



## *SfS Away from the Classroom!*

### *Engineering 7: Earthquake Resistant Buildings (Recommended for Grades 3-8)*

**Please use the following resources to learn about the engineering process and earthquakes!**

**Watch this Video:** <https://www.youtube.com/watch?v=7hoSqazNmfY>

**Answer these questions:**

- How does a shaking table work?
- What information can engineers learn from testing structures with a shake table?
- What design solution have engineers learned from using shake table tests?
- How have engineers improved earthquake safety at San Francisco's City Hall and SFO International airports?

**Activities:** Follow these directions to create a shake table to test different building designs

<https://www.sciencefromscientists.org/wp-content/uploads/2018/07/Extension-E07-EQR-Buildings.pdf>

(\*note that the mini marshmallows in the instructions can be replaced with sponges cut into 1in x 1in squares)

You will need:

<ul style="list-style-type: none"><li>• 20 sponge pieces</li><li>• Box of toothpicks</li><li>• Binder you don't mind cutting</li></ul>	<ul style="list-style-type: none"><li>• 4-8 sm balls of equal size</li><li>• 2 large rubber bands</li><li>• 4x6 plastic container</li></ul>	<ul style="list-style-type: none"><li>• Marbles</li><li>• Box Cutter</li><li>• Scissors</li></ul>
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**Make observations & use Claims, Evidence, and Reasoning!**

- Claim:** Engineers should build a model of a building in order to test its stability in an earthquake
  - **Evidence:**
  - **Reasoning:**
- Claim:** The most stable building design I tested was \_\_\_\_\_ (describe shape/design)
  - **Evidence:**
  - **Reasoning:**