

According portion of
the bone has
disappeared, though



**ASSIGN
BUSTER**

According to the qualitative data, Coca Cola was the only soda drink that produced significantly visible changes on the bones.

Before the reaction, color of the all chicken bone was white. After a day, the reaction between Coke and chicken bone was clearly visible. Significant parts of chicken bone have been disappeared and turned black. This may suggest the high acidity of Coca Cola. Lemon Soda was also able to create some visible changes on chicken bone. Few portion of the bone has disappeared, though it was not significant compared to the bone left inside Coca Cola. However, Sprite and Mountain Dew were not able to create qualitative changes, but were able to create differences between the initial mass and mass after the reaction.

This can suggest that there were unobservable molecular movements during the reaction that changed the mass. Table 5 indicates that Coca Cola produced the lowest average mass of chicken bone, 14.67 g in initial 3 hours, 12.02 g in 6 hours, 10.

22 g in 9 hours, 9.12 in 12 hours and 6.52 remaining after a day.

Followed by Coca Cola, Lemon Soda drink had the second lowest average mass of chicken bone, 14.98 g during initial 3 hours, 13.45 g in 6 hours, 12.23 g in 9 hours, 10.56 g in 12 hours and 7.

65 g remaining after one day. Mountain dew inflicted very little change on the chicken bones. During the initial 3 hours only 15.82 remained. 14.

88g in 6 hours, 14.02g in 9 hours, 13.57g in 12 hours and 13.41 g remained after a day.

<https://assignbuster.com/according-portion-of-the-bone-has-disappeared-though/>

The following data points clearly show that Coca Cola has dissolved the chicken bone relatively faster than any other soda drinks and Mountain Dew has dissolved the chicken bone with slowest rate. Reflecting these data points, a similar trend was observed from table 6. According to table 6, Coca Cola had the average rate of reaction 0.

0.00658g/m, 0.00377 g/m for Lemon Soda, 0.00279 g/m for Sprite and 0.00179 g/m for Mountain Dew. There was a visible decrease in the value of the rate of reaction, which indicates that the time it takes to corrode the chicken bones have increased accordingly with the pH level, which is an indication of the concentration of phosphoric acid. The following data points are also well displayed within graph 2, showing the direct relationship between the pH level of soda drinks and average rate of reaction.

There was a decreasing trend of rate of reaction as the pH level increased. This indicates that the rate of reaction decreases as the pH level increases. Moreover, the trend line of the graph fits the data points quite well, though there was a relatively steep decrease in the gradient due to the inconsistent time interval. To investigate whether my data points have fit into the trend line further, I decided to analyze the R² value.

Looking at the graph, it is evident that the R² value of trend lines of Coca Cola, Lemon Soda, Sprite and Mountain Dew were 0.9902, 0.9935, 0.

9642 and 0.9983 respectively. We can know that when the R² values are close to 1, the data completely fits in to the trend line. Because my R² values were very close to 1, I can conclude that the processed data fits well to the trend lines. Finally, according to table 1, 2, 3 and 4, the value of the <https://assignbuster.com/according-portion-of-the-bone-has-disappeared-though/>

mass of chicken bone with respective soda drinks were similar across each trials.

There was no big difference between the mass of chicken bone between each trial. Thus, we can conclude that the data are precise.