



**CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY**

Name(s) Annika S. Mauro	Project Number 35367
Project Title How Taste Affects the Brain	
Abstract Objectives/Goals My project was to determine how the brain reacts to different tastes, as measured by an EEG (electroencephalogram). Methods/Materials Using an Emotiv EPOC EEG Neuroheadset, I measured the "excitement" and "frustration" levels over time as ten people aged 12-14 tasted sweet, salty, spicy and sour solutions. Results After the sour solution was tasted the EEG registered a 15% average increase of "excitement" and "frustration". After the sweet solution was tasted the EEG registered a 33% average increase of "excitement" and a 30% average increase of "frustration". After the salty solution was tasted the EEG registered a 15% average increase of "excitement" and a 10% average increase of "frustration". After the spicy solution was tasted the EEG registered a 50% average increase of "frustration" and "excitement". Conclusions/Discussion After tasting the spicy solution the EEG measured the greatest increase of both "frustration" and "excitement". This is because spicy foods activate nerve fibers on the tongue which send messages to the amygdala as well as other parts of the brain releasing endorphins and other hormones. This pain and mixture of hormones creates a large increase of "excitement" and "frustration" as measured by an EEG.	
Summary Statement The focus of my project is how "excitement" and "frustration" levels in the brain react to tasting sweet, spicy, salty, and sour solutions, as measured by an EEG.	
Help Received Grandfather helped purchase the Emotiv EPOC EEG Neuroheadset.	