

## Earthquake-Proof Zone

Your eyes open wide as you leap from your sleep. Things are crashing down around you. You stand low and wide hoping to steady yourself, but the ground beneath you continues to sway you left and right. Finally, you decide its best to lunge underneath a chair hoping that it will protect your head from anything that may fall down on it.

It felt like an hour of terror, but when you look at your clock, you realize that only about 2 minutes had passed before this living nightmare was over.

“You stupid...stupid punk!” You look over your shoulder to see Battle Masher thundering towards the steam punk with eyes nearly bulging out of his head. “My treasured items are all broken! You Knew this was an earthquake zone yet you did nothing to save us!”

At this point, no one dares to stand up to Battle Masher. The steampunk though, manages to wolf up the courage to speak. “Forgive me master. If you allow me though, I will redesign all of the buildings in this region to be able to survive the next earthquake.” A moment of silence overtakes them both. “Excuse me, master. I have work to do”

## Task 1: Rumbling Tower

- Design 2 identical looking frame structures, but make one able to resist the forces of an earthquake.
- The buildings must be at least 2 feet high.
- You may brace the building, however, it must be able to swing and bend relatively easy....so do not over brace it.
- Popsicle sticks are not permitted, however BBQ skewers, toothpicks, and pipe cleaner wires are allowed.
- Both buildings will be taped to a skateboard roller after which I will shake for 10 seconds.
- **You must submit a presentation explaining**
  1. all of your strategies explained. **(200 XP)**
  2. all of your tests explained (success & failures) **(100XP)**
  3. all of the variables that can effect your results (explained) **(100XP)**
- You will receive the final **100XP** if one building has noticeable shaking and the other one doesn't.

Reward: 500XP + 500 gold x dice of decision ....per person

## Task 2: Earthquake Jenga

- Design a method to prevent a Jenga tower from collapsing when shook for 10 seconds. The central blocks will be removed from top to bottom.
- There must be a before (crumbles) and after (no crumble) simulation with fair shaking.
- **You must then submit a presentation that discusses the following.**
  1. all of your strategies explained. **(200 XP)**
  2. all of your tests explained (success & failures) **(100XP)**
  3. all of the variables that can effect your results (explained) **(100XP)**
- If the Jenga tower remains standing after the shaking, you will receive the final **100XP**. Otherwise you receive 10XP per second that it stands.

**Reward:** 500XP & Bonus 500 gold x dice of decision ...**per person.**