



BUILDING A HOMEMADE GEODESIC DOME

Explore geometry, structures, and engineering by building your own geodesic dome using toothpicks and marshmallows!

Name: _____ Date: _____

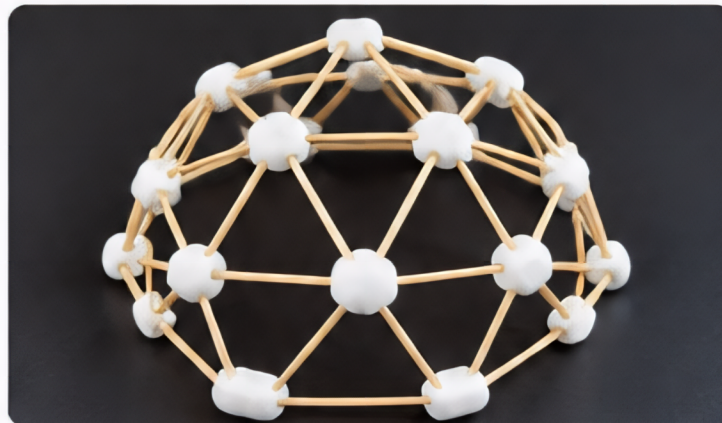
? QUESTION

Can I build a strong, stable dome structure using toothpicks and marshmallows?

💡 HYPOTHESIS

I think _____

because _____



📋 MATERIALS

- Toothpicks (at least 150)
- Mini marshmallows (at least 50)
- Flat workspace
- (Optional) Ruler or measuring tape
- (Optional) Small objects or books to test strength

🧪 PROCEDURE

1. Build a basic triangle using 3 toothpicks and 3 marshmallows.
2. Build 5 more triangles and attach them to the first triangle to form a hexagon (6 triangles total).
3. Add additional triangles to the edges of the hexagon.
4. Continue adding rows of triangles, working your way up and closing the dome.
5. Gently press the structure to help it settle into a dome shape.
6. Test the strength of your dome by placing light objects on top or gently pushing the sides.
7. Record your observations and results below.

🔍 OBSERVATIONS

Fill in the table as you build and test your dome.

Stage	What I Did	Number of Toothpicks Used	Number of Marshmallows Used	Observations (What happened?)
Start (First 6 triangles)				
Half Dome				
Finished Dome				
Strength Test (What did I place on it?)				

★ CONCLUSION

1. Was your hypothesis correct? Why or why not? _____
2. What makes a geodesic dome strong and stable? _____
3. Where are geodesic domes used in real life? (Examples: buildings, greenhouses, tents, etc.) _____