



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

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Project Title Precise Projectiles	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The object was to find out how the angle and force of trajectory affect the distance that a projectile travels. Our hypothesis was that the projectile launched with the angle closest to 45 degrees and strongest force (out of the three that we have chosen) will travel the farthest distance.</p> <p>Methods/Materials The materials used were: a Lego Robotics Inventions System 2.0, Lego Ultimate Builders Expansion Set, six AA batteries, computer, protractor, and a measuring tape. We used three different angles (10°, 20°, and 55°) and three different forces (the distance of stretch in the rubber bands). We did three trials with each combination, measured the distance the projectile traveled and calculated the average distance.</p> <p>Results The projectile launched at the angle closest to 45° (55°) and the greatest force (rubber band stretched to 10.4 cm) traveled the farthest.</p> <p>Conclusions/Discussion Our hypothesis was correct. This project gave us a greater understanding of the field of physics. We learned that if you need to launch a projectile the greatest distance, use the angle closest to 45° and with the greatest force.</p>	
Summary Statement Angle and force of trajectory affect the distance that a projectile travels.	
Help Received	