



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

Name(s) Megan G. Cagle	Project Number S0301
Project Title How Does Sleep Deprivation Affect Your Cognitive Abilities?	
Abstract Objectives/Goals The objective of my project is to determine if sleep deprivation affects the cognitive abilities of females between the ages of 14-17 years old. I believe that if a person does not get the recommended amount of sleep, a lack of focus, concentration, and decreased cognitive skills will be the result. Methods/Materials I used the 3-D Pentomino Puzzle and the Kohs Block Design Test to analyze cognitive skills. Using these cognitive tests on 15 girls aged 14-17 years old, I compared their performance level on each of the puzzles based on the amount of sleep they had obtained. They were tested after having slept ten hours, eight hours, and six hours. Results The results demonstrated that less sleep will negatively affect your cognitive abilities. As the sleep times decreased from ten to six hours, the puzzle completion times increased by 186% on the 3-D Pentomino Puzzle and by 64% on the Kohs Block Design Test. As more sleep was obtained, the easier it was to focus on the task and complete the puzzles. Conclusions/Discussion My conclusion is that sleep deprivation will adversely affect cognitive abilities. If a person does not obtain the recommended amount of sleep, the result will be a lack of focus and decreased spatial cognitive skills.	
Summary Statement My project proves that sleep deprivation will adversely affect spatial cognitive abilities, including a decrease in concentration and focus.	
Help Received My mother helped me organize and purchase the things needed for my project.	