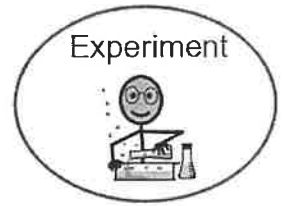




experiment



NEED



Gumdrop Tower Challenge



timer



gumdrops



toothpicks

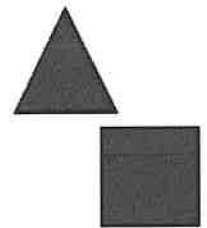


yardstick or
tape measure



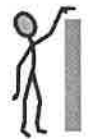
What We Know:

- A triangle made with gumdrops and toothpicks is a strong shape.
- A square made with gumdrops and toothpicks is not a strong shape.
- People build with different shapes.



Step 1: Ask a Question

- How tall can you build a gumdrop tower?



Step 2: Make a Guess / Hypothesis

How tall can you build a gumdrop tower?

I think...



Less than
5 inches tall

< 5

6 - 10
inches tall

6 - 10

11 - 15
inches tall

11 - 15

16 inches
or taller

> 16



Step 3: Do an Experiment

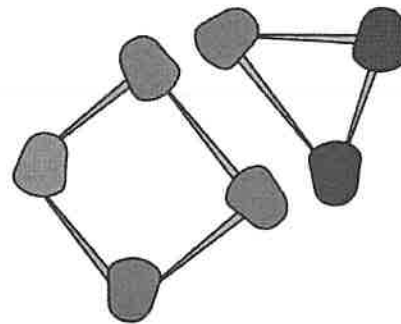
1. Set the timer for 10 minutes.
Start the timer.



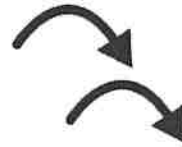
10



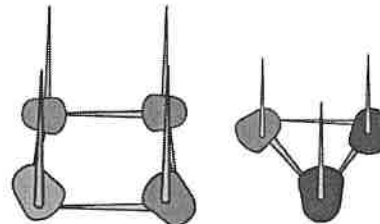
2. Put gumdrops on toothpicks to build a triangle or square.



3. Repeat step 2.



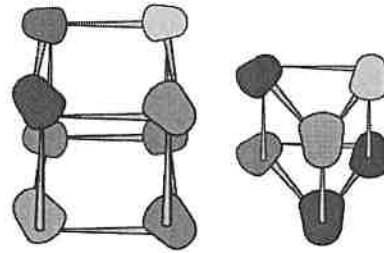
4. Lay one gumdrop shape flat.
Put toothpicks into the tops of
each gumdrop on the shape.



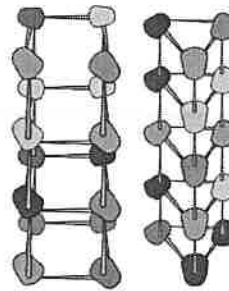


Step 3: Do an Experiment

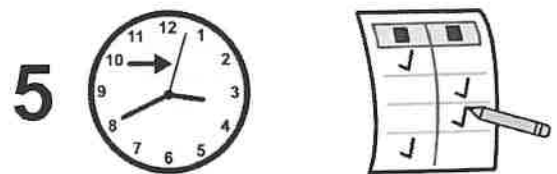
5. Connect the second gumdrop shape to the first gumdrop shape.



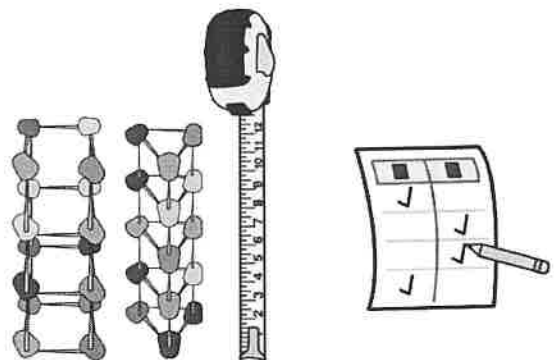
6. Continue building the gumdrop tower with more gumdrops and toothpicks until the timer stops.



7. Let the tower stand for 5 seconds. Record observations on the chart.


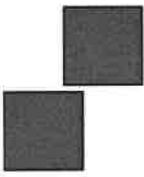
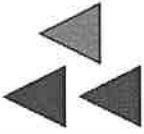
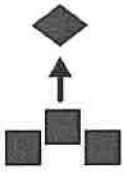



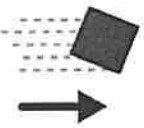



8. Measure the height of the gumdrop tower. Record observations on the chart.





Step 4: Organize Data

 <p>I built my tower with:</p>	<p>squares </p> <p>triangles </p> <p>other </p>
 <p>After 5 seconds my tower is...</p>	<p>standing </p> <p>twisting </p> <p>falling </p>
 <p>How tall is my tower?</p>	<p>_____ inches</p>



Step 5: Find the Conclusion

What shape did you use to build?



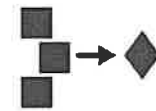
squares



triangles



other



Was your tower standing after 5 seconds?



yes



no



How tall was your gumdrop tower?



less than
5 inches tall

< 5

6-10
inches tall

6 - 10

11-15
inches tall

11 - 15

16 inches
or taller

< 16

Was your guess correct?



yes



no





Step 5: Find the Conclusion

Explanation:

- Structures like buildings and bridges are made of parts. These parts push and pull on each other. The parts are different shapes. Some shapes are stronger than others. Squares are not strong shapes. When structures made of squares are pushed, they may fall easily. Triangles are stronger shapes and are better for building. Structures built with triangle shapes don't fall as easily when they are pushed. Builders use triangle shapes to make structures like bridges and skyscrapers. It is important that these structures are strong! Gumdrop towers built with triangles may be stronger than gumdrop towers built with squares.



Extension:

- To extend this lesson, try using different materials, such as spaghetti and marshmallows or straws and tape to continue building different types of structures. What can you build?

