**I’m eating what? A Case Study on Nutrition and Chemical Additives**

*Written by Mrs. K Taylor*

**Part I :The Case**

It was lunchtime at Midvale High School and students were rushing to the various food lines in the cafeteria. Three friends, Steven, Ashley, and Josh were standing in the mixed lunch line together.

“Keep moving Ashley, you walk so slow and I always wind up getting Corny Crisps instead of Vegga Chips.” Steven said as he pushed past Ashley.

“Calm down Steven, it’s not like it makes any real difference. It’s all junk anyway.” Ashley retorts as she rolls her eyes.

“Vegga Chips are way better for you than the other stuff; they are baked and made from vegetables. Basketball season is coming up and I need to start eating right so I can start conditioning.” Steven replies as he grabs the Vegga Chips, a slice of pizza, chocolate milk, and a cereal bar from the food line. Josh looks at Steven’s food tray and laughs.

“Really dude? You think you are making healthy food choices there?” said Josh. He flicked the bag of Vegga Chips. “Why don’t you try reading the label? I wonder what kind of vegetables are in those Vegga Chips.” Before Steven can even put his food tray on the table, Ashley grabs the chips and starts to compare the ingredients of the Vegga Chips with her Corny Crisps.

“Vegga Chips have corn, brown rice flour, whole wheat…I guess since it has corn in it you could say it is made from vegetables.” Ashley said giggling. “But what is maltodextrin? It is in your chips and my Corny Crisps. I mean, your chips definitely have less ingredients than mine but I am not sure how much more healthy these are than the Corny Crisps.”

“Come on Ashley, are you serious? Look at the ingredient list for the Corny Crisps.” Josh takes the Corny Crisps bag from Ashley and starts reading. “Corn, vegetable oil, maltodextrin…all just like the Vegga Chips. However, check this out, dextrose, lactose, monosodium glutamate, whey, cheese, corn flour, tomato powder, spices. What is all of that and what are the spices.” Josh threw the chips back on the table. “Why don’t you just eat a salad and some chicken?”

“Well look at you Mr. Healthy, with that giant cup of dressing. What are the nutritional facts on that? I’m going to look the ingredients up on my phone.” Ashley pulled her phone out and started typing.

“It doesn’t matter what is in the dressing, I can do without it. The fact is the salad and chicken is healthier.” Josh said as he shoved a fork full of iceberg lettuce into his mouth.

“Hmmm…maltodextrin, monosodium glutamate, dried garlic, dried, onion, artificial flavors, lactic acid, citric acid, and spices! Hmmm. And by the way, iceberg lettuce has absolutely no nutritional value, and it is mostly water.” Ashley smirks. Steven chuckled as he chugged his chocolate milk. Steven then pulled a Red Taurus out of his bag and popped the top.

“Now that is a toxic soup, my Mom told me that professional athletes are telling kids not to drink that junk. And Ashley, I don’t care what is in the dressing, my lunch is still healthier.” Josh shoveled another mouthful of dressing soaked lettuce into his mouth.

Steven looked down at his food and said with a sad tone, “Well what am I supposed to eat? I’m starving and they don’t really have other food to offer here except salad and I without dressing I might as well go outside and grab a hand full of grass from the quad. How do you know all this stuff and how am I supposed to know that this isn’t good for me. I mean, if they serve it at school then it should be healthy, right? Let me look at this cereal bar I got this morning….” Steven fishes the bar out of his book back. “Hmmmm…….rice syrup, rice, potassium benzoate, propyl P Hydroxybenzonate, Sodium Sulphate, Sodium Bisulfite, citric acid 321, Carrageenan, Carmel E150……What is this thing?

“Wow,” Ashley chortled, “does it glow in the dark and power your car too?”

“I’m not feeling good about what I have eaten today. How can companies put all these chemicals in our food? That list sounds like something we made in Mrs. Taylor’s chemistry class. Maybe for extra credit Mrs. T will let us make some posters to tell people what is in the food we eat.” Josh was clearly in deep thought about what the project would look like.

