Unit Overview

In 2010, a powerful earthquake destroyed homes and devastated communities in Haiti. Now our fictional, world-traveling brother and sister duo, Jacob and India, are there learning how to support and protect buildings to better withstand the force of an earthquake. Jacob and India guide kids as they engage in hands-on activities developing their understanding of how to engineer earthquake-resistant, model buildings. Kids will also establish building codes to help others build earthquake-resistant structures.

Engineering Application/Unit Goals

Guided by the Engineering Design Process, kids will become earthquake engineers as they work together to engineer a solution to an earthquake engineering challenge. Earthquake engineers develop and use strategies that minimize the effects of earthquakes on structures. They use shake tables to model how their earthquake-resistant designs respond to vigorous shaking. In this unit, kids explore these strategies and use their own shake tables along with special earthquake magnitude meters to inform the design of model buildings in earthquake-prone areas.
Unit Map

Prep Adventure 1: What is Engineering?
Kids engineer a tower and are introduced to the Engineering Design Process as a problem-solving tool.

Prep Adventure 2: What is Technology?
Kids explore the idea that they, as engineers, can design and improve technology.

Adventure 1: A Shaky Situation
Kids are introduced to the problem: how can we stop buildings from being damaged during an earthquake?

Adventure 2: Building Skeletons
Kids explore how earthquakes impact buildings of different heights and shapes.

Adventure 3: Stop the Slide
Kids engineer ways to stop their buildings from sliding off of the shake table.

Adventure 4: Getting Braces
Kids engineer ways to stop their buildings from changing shape during a test on the shake table.

Adventure 5: Create an Earthquake-Resistant Building
Groups plan, create, and test their buildings on the shake table.

Adventure 6: Improve an Earthquake-Resistant Building
Groups improve their initial designs, test them, and finalize their building codes.

Adventure 7: Engineering Showcase
Groups present their final designs and share their knowledge of the Engineering Design Process.

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