

Earthquake Challenge

Grade levels 4, 7

Program Description:

In areas of tectonic activity, people must design for potential earthquakes. In this activity, students design and use simple materials to build small buildings (models) to withstand earthquakes of varying intensities. Buildings are tested on a “shake table.”

Massachusetts Curriculum Standards:

Grade 4: Earth and Space Sciences

ESS3. Earth and Human Activity

4-ESS3-2. Evaluate different solutions to reduce the impacts of a natural event such as an earthquake, blizzard, or flood on humans.

Grade 4: Technology/Engineering

ETS1. Engineering Design

4.3-5-ETS1-3. Plan and carry out tests of one or more design features of a given model or prototype in which variables are controlled and failure points are considered to identify which features need to be improved. Apply the results of tests to redesign a model or prototype.

4.3-5-ETS1-5(MA). Evaluate relevant design features that must be considered in building a model or prototype of a solution to a given design problem.

Grade 7: Technology/Engineering

ETS1. Engineering Design

7.MS-ETS1-2. Evaluate competing solutions to a given design problem using a decision matrix to determine how well each meets the criteria and constraints of the problem. Use a model of each solution to evaluate how variations in one or more design features, including size, shape, weight, or cost, may affect the function or effectiveness of the solution.*



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