

Food Myths Critical Thinking and Reading

Purpose

To critically read a student dialogue that contains various food myths/opinions and facts, and to be able to distinguish fact from fiction. Students will gain an appreciation for the facts and fiction concerning nutrition and culture.

Overview

This section requires students to read a series of statements made by students about the hazards and benefits of various foods. Then, students are required to:

1. Distinguish the “facts” from “opinions” in the dialogue.
2. Briefly summarize the facts in a short paragraph.
3. Based on the findings of their research, write an essay expressing their own views and conclusions drawn about the food, food-borne illness, and nutrition issues, using citations as necessary.

Time

Allocate one 2-hour session for tasks 1- 2 and assign the essay (task 3) as a homework assignment.

Key Concepts

Food myths and beliefs differ based on various factors including culture, ethnicity, social, economic and nutritional factors. Proponents of a food myth usually use a wide range of arguments they perceive as factual to support their myths and beliefs.

Skills

This section can enhance students’ critical reading, précis, or synthesis writing, essay, technical and scientific writing skills. It can also assist with the development of research, oral and written communication skills.

Materials

The handouts are the only materials needed. The answers can be made into transparencies for instructional purposes. Access to word processing software and the Internet would assist students with the preparation of the essay and other assignments.

Background

Food is essential to life. It is a reflection of various factors including people’s culture, history, socio-economic status and education. Foods are eaten primarily to provide the body with nutrients needed to sustain life. However, throughout history, food continues to be used as medicine, gifts, barter items, religious items, and even expressions of love in many societies. Food and nutritional science continue to make enormous progress with food analysis capabilities, healthy and safe food preparation and preservation techniques, and understanding the relationship between the nutrients and non-nutrients contained in foods and health. These

advances in technology and medicine have made a lot of information about food readily available so that healthy and safe eating practices can be adopted. Even so, the food myths that exist in various sectors of the population (e.g., various socio-economic status cultural or religious groups) are often not supported by scientific facts.

The following activity will allow students to explore a wide range of food myths and facts.

Procedure

The following Critical Reading activities can be done in groups or by individual students. Have students critically read the enclosed Food Myths Dialogue. Websites and other resources are available if students wish to explore these myths and facts further.

- Food Myths Dialogue: What's cooking? (see below) with Answers

1. For the Dialogue, review the text and **underline the facts** and bold or **highlight the opinions/myths**:

- a) The **facts** about food, food-borne illness, and nutrition issues
- b) The **opinions/myths** about food, food-borne illness, and nutrition

Share the facts and opinions by reading them out loud to the class.

2. Review what you have underlined and write a short paragraph of 4-5 sentences summarizing the facts you identified from the Dialogue.

3. Write an essay summarizing your beliefs (your opinion) about food, food-borne illness, and nutrition issues, incorporating facts and opinions from your Food Research. Use quotes and citations to justify your opinion. Share your opinion by reading the essay out loud to the class.

Additional Activities

Students can be asked to list various food myths that exist in their own families, communities and/or cultures, and discuss why these are myths and what are the relevant facts.

Interesting websites:

Food facts and trivia: <http://www.funtrivia.com/Food/Food.html>

Food Oddities and wonders: <http://members.aol.com/oddwonder/food.htm>

Follow Up Activities

Students can search for articles representing different points of view on food, food-borne illness, and nutrition, even from within their own communities. They can prepare their findings as newspaper articles for the School or local Newspaper.

Student Assessment

Give the following critical writing components to each student as a guide to their critical writing outputs:

- ❖ Distinguish between facts and opinions in the Student Dialogue on the food, food-borne illness, and nutrition.
- ❖ Briefly summarize these facts and opinions in a paragraph.
- ❖ Compare and contrast their own opinions on food, food-borne illness, and nutrition issues with facts from the Dialogue.
- ❖ Compose an essay with facts from the Dialogue, using citations to support facts listed in the essay.
- ❖ Practice reading this essay aloud in an articulate manner
- ❖ Be prepared to answer questions about contents of the essay.

