Does Your Toothpaste Really Work?

[redacted]

Oakleaf Junior High

The purpose of my project was to determine the effectiveness of whitening toothpast My hypothesis was if I test four different kinds of whitening toothpaste on one coffee stainec tile each while scrubbing the tiles, then I think the toothpaste with the most whitening ingredients will whiten the most because the more whitening ingredients a toothpaste has th more whitening that will happen.

In order to test my hypothesis I choose four different toothpastes two that were whitening and two that were not. For each toothpaste I scrubbed coffee-stained stone tiles. Then I figured out on a scale of one to ten where the tile is. I repeated this two more times.

My results were the crest cavity got a seven over all, Crest whitening got a four over a Crest cavity got a six, and Colgate whitening got a four over all in all the trials, so throughout the trials it seems that Colgate whitening whitened the best.

Based on my results the data is inconclusive because the data was all over the place. I were to do this experiment again I would use a different surface to stain like dentures or hum teeth. This project is useful because it could help people save money on toothpaste and if whitening toothpaste really works.

Cooling Soda? I don't have time for that!

[redacted]

Oakleaf Junior High

The purpose of my experiment is to find a way to cool soda in minutes. My hypothesis is to find out if I put canned soda in three different mixtures of ice, then the soda will cool faster in the ice, water, and salt mixture because when ice and salt are mixed, the ice suddenly becomes cold.

In order to conduct my science experiment, I mixed ice with different substances. I had an ice mixture, ice and water mixture, and an ice, salt, and water mixture. Every thirty minutes, I checked the temperature of the sodas in the cooler with a thermometer. When I finish checking the temperature, I record the temperature along with the time I checked the sodas and some drawings of what happened.

After conducting the experiment, I observed that the more substance I mixed with the ice, the cooler the soda will be. The average of the ice mixture is 6.2° Celsius. The average of the ice and water mixture is 2.8° Celsius. The average of the ice, salt, and water mixture is -10° Celsius.

My conclusion ended with my hypothesis being correct. My hypothesis was that the ice, salt, and water mixture will cool the soda much faster than the other mixtures. The results of my science research project could be used in real life by people who want to cool their soda quickly.

Can you take the heat?

[redacted]

Oakleaf Junior High School

The purpose of my experiment was to discover what happened to red blood cells when they were heated past their normal temperatures. If I exposed red blood cells to irregular temperatures (temperatures exceeding that of the average human blood), then hemolysis would occur because the cells were in a foreign environment and the temperatures would cause them to break apart.

I performed my experiment by having blood drawn from a human participant then distributin into six test tubes. The blood was then gradually heated in a water bath until it reached its designated temperature. After that, six microhematocrit samples were taken for each test tube to find the hematocrit, and blood smears were made to be later analyzed.

During my experiment, I observed a progression in hemolysis rates as the temperature of the blood increased. Although my quantitative data did not fully support my hypothesis, the qualitative d proved otherwise. On average, the sample with the highest hematocrit was 38 degrees Celsius with a hematocrit of 35.5% and the lowest average hematocrit being 28.83% with the 46 degree sample.

Based on my results, I can conclude that my hypothesis was correct, and that hemolysis occurred as the blood temperature increased. An application for this investigation applies to thousan of pints of blood being stored in massive crates in harsh summertime conditions. The internal temperatures can reach over 115 degrees (Fahrenheit), ruining the blood and costing millions of lives. Hemolysis could be prevented and millions of lives would be saved.