding and Gary Noren with gratitude to Hila Science Camp (hilaroad.com/camp/projects.html)

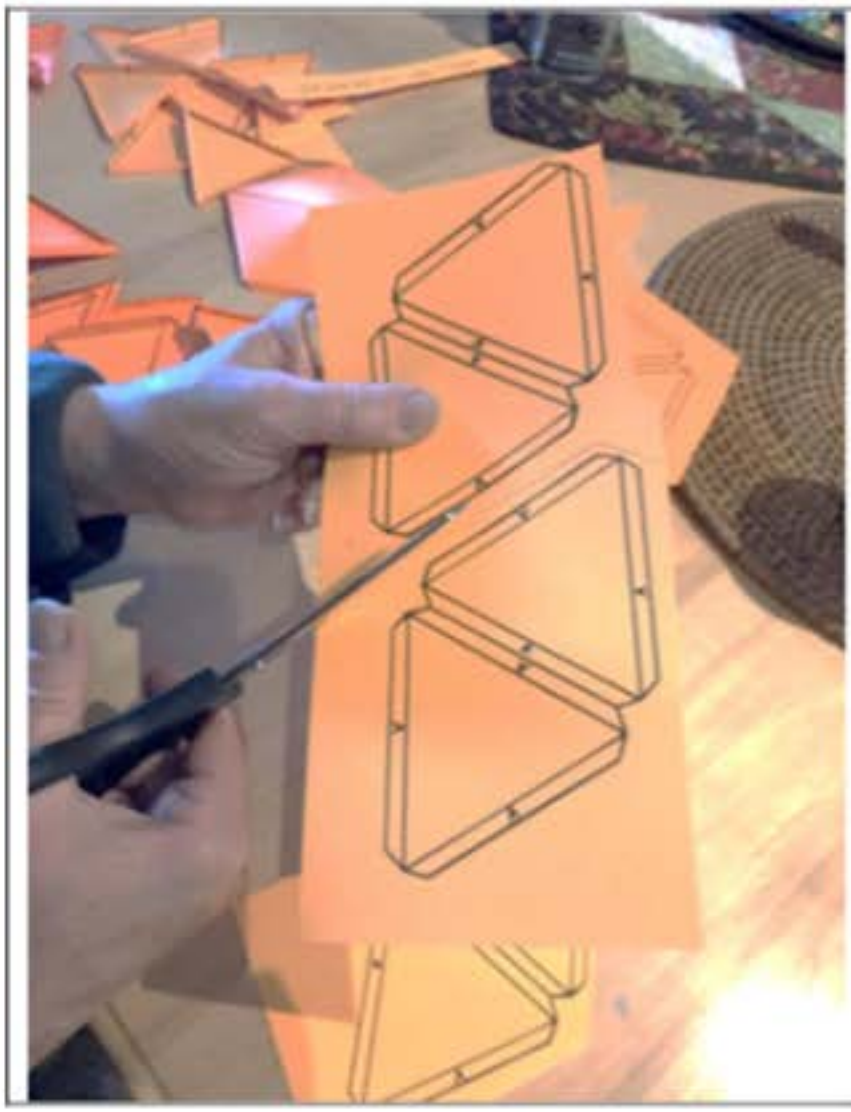
These instructions are for creating a geodesic dome with a 10.5 inch diameter using both equilateral and isosceles triangles. The dimensions are based on the size of a 3" pretzel, which was originally going to be used as a base; a delightful concept which proved impractical. So, if you wanted to construct this dome out of pretzels, you could! Please send pictures!

Step 1: Copy 4 pages of the isosceles triangles onto cardstock paper. These triangles are labeled ABB, because the A side is longer than the B sides. This is a critical piece of information, because throughout these plans, all of the A sides will be joined together, and all of the B sides will also be joined.

