

Take the Candy-Toothpick Building Challenge!

Engineering is the creative use of science and math to design or make things to solve a problem. Engineers, like the ones we have at ADOT, design, build and test things.

Do you want to give this fun build-and-test activity a try — like an engineer? To take the candy-toothpick building challenge, start with the following items.

Supplies Needed

- Gummy bears or gum drops (or a similar candy from your trick-or-treat bucket!)
- At least 36 toothpicks
- One hardcover book
- Optional: paper plate as a working surface

(Warning: Be careful not to poke yourself with the toothpicks)

Steps

1. Start by building a cube shape by connecting the toothpicks to the gummy bears. Build a second cube shape just like it.
2. Once your cubes are made, test your structure by placing the book on top. Did it collapse? It seems like a cube is not a strong enough structure to hold the book.
3. Try building another shape — a pyramid.
4. Build three pyramids out of the toothpicks and gummy bears.
5. Try spreading them out and placing the book on top.
6. Continue to adjust your structures as needed until they can support the book.

Did your revised design work?

How It Works

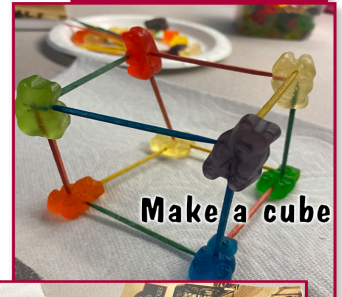
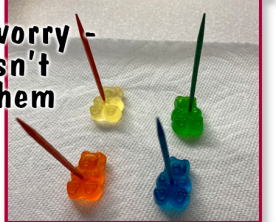
Some shapes have more strength than others. Triangles give more support than squares when building structures. Triangles are used a lot in the construction of things like bridges. Just like an engineer, you can test many different solutions and each time you redesign it, the solution can get better.

Source: www.generationgenius.com



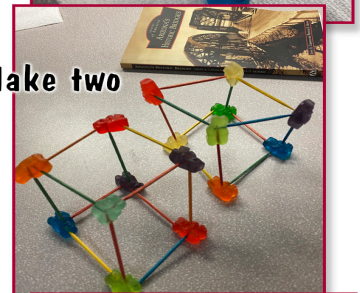
Yummy!

Don't worry - it doesn't hurt them

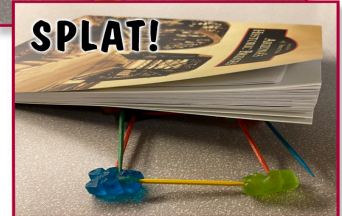


Make a cube

Make two

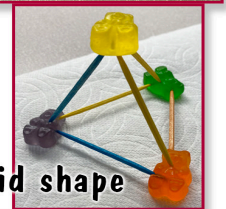


SPLAT!



Pyramid shape

Make two



Success!

