



**CALIFORNIA SCIENCE & ENGINEERING FAIR  
2018 PROJECT SUMMARY**

<b>Name(s)</b> <b>Hanna M. Beck</b>	<b>Project Number</b>  38254
<b>Project Title</b> <b>How Sleep Deprivation Impacts Students' Memory</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this study was to determine if six hours of sleep a night for a week made a difference in memory compared to sleeping for eight hours a night for a week. <b>Methods/Materials</b> I had my participants sleep for six hours a night for a week and then take an online memory test that calculated how well a participant could recreate a pattern that they were shown. I then had them take the same memory test after a week of sleeping for eight hours a night. Then I gave them an hour to study with fake information I made up so they couldn't use any prior knowledge. I then had them sleep for six hours a night for a week again. After the week I tested them on the information I gave them earlier to test their long-term memory. I then repeated this with different data and the participants sleeping for eight hours a night this week. Then I compared the results from the two sets of weeks. <b>Results</b> The first set of data that tested short-term memory showed about a 38% increase on average in scores from the first week to the second week. The second set of data that tested long-term memory showed about a 16% increase on average from the first week to the second week. This proves that the number of hours of sleep a child receives does make an impact on their short and long-term memory. <b>Conclusions/Discussion</b> Although there have been studies that have shown the impact that sleep has on memory, none that I have found have done an experiment specifically on jr. high school students. My results prove that the number of hours slept makes a huge impact on young learners and the difference just two hours more of sleep has on their memory and subsequently their studies.	
<b>Summary Statement</b> I showed that two hours more of sleep makes a considerable difference on 8th graders short and long-term memory.	
<b>Help Received</b> I designed and performed the experiment by myself but was coached on how to interpret my results by my science teacher, Mr. Jackson.	