

Assesing Earthquake Knowledge and Earthquake Preparedness in Oakland, CA and Alameda, CA

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Introduction

We are middle school students from different schools in Oakland, California and we participate in the program EBAYS (East Bay Academy for Young Scientists). We are interested in seeing levels knowledge of earthquakes and earthquake readiness in communities in the Bay Area. Because in the Bay Area there are two major faults, the San Andreas Fault and the Hayward Fault, it is likely that a significant earthquake will happen here in the future.

Based on this fact, we wanted to know if people in Fruitvale district of Oakland and the nearby city of Alameda are ready for earthquakes. To gain a better understanding we interviewed people to see if they are prepared for the next large earthquake, and to find out how much they about earthquakes. We thought that people's level of understanding of earthquakes would be low because most of the people in Fruitvale and Alameda are not really focused or interested in earthquakes.

Study Setting

Fruitvale district of Oakland, California: We choose to interview people in this area because we live in or nearby this neighborhood. We wanted to know what the level of understanding of earthquakes would be in our community.

Alameda, California: We choose to interview people in this area because it is another city in the Bay Area and we wanted to explore outside of our neighborhood. The city of Alameda was also the closest and most accessible through public transportation. At the end of our investigation, we also noticed that the people we surveyed in Alameda appeared older in age than those surveyed in Fruitvale.

Methods

1. We prepared an Earthquake Survey using the software program, Pendragon. We had 11 questions in total. 8 questions were created to gain an understanding of public earthquake knowledge and 3 questions were related to earthquake preparedness.
2. We began interviewing people for our Earthquake Survey using Palm Treo Smart Phones (which had the Pendragon software on them). We interviewed 21 people in Fruitvale during the month of July 2009 and 15 people from October 31st to November 7th.
3. We interviewed people in public places including the grocery store, Mi Pueblo, and Fruitvale BART station. The survey questions were asked in Spanish and English depending on the participants' language choice.
4. We went to a grocery store in Alameda to interview 11 people for our Earthquake Survey.
5. We used computers to analyze and graph the data. We compared the number of correct and incorrect answers for knowledge questions and looked at percentages of people who feel safe or are better prepared for earthquakes.

Area of Study



Figure 2: Earthquake Survey Study Sites in Oakland, Ca and Alameda, Ca. Google Earth

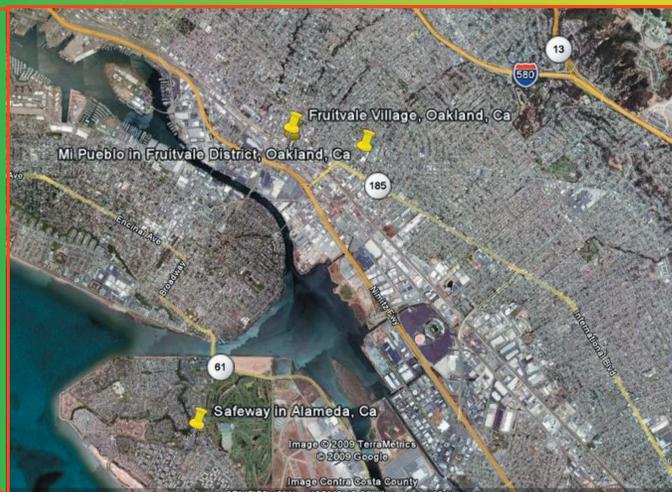
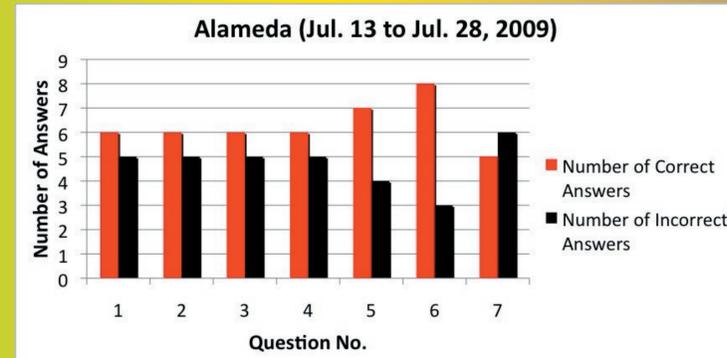
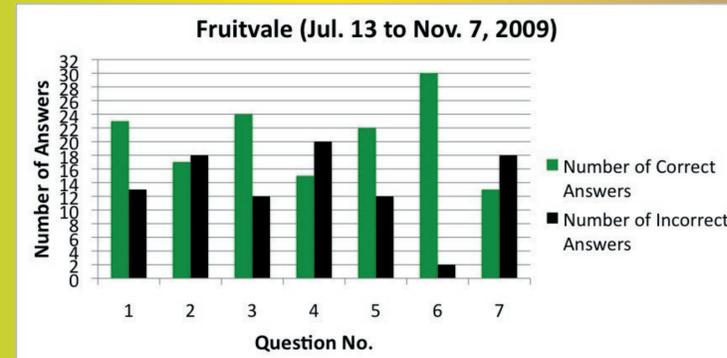


