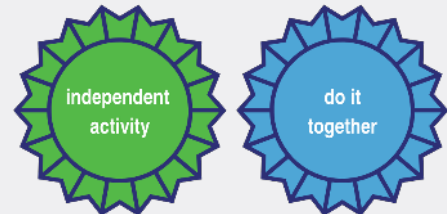




Project Exploration creates transformative learning opportunities for youth underrepresented in the sciences –particularly students of color and girls – by equipping them with the skills, practices, and mindset needed for a lifelong pursuit of learning. STEM@Home makes activities around science, technology, engineering, and math accessible and fun to do at home. This STEMbook activity, resources, and more are available at www.projectexploration.org/stemathome.

In this activity, you will:

Build a structure that can withstand an earthquake!



Supplies Required:

- 1-2 Instant Jello Gelatin (your choice of flavor)
- Pan (for Jello)
- 1-2 bags of marshmallows (large or mini)
- Box of toothpicks
- Cardboard box torn into pieces (cut according to your design structure)
- Peanut butter/sunflower butter
- Graham crackers
- Towel and spoon

Video

Learn about earthquakes with Dr. Binocs: <https://tinyurl.com/hg4fcrz>

Overview

What is an Earthquake? Earthquakes are the shaking, rolling, or sudden shocks of the Earth's surface. They are the Earth's natural means of releasing stress. Earthquakes, also known as temblors, occur along areas of weakness in the subterranean rocks that make up the Earth's crust. Ordinarily, the rock layers on either side of these zones, or faults, are held in place by friction. But when the friction is overcome by mechanical stresses, the rocks slip and unleash vast amounts of energy that we experience as an earthquake. The most destructive earthquakes occur at the edges of tectonic plates, which are giant rocky slabs that float on layers of molten rock deep within the Earth. About a dozen tectonic plates make up the world's land surfaces and ocean floors. In today's lesson you will build a structure that can withstand an earthquake. You will test your structure (marshmallows, toothpicks/cardboard or peanut butter/sunflower butter and graham crackers) by placing it onto a wobbly surface (Jello gelatine) shaking it to see if it will fall or stand strong!



Instructions

1. Have an adult assist you in making a pan of Jello in the freezer. Allow Jello to become firm but not hard, jiggly!
2. Meanwhile, build your structure(s) using one of the methods or both (marshmallow with toothpicks and cardboard OR graham crackers with peanut butter/sunflower butter)
3. If the Jello is firm but jiggly, have an adult to remove from freezer.
4. Be sure to have a phone or video recorder in place ready to record!
5. Place your structure on top of the Jello.
6. Begin shaking the pan--start slow and end vigorously!
7. Wow! Hopefully your structure was strong!

Additional Resources

Think About It! What do you think engineers need to think about when building near fault lines? What was the most successful part of your design? What would you change about it to make it stronger?

2. Read more about earthquakes: <https://tinyurl.com/yd6jb8rj>
3. Explore earthquakes in SpacePlace: <https://tinyurl.com/vz6jpb6l>
4. Do more earthquake activities: <https://tinyurl.com/y7hjdgt>

Share It Out

Share on social media: Can you challenge a friend or family to see who structure will stand strong? Record and or take pictures and be sure to use the hashtags:

#EarthquakeEngineering
#ProjectExploration
#StemAtHome

Share via PE's website: Students who complete STEM@home activities and share what they learned with the PE team via our website will earn points which can be traded in for cash prizes at the Explore Store. Your project number is 224. Learn more at www.projectexploration.org/explore-store

Join PE's character contest!

Design a STEM character who will lead kids through activities and be featured on our website and in our STEMbooks. Cash prizes will be awarded to the top 3 finalists.

Learn more at:
www.projectexploration.org/character-contest.



Call or text us for help: 312-772-6634



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