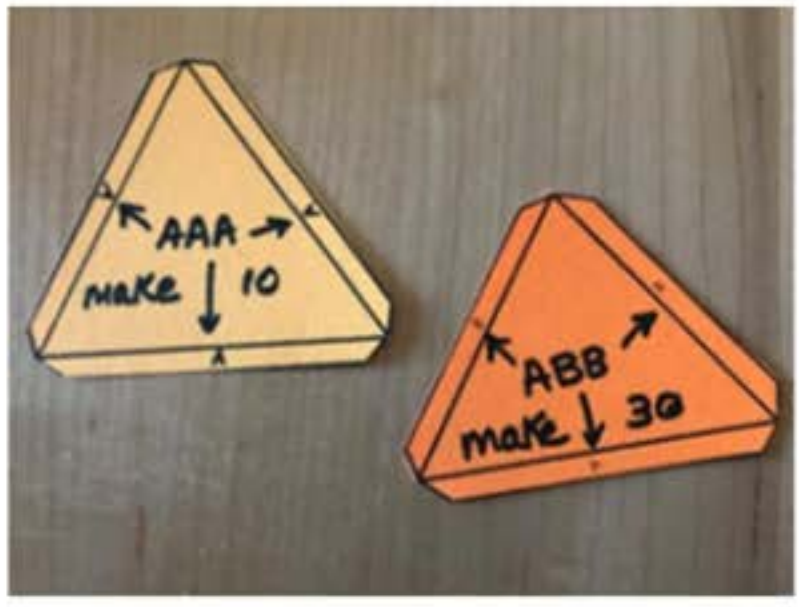
You'll have 2 extra triangles, which can be used for cutting out the cookie dough later.

Step 2: Copy 2 pages of the isosceles triangles onto cardstock paper. These triangles are labeled AAA, because the A sides are all the same length (3").

You'll have 6 extra triangles, which can be used for cutting out the cookie dough later.



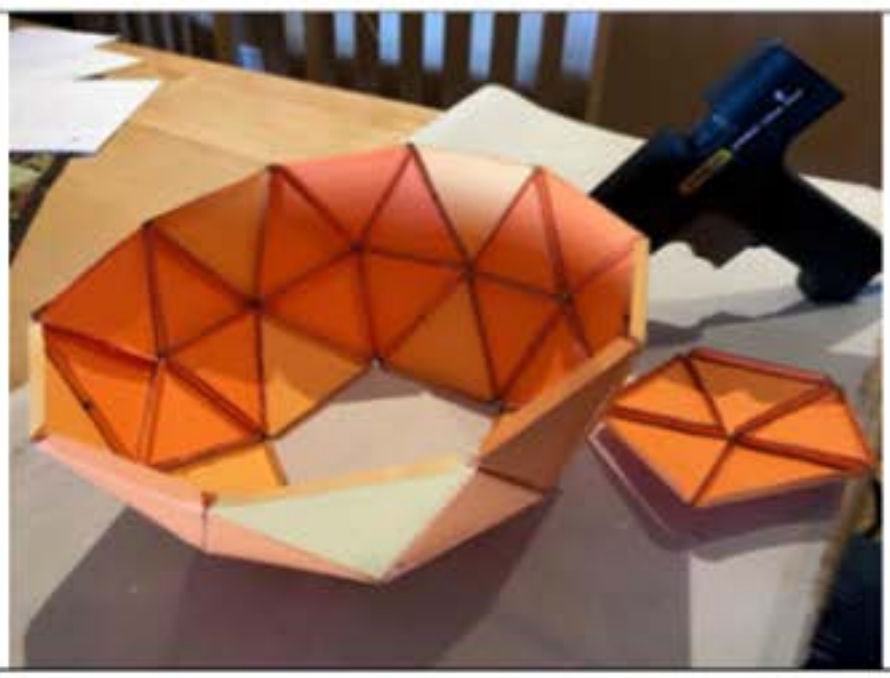
Step 3: Cut out 30 of the ABB triangles and 10 of the AAA triangles.



