



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Kevin M. Kingshill	Project Number J1622
Project Title Temperature Matters: Testing the Velocity of a Marble through Water	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of my experiment is to determine whether objects fall faster through hot or cold water.</p> <p>Methods/Materials For the experimental method, I dropped thirty marbles down a four-foot clear plastic tube. The tube was first filled with 95 degrees Celsius water and then again, using 4 degrees Celsius water. I timed each drop accurately with a stop watch, then recorded the times and determined through which temperature of water the marble dropped more quickly.</p> <p>Results The average time it took for the marble to fall through the hot water was 1.48 seconds. The average time it took for the marble to fall through the cold water was 1.709 seconds. On average, the marbles fell 13.4% faster through the hot water than the cold water.</p> <p>Conclusions/Discussion When water is near boiling, the molecules jump around and spread apart, thus making hot water less dense. In cold water, the opposite happens; the molecules slow down and come together, making the cold water more dense. This is why the marbles moved faster in hot water.</p>	
Summary Statement In this project, I tested whether objects fell faster through hot or cold water.	
Help Received Physics teacher/friend helped with idea; Father helped assemble tubes; Mother helped type report; Parents helped record times.	