



Tower Challenge



Adults: You are the **navigators** of today's exploration, and you will be asking questions of your student to observe, predict, and explain their thinking.

Kids: You will be the **investigators**. Your job is to observe, make predictions, and explain your thinking!

Challenge: Construct the tallest free-standing tower that can hold weight and withstand winds!

Navigator (Adult) ask your **Investigator (Kid):**

- How do you plan to use the materials (noodles and tape) to build a tall tower? Do you have other ideas?
- *Our tower will have to hold weight (a puzzle cube) and withstand winds (from a fan). How will we build our tower, so it holds the cube? What do we need to do so our tower does not blow over in the wind?*

What's the SCIENCE?

- Modern "skyscrapers" are built with steel skeletons made of beams and columns that can support tremendous amounts of weight.
- Engineers use these beams and columns to counteract the downward force of **gravity**.
- Gravity** is the force pulling objects toward the center of the Earth.

Tower Design: Brainstorm a tower design; then draw it before you build it. Remember, it must be free-standing, hold the weight of a puzzle cube, and withstand the wind from a fan!

After your design is complete, **build** your tower. Then **test** it to find out if it can hold the weight and withstand the wind. **After your first test**, you can **redesign** your tower if needed.

Talking Tip

Encourage your **Investigator** to talk out loud and describe what they are doing and why.

This will often prompt children to say more about their ideas, so that you get to understand them better. When they do more talking, they do more learning.

Navigator ask your **Investigator:**

After testing...

- How did your tower's height compare with others? What did you observe while testing your tower? Can we make it better?
- What are the different ways we can build the tower, so it is both strong and tall?
- How does gravity affect your tower? The cube? Your tower with the cube on top?



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