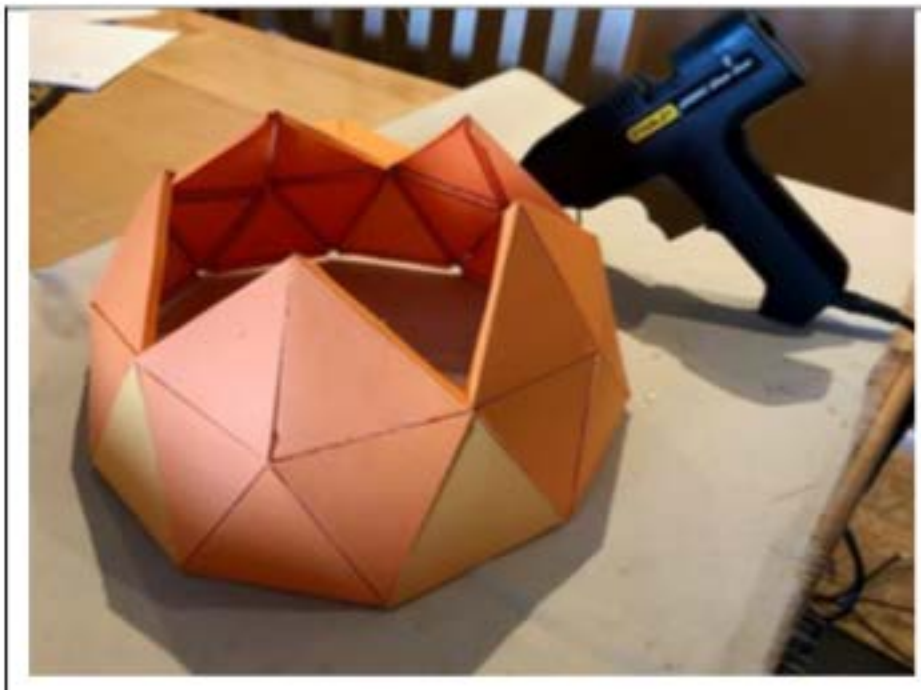
Step 4: Fold on the the tab lines of all triangles.

Step 5: Join 5 of the ABB triangles to create a pentagon by gluing the "B" edges together using the tabs. Make five more pentagons for a total of six.

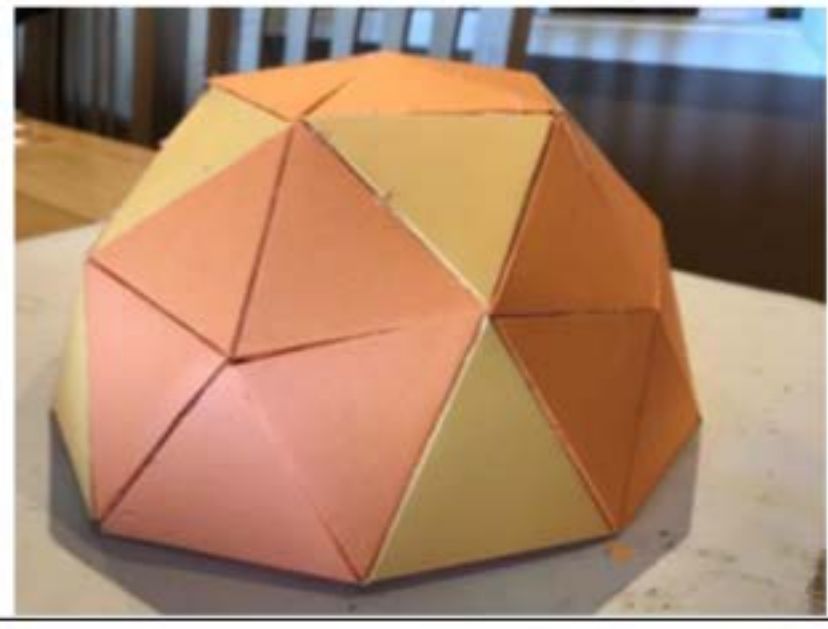
Note: Make sure the "A sides of the triangles form the outside of the pentagon.