Assign points for the following components of the critical writing products:

- ❖ Were the facts and opinions correctly identified and distinguished in each excerpt?
- ❖ Were these facts and opinions correctly and briefly summarized in a short paragraph for each excerpt?
- ❖ Were proper scientific terms used?
- ❖ Did the essay demonstrate a distinct point of view?
- ❖ Did the facts cited in the essay support this point of view?
- ❖ Did the essay include references/citations?
- ❖ Could the student answer questions from the audience about the facts and defend their points of view?

Food Myths Dialogue: “What’s Cooking?”

At Ambient High School, Ms. Nelson’s science class is engaged in a dialogue about facts and students’ their personal views on food and food safety issues. Underline the facts to differentiate them from the highlighted opinions.

Chris: “Everyone knows that it is best to eat fruit at the end of a meal for better digestion.”
I would like to begin by letting you know that fruit eaten after a meal may start to ferment, which may lead to bloating and gas. Fruit is sometimes better eaten alone and not with a meal.

Melody: “You should never eat after 9:00 p.m.”
It is better to have eaten at least three hours before you go to bed. However, but the problem usually lies in what you ate before you went to bed as opposed to when you ate. Meals that are too large may cause difficulty in sleeping.

Marjorie: “Eating red meat is not bad for you.”
Red meat contains important nutrients such as protein and minerals like iron but can also have high levels of fat, especially unhealthy saturated fats. Hence, adequacy, balance and moderation are key when foods choices are being made.

Pedro: “My grandmother told me to never eat more than two eggs a week, so I don’t.”
Poor eggs! They have such a bad reputation as a source of artery-clogging cholesterol. Although it is true, on average eggs contain more cholesterol than most foods (a large raw egg weighs about 50 g, provides about 70 kcals and has about 200 mg of cholesterol) The recommended total daily cholesterol intake is 300 mg. Hence, you should limit the amount of eggs that you eat especially if your cholesterol levels are high. Like grandma, the American Heart Association’s recommendation limiting egg consumption. The American Heart Association recommends not more than 4 eggs per week should be eaten. Despite its high cholesterol content, eggs are a valuable, relatively inexpensive and important source of protein and other important nutrients.

Lisa: “I hate to eat fruit. So since fruit juice is just as good as fresh fruit, I drink juice instead.”
Fruit juices have nutrients like Vitamin C and potassium just as fresh fruits do. However, some water-soluble vitamins, like vitamin C, may be lost when the liquid evaporates from juice. Also, the fiber content of the juice is substantially lower than that of the fruit. Fiber plays an important role in the diet. In addition to facilitating “bowel regularity,” it also helps to t foster weight control, lower blood cholesterol, prevents colon cancer, control diabetes, prevents and alleviates hemorrhoids and well as prevent diverticulosis). The typical American diet is low in fiber. Freshly squeezed fruit juice drunk immediately can be beneficial but fresh fruit is the most beneficial. In addition to fiber, Fruits contain flavonoids that act as antioxidants and are believed to reduce the risk of cancer and heart disease.

Michael: “You should drink only a small amount of water with your meal.”
Water is an essential, indispensable nutrient that makes up 60% of the body weight of adults and a slightly higher percentage in children. It is needed by the body to perform many of its important functions such as maintaining blood volume, transporting nutrients and waste around the body. To do this, the body needs to maintain the proper water balance between water taken in and water excreted. To support the body’s various water needs, it is recommended that a person drink 6-8 glasses of water per day. The foods we eat vary in their water content. Water content of fruits and vegetables may be as high as 90%.

Juan Carlos: "Since caffeine gives you energy, I drink two cups of Cuban coffee every morning to help me burn fat."

Energy gained from caffeinated beverages is short lived, usually consisting of "empty calories" from the sugar in the beverage that is quickly digested and absorbed. Caffeine is believed to improve endurance of athletes by stimulating the release of fats and slowing down the use of glycogen. However, caffeine is a stimulant that can be potentially harmful to the body. It can cause stomach upset, nervousness, irritability, headaches and diarrhea. Therefore the recommendation is for caffeine containing beverages to be used in moderation, if at all.

Gayl: "Food products with the 'no sugar added' label means that it contains only naturally occurring sugars, and does not necessarily have less sugar than products that don't have that on the label.'

The "no sugar added" label on a food simply means that the food contains the "naturally occurring" sugars in the food item, and additional sugars were not added to the product. However you must still read the label carefully to find out the natural sugar content of the food, which could be very high. Many consumers wrongly assume that "no sugar added" this means that the food item does not contain any sugar, which is a misnomer.

