

GEOMETRY SCULPTURES

This project lets students explore the architectural possibilities of the triangle, from pyramids to geodesic domes.

WHAT YOU NEED

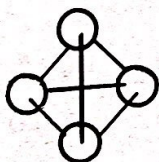
- ◆ toothpicks (multi-colored toothpicks create a wonderful effect)
- ◆ mini-marshmallows or gumdrops

WHAT TO DO

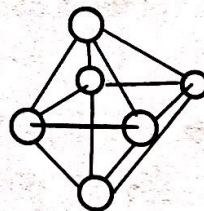
Student Instructions / Teacher Notes

- I. Poke the toothpicks into the gumdrops or marshmallows. Choose the number of toothpicks you want to have in each intersection throughout your project—3, 4, or 5. Then start connecting your toothpicks and intersections.**

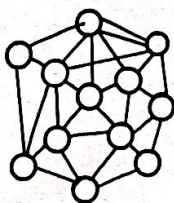
The number of toothpicks in each intersection will determine the outcome of each sculpture—the more toothpicks, the larger and rounder the shape. Encourage students to try a variety of sculptures, or to work together to build the larger ones.



3 toothpicks
in each intersection



4 toothpicks
in each intersection



5 toothpicks
in each intersection.



- 2. Keep building your project until you can't add any more toothpicks. Check your sculpture to make sure each intersection has the same number of toothpicks.**

Ask students if they can identify the repeating shape that adds support to their structure (triangle).

- 3. Let the gumdrops or marshmallows harden overnight. Then paint your sculptures if you like.**

TIPS FOR A SUCCESSFUL PROJECT

- ◆ Here's a way to check that students have made their sculpture correctly:

A sculpture with 3 toothpicks in each intersection will have a total of 6 toothpicks and 4 gumdrops.

A sculpture with 6 toothpicks in each intersection will have a total of 12 toothpicks and 6 gumdrops.

A sculpture with 5 toothpicks in each intersection will have a total of 30 toothpicks and 12 gumdrops.

WANT TO KEEP GOING?

- ◆ Look up photos of geodesic domes in an encyclopedia. Discuss the domes together. Ask: How many supports are in each intersection of these domes?
- ◆ Try a larger version of this activity by replacing the toothpicks with drinking straws, and the gumdrops or mini-marshmallows with regular-sized marshmallows.

