



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Tori C. Nishimoto	Project Number J0711
Project Title Investigating the Measurement of Soil Stability	
Objectives/Goals I want to determine which type of soil will have the greatest amount of stability for a foundation with buildings. Also, does vibrating the soil before building on it make the soil more stable?	
Abstract Methods/Materials I collected three different types of soil. Loam, a clay loam, and a sandy soil. I put 70 ounces of soil into an 80 ounce bucket. Cut holes on both sides of bucket. I then put a dowel with a hook through the bucket. I then tested how much force it takes to remove the dowel. I used a spring scale to measure the force. 2nd test - same thing, but I vibrated the soil before checking the force. I placed bucket on vibrating platform for 30 seconds. This allowed the soil to settle. I then used spring scale to check force.	
Results There was a big jump in the amount of force it took to remove the dowel after the soil was vibrated. In all three soils. It took over twice as much force. The biggest jump was with the clay soil. It took 2.62Newtons before vibration. and 8.72N after vibration. Clay also took the most force before vibration and least was the soil loam.	
Conclusions/Discussion This shows that developers should try to avoid building on loam soil. Try to build on clay. In some countries, such as Dubai, they are shaking the soil before building. If developers have a method of doing this, my experiment clearly shows that the building will be built in soil that is more stable.	
Summary Statement I am investigating how soil stability can change after vibration occurs.	
Help Received Teacher taught scientific method. Dad helped create vibrating platform and collect soil.	