Michelle: "Warm milk does not help people to fall asleep."

Milk contains an essential amino acid called L-tryptophan. This amino acid is also used to make Serotonin, which acts as a chemical messenger, or neurotransmitter, in the central nervous system and appears to sleeping and waking. Levels of Serotonin in the brain can be increased by the ingestion of L-tryptophan, and this has been shown to make people sleepy.

Gus: "Mayonnaise is what makes chicken salad go bad."

Contrary to popular belief, mayonnaise is quite acidic which makes it difficult for bacteria to grow. When mayonnaise is added to chicken, tuna or potatoes, the acidity level drops, allowing harmful bacteria like staphylococcus to multiply.

Meg: "Swallowing chewing gum will not upset your stomach."

Chewing gum is for chewing not swallowing. Chewing sugarless gum can lead to abdominal pain, gas and diarrhea because it contains sorbitol (a sugar alcohol). Sugar alcohols found naturally in fruits or they may be produced commercially. They are sweet to taste but provide less kcals than regular sugar (2.6 kcals/g compared to 4 kcals/g for regular sugar) and are absorbed more slowly by the body and therefore do not enter the blood stream as quickly as sugar. So, even though products such as sugarless gums that contain sugar alcohols claim to be "sugar-free" in this case sugar free does not mean kcal free. Because of the unpleasant side effects such as gas etc, sugar alcohols are used less frequently than artificial sweeteners. Also, regulations require food labels to state "excess consumption may have a laxative effect." Since they do not contribute to dental caries, as bacteria in the mouth cannot metabolize them as quickly as sugar, they are used a lot in chewing gum, breath mints and other products that people keep in their mouths for a while. Sugar alcohols can therefore occupy a place in the diet but, again, moderation is the key.

Liang: "When you eat Chinese food you may be hungry in an hour after you have eaten."

The only reason one becomes hungry an hour after eating Chinese cuisine is because most of these meals contain foods high in carbohydrates (e.g., rice and vegetables) and water and relatively little protein. Protein is much more filling than rice and vegetables.

Tommy: "Eating beans may give you gas."

“Beans, beans...good for the heart. Beans, beans they make you...” Well you know the rest. Beans contain raffinose, a sugar that our bodies are unable to digest. The bacteria in the large intestine feed on this undigested carbohydrates producing gas as well as energy for themselves. Cabbage, broccoli and cauliflower contain also contain raffinose but less than beans.

LaToya: “Eating high-cholesterol meals do not raise your cholesterol level.”

Eating one high-cholesterol meal does not raise your blood-cholesterol level, however it may go up if you eat this way everyday. If you have been diagnosed with high blood cholesterol and/or high triglycerides you must be careful about what you eat by reducing consumption of cholesterol and saturated fat rich foods. Most of the cholesterol in the body does not come from foods but is made by the liver and perform important functions in the body such as making bile salts, sex hormones, vitamin D and cell membranes. To supply the body’s need for cholesterol, the liver makes 800 – 1500 mg of cholesterol per day. This amount is much more than is eaten by the average person each day.

Katelyn: “Pork is the other white meat.”

Pork is not the other white meat. The commercial should actually say that pork is the “pink meat.” Pork does, however, tend to be lean (i.e. Low fat content). The tenderloin and the loin are the leanest cuts of pork.

Ryan: “Eating candy does not give you cavities.”

According to the latest tooth fairy report, candy does not promote tooth decay. What causes tooth decay is the length of time food items are kept in the mouth. When food stays in the mouth for a longer period of time, the more time bacteria has to break the food down, which creates the acid that causes tooth decay. Many starchy foods, however, such as chips and cookies tend to hang around in the spaces between and on top of teeth for a long time. When you are unable to brush, it is recommended to chew on a piece of sugarless gum (remember not to swallow) for about ten to fifteen minutes which will help to remove those unwanted food particles lingering in your teeth.

Faye: “My mom cooks with extra virgin olive oil because it is less fattening than other oils.”

