# CALIFORNIA STATE SCIENCE FAIR
## 2010 PROJECT SUMMARY

**Name(s)**
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**Project Number**
**J1003**

**Project Title**
## Shake Down

**Abstract**

**Objectives/Goals**

Shake Down is a project in which I plan to see if I can harness one of the world's most powerful natural forces, an earthquake. I am doing this project because I want to see it is possible to use a destructive force as a power source for house that has been hit by an earthquake.

I predict that my generator will only be able to have a limited amount of power due to the fact of how short earthquakes are but if I lengthen the earthquake's height I believe that there is a higher potential for more energy being produced.

**Methods/Materials**

Materials:

Balsa house, Electrical tape,10x10 wooden house board, 3½x2X2 wooden blocks, 25x12 wooden main base, brass elbow joints and screws, Shake flashlights, Rare earth magnetic discs, Copper wire and wire-cutter, Multifilament plastic covered wire and wire shredder, Soldering iron, Epoxy glue, Wood glue, Grain of wheat light bulb, Voltmeter, Metronome for timing

Method:

1.Assemble small house, leaving roof off and a small opening for wires to enter and exit. 2.Mark on 10" x 10" board location of generator and the house. 3.Screw down the house to the board. 4.Assemble generator by sawing off the front end of a shaky flashlight. Take the two copper wire ends from the flashlight and solder a covered wire extension to each of the original wires. 5.Glue the generator into place. 6.Solder the extensions to the small light and screw the light into the house and glue the roof on. 7.Attach two elbow joints to the side of the board. 8.Take two of the wooden blocks and attach the other part of the elbow joint to them. 9.Screw the blocks into the main board. 10.Attach voltmeter to the wires leading the house. 11.Set timer for 30 seconds and turn on volt meter. 12.Start timer and rock the upper board until the thirty seconds are up. 13.Observe the highest reading on the voltmeter. 14.Write down observation. 15.Reset timer, place blocks under each side of board to simulate an earthquake with smaller surface waves and shake again.

**Results**

My results were that electricity was produced from the the movement of the generator, and that the most electricity was produced from the shaking with the blocks.

**Conclusions/Discussion**

In conclusion it seems that my hypothesis was correct because the generator was able to produce more than one volt of power. One thing I noticed though is that no real earthquake could power the generator I

**Summary Statement**

My project is about producing emergency electrical power from earthquakes.

**Help Received**

Dad helped me build the base for my house, John Newby helped me attach my voltmeter, Mom helped glue things on my board.