



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Adam Hendey; Emo Kirk	Project Number 28254
Project Title The Trebuchet: Linear Ratio and Physics	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Our object is to determine whether a linear ratio exists between the counterweight and the range of a trebuchet.</p> <p>Methods/Materials Our team created an original design for and constructed a functioning trebuchet using wood, nails, screws, rope, a bucket, a hook, pulleys and wood glue. Adding weight to the finished trebuchet in ten pound increments, we fired the trebuchet and recoded the distance the projectile was thrown in relation to the weight of the counterweight. We documented and subsequently graphed and charted our results.</p> <p>Results Through our testing and documentation, we determined that there is indeed a linear ratio between the range of a trebuchet and the counterweight. Our graphs clearly delineate the very consistent and steadily upward progression of distance thrown as weight was increased.</p> <p>Conclusions/Discussion We concluded that by looking at the physics of how a trebuchet functions, we could determine a definite relationship between the counterweight and the range of the trebuchet. Although our experiment answered our hypothesis affirmatively, we would like the opportunity to refine our engineering and design to create a trebuchet that functions even better to project items a greater distance.</p>	
Summary Statement Our project looks at the physics of the trebuchet and examines the linear ratio between the trebuchet's counterweight and range.	
Help Received Parent supervised use of construction tools and assisted in procurement of materials.	