



**CALIFORNIA STATE SCIENCE FAIR  
2017 PROJECT SUMMARY**

<b>Name(s)</b> <b>Zara Ainge</b>	<b>Project Number</b> <b>J0301</b>
<b>Project Title</b> <b>Measuring the Effectiveness of Earthquake Survival Strategies</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of my experiment is to prove which earthquake survival strategy, Duck and Cover, or Triangle of Life, is most effective at protecting people within a building during an earthquake. This is important because earthquakes are unpredictable so people are often unprepared and need to react quickly. My hypothesis was that Duck and Cover would be the most effective way to avoid impact from falling debris in an earthquake.</p> <p><b>Methods/Materials</b> The experiment was done by building a homemade shake table and conducting the experiment repeatedly for each strategy. I built the shake table using a cardboard box, a motor with wires and potentiometer. I also needed blocks and planks for the table and small pots of playdo to test the level of damage. I found my data by writing down how much damage the subject had after the shake table had caused the simulation. For example if the subject got hit in the head that can be very dangerous and can be put as a 3 or a 4 out of 5.</p> <p><b>Results</b> According to data collected, the control (no protection) averaged 2.33, Triangle of life averaged 2.16 and Duck and cover averaged 1.41. Duck and cover had the least damage making it the safest strategy to use to survive in an earthquake. Triangle of life followed with the most dangerous strategy to survive in an earthquake. The control had a higher Average amount of damage.</p> <p><b>Conclusions/Discussion</b> Overall, the variable proved that Duck and cover was the safest independent variable because the table used in the strategy stopped blocks hitting the playdo. I found the relationship between the cause and effect in this experiment was Duck and Cover is safer than Triangle of life because that Duck and cover is a more efficient strategy to survive an earthquake. My experimental testing data evidence didn't support my research but shows which strategy is better to use in an earthquake. It is still a topic to be investigated more and shows that previous claims about Duck and cover vs. Triangle of life are true.</p>	
<b>Summary Statement</b> Testing strategies to survive in an earthquake to determine which one is safest to use if an earthquake occurred using a homemade shake table as a earthquake simulation.	
<b>Help Received</b> My father helped me buy the right equipment for my shake table and he also showed me the way to balance out the simulation process.	