



**CALIFORNIA STATE SCIENCE FAIR  
2010 PROJECT SUMMARY**

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| <b>Name(s)</b><br>Arjun D. Boddu  | <b>Project Number</b><br><b>J0603</b> |
| <b>Project Title</b><br><b>Exercise Balls: The Search for Cognitive Enhancers in the Classroom</b>  |                                       |
| <p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b><br/>Will using an exercise ball instead of a standard school chair help students have better short term memory?</p> <p><b>Methods/Materials</b><br/>I recruited 20 4th grade students and divided them into two groups: a control group who were seated on standard school chairs and a test group who were seated on exercise balls. I arranged four desks with two standard chairs and two exercise balls. I seated students at the four desks. I placed a sheet of paper with many objects pictured face down on the desk. I instructed each student to turn over the sheet. Using a stopwatch I gave each student 15 seconds to memorize the objects pictured on the sheet. After 15 seconds I removed the sheet and asked each student to note what objects he or she remembered. I recorded the results. I brought in 4 more students and repeated steps 2 to 7 until all twenty students completed the task.</p> <p><b>Results</b><br/>The data proved my hypothesis that students seated on exercise balls had better short term memory than students seated in standard school chairs.</p> <p><b>Conclusions/Discussion</b><br/>The data proved my hypothesis that students seated on exercise balls had better short term memory than students seated in standard school chairs. Seating the children on exercise balls helped the students' memory on the test because they were making movements that stimulated their brains to help them stay focused. The students sat up straighter on the balls in order to stay balanced and this may have helped blood flow to the brain. I found that since the students enjoyed sitting on the balls they had improved attention span as demonstrated on the test results.<br/>For reliable results, I limited the age range of my subjects to the fourth grade, 9 and 10 year olds. I used a simple memory test that wasn't influenced by their level of knowledge. I used a stopwatch for timing, enlisted the aid of an assistant, and conducted all parts of the the experiment in the same environment.</p> |                                       |
| <b>Summary Statement</b><br>Will students who are seated on exercise balls have better short term memory than students seated on standard school chairs?  |                                       |
| <b>Help Received</b><br>Parents for helping me proofread my work, a classmate for helping me conduct the experiment and a 4th grade teacher for letting me use his students for the experiments.  |                                       |