Popcorn

The Better PopcornProject Plan/Problem StatementThe researcher is testing three different brands of popcorn (Orville Redenbacher??™s, Act II, and Pop Weaver) to see which popcorn brand gives you the most popcorn for your money.

The plan is to take three bags of popcorn form three different brands of popcorn and pop them in the same microwave on the popcorn setting so they are all heated the same length of time. After popping each bag, the popcorn will be counted individually to determine which popcorn gives you most popped kernels for you money and how many unpopped kernels there are. To get a better understanding of this the researcher will use three bags from each brand to get and over all percentage of good kernels. By finding out which popcorn gives you the most for your money you will be able to maximize what you get and minimize what you spend to get it how to write essay about myself for interview .

The relevance of this testable question is to save money over all by getting the most for your money. Literature ReviewI have found two similar experiments on the internet. Both researchers tested five brands of popcorn and just took into account which brand off popcorn yielded the least amount of unpopped kernels. (Boyd, n. d.

) (Unknown, n. d.) Researcher #1 found that Act II had the least amount of unpopped kernels and researcher #2 found that Orville Redenbacher??™s had the least amount of unpopped kernels. These findings worked for them but I believe to find the best popcorn for you money you also need to know how many kernels you started with. Without this information you cannot

determine the best popcorn. For example one brand might have the least number of unpopped kernels left but if you started with less popcorn of that brand to begin with it doesn??™t make it the better popcorn. Tools Needed a. Three brands of popcorn (three bags each) b.

One large cookie sheet c. One big bowl d. microwave (900 watts) Experiment Design StepsTo do this experiment you will need to purchase three different brands of popcorn. To ensure consistency, butter flavored popcorn from each brand was used in this experiment. Start with three bags of each brand. This would be nine bags total. Then you will need to pop each bag to see which one has the best overall popping ratio. To do this you will need to pop one bag on the microwaves popcorn setting.

With this microwave it was two minutes forty seconds. The next step is to spread the whole bag onto the large cookie sheet for counting. As you count them place them into the large bowl. You will need to count the popped and unpopped kernels and chart the amounts of each.

Repeat by popping another bag and following the same counting procedure until all the bags have been popped and counted. Once this is done you can take the three totals for each brand and find the average of the three numbers for both the popped and unpopped kernels. This will give you the data you need to see which popcorn brand is the best overall popcorn. ReasoningI choose this method of experimental design so that each bag of popcorn was popped under the same set of circumstances so there was no variation to change the outcome of how many kernels popped in each bag. My reasoning behind this method of testing was that if each bag had the

same set of circumstances, any outcome would be a true test of which brand was the best for the buck. Other studies have just counted the unpopped kernels, but I think to get the best overall data you also need to count the popped so you will have a base line amount to start with. Sequence of Events1.

Purchase three different brands of popcorn. Brand A, B, and C2. Start with three bags each of brand A, B, and C3. Pop one bag of brand A on the microwaves popcorn setting4. Spread the whole bag onto the large cookie sheet for counting5. Count all popped kernels and record on chart6. Count all unpopped kernels and record on chart7. As you count them place them into the large bowl8.

Repeat steps 3-7 two more times for brand A9. Pop one bag of brand B on the microwave popcorn setting10. Repeat steps 4-7 two more times for brand B after popping11. Pop one bag of brand C on the microwave popcorn setting12. Repeat steps 4-7 two more times for brand C after popping13. Take the three amounts of popped kernels for brand A and add them, then divide by three to get the average popped kernels14. Take the three amounts of unpopped kernels for brand A and add them, then divide by the to get the average of unpopped kernels 15.

Repeat steps 13 and 14 for brands B and C16. Now you are ready to compare and see which popcorn yields the best amount of popcorn for you moneyVariablesThe independent variable in this experiment would be the three different brands of popcorn used for the testing. The dependent variable would be the number of popped and unpopped popcorn in each bag

after the cooking time is complete. The controlled variable is the microwave used to cook the popcorn, the cooking time of two minutes forty seconds, and the fact that all three brands were butter flavored. Threat Reduction to Internal Validity By popping the popcorn in the manner chosen in this experiment the hopes were to reduce internal validity. The same microwave was used on the exact same settings for each brand of popcorn so that what was observed from each brand could be duplicated as close as possible.

We wanted the microwave to have the same effect to each bag of popcorn so the outcome of the study would yield good data. HypothesisDue to eating many bags of microwave popcorn and many different brands of popcorn I predicted that all three brands will yield about the same amount of popped kernels per bag. I don??™t believe that there will be much difference in the amount of popcorn you will get from each bag. This will leave you to decide which brand to get based on taste rather that the price. Process of Data CollectionTotal Kernels(Trial 1)TotalKernels (Trial 2)Total Kernels (Trial 3)Total Kernels Popped (Trial 1)Total Kernels Popped (Trial 2)Total Kernels Popped (Trial 3)TotalKernels Unpopped (Trial 1)Total Kernels Unpopped (Trial 2)Total Kernels Unpopped (Trial 3)Average % Popped from 3 Trials Orville Redenbacher??™s362358360339282327237633888%Act II39539438836736437328301594%Pop Weaver3043114072802813842430239 2%Appropriate MethodsI conducted this experiment the way I did by using the same microwave so each bag was heated the exact same way for the exact same amount of time. I also used the big cookie sheet to put them on so it would be easier to count each kernel for accurate data.

I used a large bowl to put the popcorn in after counting it so I wouldn??™t accidently count a kernel twice and foul up the data. By doing three bags of each brand I was able to take the average of the three for a better estimate of the brand. Results ConclusionThe conclusion to my experiment (just taking into account kernels popped and not taste) shows that brand B (Act II) with 94% popped kernels and only 6% unpopped kernels was the best deal for your money. Brand A (Orville Redenbacher??™s) came in second with 92% popped kernels and 8% unpopped kernels. Brand C (Pop Weaver) came in a close third with 88% popped kernels and 12% unpopped kernels. Confirmation of HypothesisMy hypothesis was incorrect based on the results of the data collected.

I thought all popcorn was created equal as far as how much pops and doesn??™t pop. Based on my conclusion it is logical that there are brands of popcorn that have more kernels that pop than others. For this reason I have to accept that my hypothesis was false. Experimental Design as Key FactorExperimental design is a key factor in any experiment because if the conditions of the experiment are not duplicated exactly for each part of the experiment the results will not be accurate. If you use inaccurate data from a faulty experiment it is not a good representation of an outcome.

It is important to have a good designed experiment for the most accurate data possible so as to not mislead anyone who wants to use your studies for reference. ReplicationReplication in science is important because it checks for reliability. Research in any area needs to be repeated many times so an overall average can be obtained for it to be considered confirmed. This is important because it makes for more dependable data.

If someone wanted to replicate my experiment they would need to use the exact same watt of microwave and cook the popcorn for exactly the same amount of time in order to get the same results. By doing this it will give support to my data. Evaluation of ValidityAny factor that influences the results of the experiment in replication will make the evaluation less reliable.

I have designed this experiment so any influences that would change the results would be eliminated. After doing this experiment I was wondering if it is worth it to get the extra kernels if the taste of the popcorn is not of good quality. In my opinion I would rather spend a little more and get great flavor than just more quantity. Boyd, S.

, n. d., The Jawbreakers of the Popcorn Industry, retrieved from http://home. ptd. net/~sequoia1/Science/popcorn.

htmUnknown, n. d., King of Pop, procedure, para. 1, retrieved from http://www. gardenofpraise. com/sci993. htm