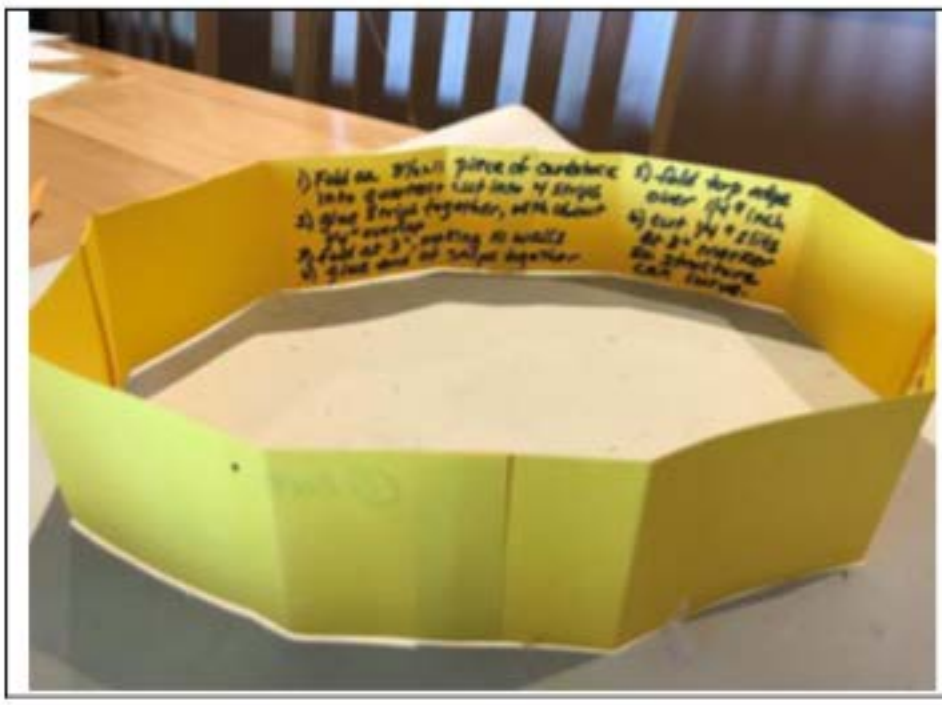


Step 6: Join 5 of the pentagons together, using the equilateral (AAA) triangles. The A (3") tabs of the ABB triangles will be glued to the tabs of the AAA triangles. This forms the lower level of the dome.



Step 7: Join the pentagons together with the remaining 5 equilateral triangles, and finally, glue the top pentagon on your dome.



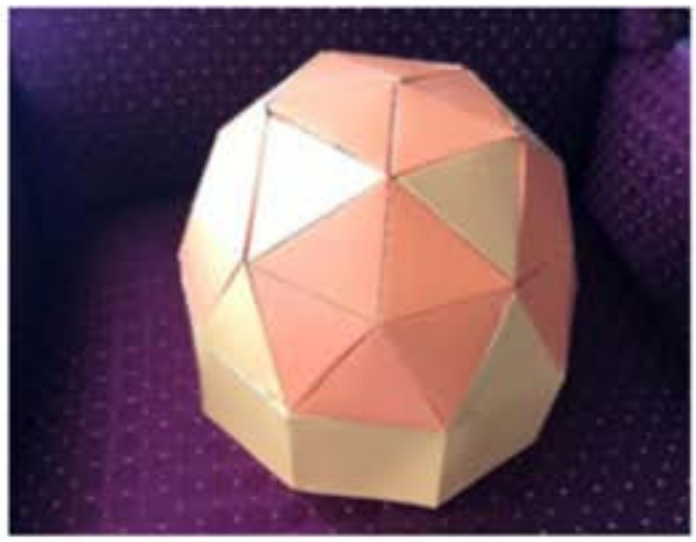


Step 8: Create a base for your dome:

1) Fold an 8.5 x 11 piece of cardstock into quarters; and cut into 4 strips.
2) Glue the strips together with about ¼" overlap. Fold at 3", making 10 walls. Glue the ends of the strips together.

Step 9: Join the base to the dome.

1) Cut ¼" slits at the 3" fold lines so the structure can curve. These are your glue tabs.
2) Glue the ends of the strip together to form a 10-sided circle.
3) Join the glue tabs from the base to the bottom of your dome.



Use any leftover dough (and your creativity) to make a cupola, an entryway, trees to decorate the yard, a star for the top of the house…

Step 10: Make a batch of gingerbread dough (see attached recipe), and bake 30 ABB and 10 AAA triangles, using the leftover patterns from Step 1&2. (Note: Cut off the tabs first.) Bake a test cookie so you can see if there is a size distortion due to the cookie rising. Adjust the size of your pattern so there is just enough cookie to join the parts together with your frosting "glue.") Let your cookies dry thoroughly.

Step 11: Make Royal Frosting and assemble your gingerdome! (For Royal Frosting: Use two pounds of powdered sugar; 6 egg whites; 1 tsp of cream of tartar. Beat in a mixer for 6 or 7 minutes until it makes stiff peaks.) Keep your frosting covered, as it dries out quickly. Once assembled, let your dome dry thoroughly before decorating.

Note: We had planned to make the gingerdome self-supporting, but at the last moment decided to build it around the cardstock dome. This made assembly infinitely easier, as we had color-coded the cardstock pieces. Just as with the cardstock dome, make sure your longer sides (the "A" sides) of the ABB dome are on the outside of the pentagons.

Step 12: The best part: decorate your dome! No instructions; just go to the store, select whatever candies spark your imagination, or use frosting to decorate.