

OUR MISSION

INL's K-12 STEM Program works to inspire Idaho's future STEM workforce, impact students, teachers and families by integrating best practices in STEM education, and empower employees to become STEM mentors to transform K-12 STEM into a driver for innovation.

STEM IN ACTION



CAN YOU SHAKE IT?

The surface of the earth, called the "crust," is not one solid piece. It's more like a puzzle. Each puzzle piece is called a "plate." The plates constantly move. Fortunately for us, they don't move fast, and we don't even feel the movement. Earthquakes usually occur on the edges of large sections of the Earth's crust called tectonic plates. These plates slowly move over a long period of time. The edges of the plates are called fault lines. Sometimes the fault lines, can get stuck, but the plates keep moving. Pressure slowly starts to build up where the edges are stuck and, once the pressure gets strong enough, the plates will suddenly move causing an earthquake. In this activity you will build a structure that can withstand shaking.

TRY THIS AT HOME

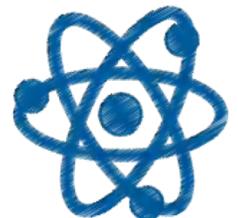
- Take it to the next level and build an even taller building! How tall can you go?
- Try different supplies to build the structure, which items work the best.
- Build different "levels", use cardboard bases to separate the levels. Does this help make the building more stable?

GUIDING QUESTIONS

- How can you use supplies given to build a sturdy building that won't collapse when shaken?
- What did testing help you understand about your building?
- How safe would you feel if you were inside it during an earthquake?
- What could you do to make your building even better at withstanding an earthquake?

MATERIALS

- wooden or plastic coffee stirrers
- Toothpicks
- craft sticks
- hot glue
- marshmallows
- modeling clay or playdoh
- shake table
- ruler (to measure height)



PROCEDURES

1. Sketch a design that could withstand an earthquake
2. Build design with provided supplies
3. Test design on Shake Table.
4. Redesign if needed



CAREERS IN STEM

BUILDING STEM SKILLS

Earthquake engineering is a branch of engineering that designs and analyzes structures to ensure that they are resistant to earthquakes. The Seismic Research Group at INL performs earthquake engineering research. One area of study involves improving mathematical models that predict earthquake forces. They are also modernizing methods that are used to calculate earthquake risk. Engineers at INL also perform various earthquake related experiments.

STUDENTS + PARENTS + EDUCATORS

For information on grants, training and student opportunities; curriculum ideas and resources, please visit us at: stem.inl.gov.

RESOURCES

<https://www.ducksters.com/science/earthquakes>
<https://public.inl.gov/STEMHelpWanted/Brochure/index.aspx?page=22>
<https://pbskids.org/designsquad/build/seismic-shake-up/>

