



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

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Project Title That's the Way the Ball Bounces	
Abstract Objectives/Goals Our experiment was bouncing many different kinds of balls on a piece of wood. Our original question stated, "Which ball will bounce the highest when bounced off a piece of wood." The experiment tested the hypothesis, "If a ball is bounced from a height of one meter onto a piece of wood, then the ball with the greatest amount of compressibility will bounce the highest." Methods/Materials We gathered many different kinds of balls ranging from a soccer ball to a steel ball, a wood surface, a meter ruler, a foot ruler, a brick, and a lever. We then bounced the balls on the wood surface and found their height and number of bounces. We then repeated that step three times to make sure our results were accurate. We recorded the data we had collected into charts. The next step was to perform the second part of our experiment-measuring the compression. We did this by measuring the diameter of the ball and then the diameter of the ball with a brick placed on top of it. We recorded this information into a chart as well. Lastly, we analyzed our results and wrote our conclusion. Results Our results show that the ball with the largest compression is always the one with the most bounces and the highest bounce. Our results also show that many of the smaller balls didn't have any compression factor, while some of the larger balls did. They showed that the small bouncy ball had the largest compression factor, therefore it had the largest amount of bounces and the highest bounce. Our results further show that generally balls with a higher compression factor will bounce more times than other balls. Conclusions/Discussion Our results proved our hypothesis to be correct. Our experiment shows that balls with a large amount of compressibility will bounce higher than other balls with a low amount of compressibility.	
Summary Statement In our project, we measured the number of bounces done by balls, the height of each bounce, and the compression factor along with the idea of the coefficient of restitution.	
Help Received We recieved help in doing our project from our parents who supervised us in building our apparatus.	