Elementary Engineering Activity Bag 2

Tallest Towers: Student Activity Guide

Think of a really tall building. How do you think they made it strong enough to stand so tall without falling down? Today, you will get the chance to design and build towers.

Materials From The Bag

- Modeling Clay (half of a stick for this activity, half of a stick for the boat activity)
- Small Straws (30 pieces)
- Measuring Tape
- Plastic Bag
- Glass Gem

Preparation:

1. Cut the stick of modeling clay in half. Place one half in the plastic bag to be used for the boat activity.
2. Cut the half stick of modeling clay into **two** equal pieces. You will use one piece for Part 1 and one piece for Part 2.

Part 1: 10 Straws

Your first challenge is to build the tallest standing tower using 10 straws and a piece of clay.

1. Draw what you would like your tower to look like.
2. Count out 10 straws. Be sure to use small straws.
3. Build your tower using only straws and clay.
4. Don't worry if your tower does not stand very tall at first. Change your design and try again.
5. Once your tower is standing, use the measuring tape to measure the height of your tower. *How tall is your tower?*
6. Adjust your design and try to make the tower even taller.
7. Draw your final design. *What is different from your first design? How tall is your tallest tower?*

Part 2: 20 Straws

For the next challenge build the tallest standing tower using up to 20 straws and a piece of clay.

1. Draw what you would like your tower to look like. *How does using more straws change your design?*
2. Count 20 new straws.
3. Build your tower using only straws and clay.

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4. Once your tower is standing, use the measuring tape to measure the height of your tower. *How tall is your tower?*
5. Keep changing your design and measuring the height to make taller towers. *What makes this hard? How tall is your tallest tower?*
6. Draw your final design. *What is different from your first design?*

Part 3: How High Can a Tower Support a Gem?

Your final challenge is to build the tallest tower that can hold a glass gem at the top. You can use up to 20 straws and all of your clay.

1. Draw what you would like your tower to look like. *How did your design change from the previous challenges?*
2. Build your tower.
3. It is ok if your tower does not hold the gem at first. Change your design and try again. *What makes this challenge hard?*
4. Once your tower can hold the gem, use the measuring tape and measure the height of your tower. *How tall is your tower?*
5. Adjust your design, and try to make the tower even taller! *What parts of your design helped to hold the gem?*

When you are done with your clay, place it in the plastic bag for the other activities. Save your gem and your measuring tape for the other activities.

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