“Dude, Mrs. T is going to love that idea; you know how she is always on us about looking at labels and making healthy decisions. Count me in!” Ashley said excitedly.

Steven perked up too, “I could use the extra credit, the molar conversion and periodicity exam killed my grade. Ashley and I have her class next hour, we’ll talk to her.”

All three got up, threw the food away, and picked up an apple on the way out of the cafeteria.

**Part I Questions:**

1. Do you agree that Josh’s lunch is healthier than Ashley or Steven’s lunch choices?
2. What does it mean when a manufacturer lists *spices*as an ingredient? How do you feel about the general name for these ingredients?
3. Why do manufacturers use the term spices?
4. What is monosodium glutamate? Why is it added to food and what does it do to the human body?
5. What is maltodextrose, dextrose, maltose, and lactose? What do these substances do to the body? Can they be harmful?
6. What is High Fructose Corn Syrup? Why is this additive so controversial?
7. Do the ingredients in Steven’s cereal bar pose any health risks? If they do pose a threat, in what ways?

**Type this assignment in a Word document and submit through Engrade.** Make sure you put your name ***and*** your partner’s name so you both get credit.

**Part II:**

It is the last period of the day, Ashley and Steven are the first students entering Mrs. Taylor’s Chemistry class. Mrs. Taylor greets them with a smile but also a puzzled look on her face.

“Well, good afternoon you two. What brings you to class…..so early?” Mrs. Taylor said slowly and hesitantly. She started to say *on time* but decided it would be better to keep comments positive.

Ashley was exuberant, she couldn’t wait for Steven to start taking and just started blurting out their idea. “We were eating at lunch and started looking at labels like you always tell us to and saw all this chemicals and junk in our food and we kinda freaked out and Steven was like what do we do and Josh was like let do an extra credit assignment for Mrs. T to get the word our and we were like yeah so can we do this it would be great for everybody and we could get extra credit and…..”

“Whoa Ashley,” Mrs. Taylor giggled, “Slow down, did you even take a breath there? What are you so worked up about? All I got was eating, food, chemicals, and extra credit.”

“The long version of all of that,” Steven started as he stared at Ashley, “is that we were eating lunch with Josh and started talking about food because I am starting to condition for sports. We started looking all of the stuff they put in our food and it is kind of scary that we don’t know what most of it is or if it is bad for us. We know that you are always telling us about the stuff they put in food and how we should be careful. We just think that if we start a little campaign to inform people of what is in common foods we eat here at school, it will be better for everybody. It would benefit us because we would learn more about food labels and we can earn extra credit….which I could really use.” Steven gave the Steve Erkel grin.

Mrs. Taylor thought about it for a minute and said, “This is a great idea, I think I will make this part of the next unit assignments. Everybody will pick an additive or chemical in a food that they eat regularly and will make a poster about it. Great idea! And since you three came up with the idea, I will let you earn extra credit by creating the exemplars for the project. While student are working on their projects, you three can work with Mr. Pulley to create a short video infomercial about food additives. How does that sound to you?”

“Perfect!” Steven and Ashley said at the same time.

**Part II: Project Design:**

**Task 1:** In order to help Steven, Ashley, and Joshua make better choices you and your partner are asked to act as nutritionists by looking at popular food choices and find the food additives that are most harmful to human health and list foods that contain these items and offer alternative food choices. Your team will develop a two-week meal plan based on a 2000 calorie a day diet. You will create a short presentation on PowerPoint or Prezi to share your information.

This project is due March 24, 2015 submitted on Engrade.

**Task 2:** For task 2, you will work with your partner to research one of the following food additives (or suggest one that you have found) and create a poster that highlights what the additive is, what is does to the body, why it is put into foods, and what foods have these additives. See the list and attached rubric for both projects. You will use Glogster to create this poster.

This project is due March 26th, 2015 submitted on Engrade.