



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Jessica Black; Eunice Chen	Project Number S1504
Project Title The Relationship Between Kinetic Energy of a Dropped Object Impacting Water and Height of Its Resulting Wave	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this project is to determine a relationship between the kinetic energy of a dropped object and the height of the resulting wave.</p> <p>Methods/Materials Materials used include a Tupperware container, food dye, a small ball, string, a permanent marker, paper, a ceiling hook, and water.</p> <p>Our procedure: Fill the container up to 5.8 cm of water, add food dye, cut strips of paper, mark each, place 3 around the container with the mark meeting the water, secure papers by folding over edge, mark at 2, 5, and every 2.5 after up to 50 cm, hang string from hook so that it barely touches water, drop ball from first drop height and allow resulting waves to subside, examine the paper, measure the change of the wave height, and repeat 3 times for each height.</p> <p>Results Our results tapered from the hypothesis graph and then wavered. The tapering was caused by elasticity of water. Splashing and increasing kinetic energy of the ball caused the wavering. Energy was also lost to sound upon impact and possible superposition of waves.</p> <p>Conclusions/Discussion We conclude that the energy of a wave related to the kinetic energy of the ball as $1/x$ as long as the material and confines of the wave allowed.</p>	
Summary Statement To find a relationship between the kinetic energy of a dropped object impacting water and the height of its resulting wave.	
Help Received No help or aid of any sort was received	