



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> <b>Julia P. Stuart; Owen P. Stuart</b>	<b>Project Number</b>  35214
<b>Project Title</b> <b>Wait a Minute! Time Perception in Children Can Change?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective was to see how time perception is learned in children. We hypothesized that time estimation would become more accurate with age and could be learned with feedback.</p> <p><b>Methods/Materials</b> We tested 40 children ranging in age from 4 to 18. They were all tested in a controlled environment, a large cardboard box with lights inside. Each subject was asked to estimate one minute three times. One group was told their actual times between estimates (feedback), and the other group was not (no feedback). Seven subjects returned for testing on a second day.</p> <p><b>Results</b> The four and five year olds did not understand the concept of a minute. Most subjects eight and under did not have the attention required for time estimation. Time estimation was similar in subjects 9 to 18 years old. In subjects nine and over, time estimation improved with feedback. Unexpectedly, subjects gave longer time estimates on their second and third attempts.</p> <p><b>Conclusions/Discussion</b> Older children had more accurate estimations of one minute, and feedback improved time estimation. It is likely that older subjects had more accurate time estimates because they had more focus. Subjects probably gave longer time estimates in their second and third tries because they knew what to expect and were more relaxed.</p>	
<b>Summary Statement</b> Time perception in children changes with age and can be improved with feedback.	
<b>Help Received</b> Our mother, Andrea Preble, helped us design the experiment and build the time machine (a controlled testing environment). Our father, Joshua Stuart, taught us how to make tables and graphs.	