**Student:** John Dim

**Course Title:** 7th Grade Science, Family 1

**Teacher:** Aaron Dobie

**Class Description**:

In 7th grade science this summer we focused on the study of biology, the subject Denver Public School students study in the seventh grade. Under the umbrella of biology we began the summer with photosynthesis – the process by which plants make their own food out of water, carbon dioxide and sun energy. We then studied food chains, food webs and how energy is transferred between different trophic levels – producer, primary consumer, secondary consumer, tertiary consumer – of the food chain. In addition to photosynthesis and food chains we learned some “how to” skills such as identifying experiments’ independent and dependent variables, graphing experimental data and labeling graphs’ x axes, y axes and titles. Students got to record and graph their own data in experiments such as “Does a person’s head size affect their 40 yard dash time?” During the last week we synthesized all of the summer’s ideas into the “Solar Oven Experiment” where students created their own solar oven out of a pizza box, aluminum foil, saran wrap and tape in order to harness the sun’s power and cook pizzas and s’mores. The ovens got as hot as 180°F. In addition to cooking food we tested whether black ovens worked better than white ovens. Students kept track of their ovens’ internal temperatures and graphed the black ovens’ temperatures side by side to the white ovens’ temperatures to decide which colored oven was more effective. The black ovens worked better. Students had to complete a final packet for the “Solar Oven Experiment” and show an understanding of all parts of the scientific method – asking a question, making a hypothesis, writing experimental procedures, gathering materials, recording data, graphing the data and interpreting their graphs in a paragraph-style conclusion.

**Academic Performance**:

Always smiling, energetic and mentally quick, John showed great improvement this summer. Even though I was his science teacher I noticed improvements in his language, writing and reading skills as well as improvements in his understandings of the scientific materials we studied. On the third day of class all students took a science pre-test and then took the same test during the last week of school. This was Breakthrough’s way of gauging student improvement over the summer. On the second test John was able to identify the inputs and outputs of photosynthesis, explain that plants make their own food for energy whereas animals eat food for energy, and correctly graph a set of exponential data. These are things that he was not able to do on the first test and are very impressive improvements.

John also improved the quality of his homework. He began to call his teachers for help on his homework (which is highly suggested by the Breakthrough program) and started to take his work more seriously as the summer progressed. This was very good to see as the trend among students is usually the opposite: they start off working hard and then turn in poorer quality work as the summer goes on. Sometimes it appeared to me that John’s homework was copied from another student’s homework, which is not okay to do.

As the energetic young man he is, John provided Family 1 with a number of good laughs. One thing that John could work on to improve his grades is focusing while in class. Quite often John would be distracted or daydreaming while other students were quietly working on in-class assignments. Again, I think that boys’ abilities to focus sometimes develop later in life but it is something that boys must work on. If John could have paid attention more often and consistently taken notes his test scores would have been better.

Overall, John was a pleasure to teach and really lit up the classroom with his great laugh and enthusism. I know that John will go far.