

**Tower Building**

**K-2**

# **Estimated Time:**

20-30 minutes

# **Materials:**

* Craft sticks – 50 per group
* Paper cups (5 oz Dixie Cups)—50 per group
* Measuring Device (tape measure, yard stick)

# **Instructions:**

1. The task is to build the tallest tower possible. Discuss the need for a sturdy base.
2. Begin building for 5 minutes with your team
3. After the 5 minutes is up, talk to your team about what went well and why? What could be changed?
4. Begin building again for 5 minutes
5. When the 5 minutes is up, measure the height of the tower.
6. Repeat process as needed.

# **The Science:**

As long as the center of gravity of any structure is over its base (whatever is holding it up), it won’t fall down. This means you want to start with a wide base so there is lots of wiggle room for the center of gravity. You also want to keep most of the weight of the structure – and its center of gravity – low so that it is easier to keep over the base. This is why the tallest towers have a heavy wide base and a light narrow top.

Flat paper, cards and pipe cleaners are not very strong but if you fold and roll them into tight shapes they can hold a lot more weight. But keep in mind that some shapes are stronger than others. Squares and rectangles are able to slide and can quickly collapse, but triangles spread out the forces more evenly and can be combined to make stronger structures.