

Name: _____ Period: _____

GEOLOGIC HAZARD SURVIVAL

Strand 7.2.3: Ask questions to identify constraints of specific geologic hazards and evaluate competing design solutions for maintaining the stability of human-engineered structures such as homes, roads and bridges. Examples of geologic hazards could include earthquakes, landslides, or floods.

Engineers work to ensure that buildings can withstand any forces exerted on them. A building needs to withstand forces from nature such as storms, earthquakes, flooding, landslides, etc.

Task: Build a structure that can withstand Earth's forces.

1. What does a structure need in order to withstand an earthquake?
2. Create a building using the supplies available. Draw or describe your design:

EARTHQUAKE!

Place your building in the sand table.

Shake the box from side to side until your structure collapses.

3. Redesign your building. Draw or describe your improved design.

EARTHQUAKE!

Place your building in the sand table.

Shake the box from side to side until your structure collapses.

4. Draw or describe the design that withstood the best during the earthquake.
5. What structural elements were used that allowed this building to stand the longest?
6. What constraints does a building engineer face when constructing a building near an Earthquake zone?

Part 2

1. Change your structure so that it will withstand a flood. Draw or describe your structure:

FLOOD!

Place your building in the water table.

Pour the water from the pitcher into the water table.

2. Redesign your building. Draw or describe your improved design.

FLOOD!

Place your building in the water table.

Pour the water from the pitcher into the water table.

3. Draw or describe the design that withstood the best during the flood.

4. What structural elements were used that allowed this building to stand the longest?

5. What questions would a building engineer have to answer before building near an ocean or lake?