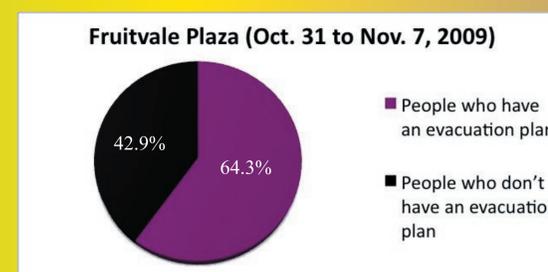
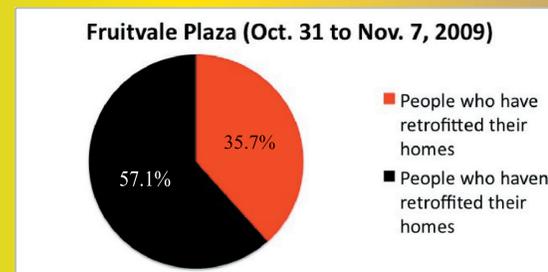
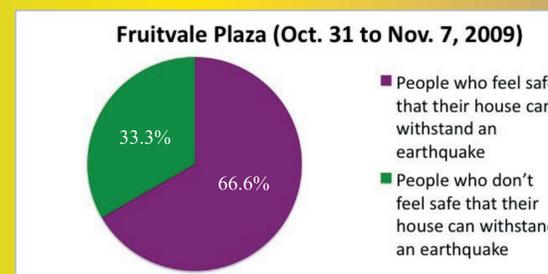
Figure 1: Fault Map of California. USGS Education. 2009

Results

Figures 3 and 4: Bar charts analyzing earthquake knowledge in Fruitvale and Alameda



Figures 5, 6 and 7: Pie charts analyzing earthquake preparedness in Fruitvale.



Data Analysis

More people had knowledge about earthquakes. We know this because most of the people answered the survey questions correctly.

We noticed that most of the people answered Question 6 (See attached survey) correctly. This means that most of the people we surveyed knew what a seismograph is.

More people were confident that their house could survive an earthquake than those who thought differently. 66% of the people we surveyed felt that their homes could withstand an earthquake.

We noticed that people in Alameda answered more questions correctly. We think that the reason why most of the people we interviewed answered more questions correctly is because they were older and therefore more knowledgeable.

More people have homes that are not retrofitted. We think that people don't want to spend money to retrofit their house because retrofitting a house cost too much. We also think that since many people are "confident" that their house can withstand an earthquake.



Figures 8 and 9: Earthquake Survey Student Researchers. (From left to right) Bianca Centeno, Freddy Rodriguez, Jorge Torres and Raul Ramirez.

Conclusion and Discussion

Our results showed that though people in these communities had knowledge of earthquakes and felt safe, many did not have their homes retrofitted. Our study was not just a tool for data collection, but we believe that it made people think more about what they should do to become prepared for earthquakes. Based on what we learned, there is a need for spreading more information about earthquake safety and earthquake knowledge. We can do this by hosting meetings and putting up posters in Fruitvale about earthquake safety as a way to help the community to be prepared for an earthquake. These meetings and posters will focus on:

- How to Retrofit Your Home
- How to Develop a Good Evacuation Plan
- How to Find Another House if You Don't Feel the One You Live in Can Withstand an Earthquake.

In the future, we also will keep track of people's occupations because we found that this affected their abilities to answer survey questions accurately. For example, we gave the survey to some fire fighters and they all answered the questions correctly. We also noticed that older people knew more about earthquakes. In the future, we will create a question on our survey that asks people their age to find out if age is related to knowledge about earthquakes.

Works Cited

"Fault Map of California." USGS Education. Web. 16 Dec. 2009. <http://education.usgs.gov/california/maps/faults_names3.htm>.

Oakland, CA." 14 December 2009