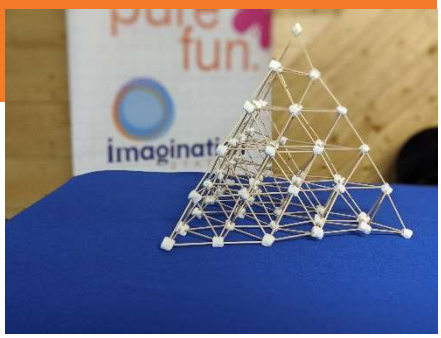
Stay at Home Science



Candy Towers

What You Need
Toothpicks
Gumdrops OR Mini Marshmallows

What You Do
1. Have your child create a square using 4 toothpicks (for the sides) and 4 gumdrops (for the corners).
2. Have your child create a triangle using 3 toothpicks (for the sides) and 3 gumdrops (for the corners).
3. Have your child stand up each shape and gently press on one side. *What happened? Which shape is stronger?*
4. Add more toothpicks and gumdrops to create a three-dimensional tower or other structure.

Questions to ask

- How tall can you make your tower and still have it freestanding?
- What other shapes can you make with your toothpicks and gumdrops?
- Do you think scientists work on a construction site? What would they do?

What's The Science?
Structures made with triangles are often stronger than those made with squares because of their geometry. The vertices (corners) of a triangle cannot change angles without also changing the length of one of the edges (sides). The vertices of a square can change without changing the lengths of the edges—it just changes the square into a rhombus. When designing new structures, architects and engineers often use triangles in their designs. Even when they use squares, many times they put a diagonal brace in it, turning it in to two triangles!

Try This
Use science/math vocabulary: Use related science and math words such as engineer, architect, vertex/vertices (corners), edges (sides), two-dimensional (2-D; having only length and height) and three-dimensional (3-D; having length, height, and depth) as you talk and play together. Children learn new vocabulary words when they hear grown-ups use them in context.

Extend the activity:

1. Have children count and graph characteristics of their tower. For example, the number of different colors of gum drops, the number of different types of shapes, or the number of each supply used.
2. Take a drive around town looking for places where you can find triangles in your local architecture.

Keep In Mind
- Children are natural scientists; let them lead the way in their experimentation! Encourage them to ask questions and make suggestions only when they are stuck/discouraged.
- The order suggested is not the only right or perfect way. Make adjustments based on the age, ability, and interests of the children.

Additional Resources
The Greedy Triangle by Marilyn Burns
The Three Little Pigs (any version)
Iggy Peck, Architect by Andrea Beaty
How a House is Built by Gail Gibbons
Why are Triangles Stronger than Squares? video by Science Channel:
https://www.youtube.com/watch?v=AoS0UvVfxRQ

imagination STATION
pure science. pure fun.