Ounce for ounce, fats and oils contain the same amount of calories. A teaspoon (5 g) of butter, corn oil or olive oil contains about 45 kcals. However, the composition of the oils may vary. Olive oil is high in monounsaturated fat, while butter and coconut oil have high levels of saturated fat and corn oil has high levels of polyunsaturated fats. Oils with high levels of monounsaturated and polyunsaturated fats are healthier than those with high levels of saturated fats. Please be reminded that the body uses saturated fat to make cholesterol.

Robert: “Sugar does not cause diabetes.”

Although sugar does not cause diabetes, carbohydrate intake (starch and sugar) is monitored once a diagnosis of diabetes mellitus is made. People with diabetes are unable to regulate their blood sugar because of problems with the production of a hormone, insulin, needed to regulate blood sugar levels.

Susie: “MSG (monosodium glutamate) does not occur naturally in foods. It is only there when you add flavoring products to your foods.”

MSG (Monosodium Glutamate) occurs naturally in foods such as tomatoes, mushrooms and cheese. However, in various cultures MSG, commonly marketed as Accent in the USA is added to a variety of foods and a food enhancer.

Caesar: "I won't gain weight because I only eat non-fat foods."

Some people feel that excess amounts of foods carrying the "non-fat" label means you can eat as much as you want without gaining weight. This is not true. It is important pay attention to the caloric contents of all the foods eaten as the body has to convert excess calories to fat irrespective of the source of the calories (i.e., whether the calories came from fat, protein, carbohydrate or alcohol).

Bill: "Some fats are good."

Olive oil has high levels of monounsaturated fats that are heart-healthier than saturated fats. "

Hilary: "Brown eggs are just as good as white eggs."

The only difference between brown eggs and white eggs is the color

Laura: "If it is in the grocery store, then it is okay."

Just because it is in the grocery store does not mean the food is necessarily fresh. You must pay attention to what you buy. Check for expiration dates on foods, check meats to see if they are exuding off-color fluids and are smelly, crispness of fresh vegetables and firmness of fruits.

George: "Since I eat only natural foods I eat all that I want, so therefore I don't have to worry about over eating."

It is great to eat natural foods provided attention is paid to the nutritional value as indicated on the Food Label.

Adrienne: "It is important to eat everything on your plate, that's what my uncle always told us."

The decision as to whether to eat everything served on a plate should be made based on the size of the plate, the actual foods represented on the plate and the serving sizes of the foods. The key is to make healthy food choices bearing in mind the dietary principles of adequacy, balance, kcalorie control, moderation and variety. Also, to prevent over-eating eat slowly so that the brain has time to get the message that you have eaten and are full. The key is to eat enough of a balanced meal so that you are full. Do not overeat to ensure that you clean your plate!

Renee: "Food-borne illnesses can occur from food prepared at home."

Wherever food is prepared, the potential to get food-borne illness occurs if appropriate food storage, handling and preparation techniques are not used.

Rachel: "No way, food prepared at home is much safer than restaurant food."

Statistically, food prepared in a restaurant tends to be much safer than food prepared at home. Food-borne illness at home is due largely to poor food handling. Most professional food handlers in restaurants have been trained to utilize safe food preparations and must follow strict guidelines.

Bruce: "You should not thaw out a turkey completely to room temperature before you cook it."

You should NEVER thaw out any poultry to room temperature. It is virtually impossible to ensure that raw poultry would be free from bacteria. Bacterial growth increases between 45 and 140 degrees Fahrenheit. If you leave a turkey, or any other poultry out at room temperature, bacteria will grow.

Rick: "My kitchen is always clean. I use a dishcloth to clean up everything after every meal."

Unless you replace the dishcloth every day with a new clean one, then you are spreading germs throughout your kitchen. This goes for sponges as well.

Sally: "Nuking food in the microwave does not always kill bacteria found in foods."

Microwaved food will sometimes have cold spots, which mean the food is not fully cooked, so therefore bacteria will thrive in those spots. While microwaving, it is important to rotate, stir and cover food with a perforated lid or plastic wrap.

Paige: "Just because the shell of an egg is not cracked does not mean that bacteria can not grow inside the unbroken egg."

Salmonella, a bacterium that causes food poisoning, can still grow inside of an unbroken egg.

Cameron: "A little mold won't hurt you. All you have to do is scrape it off with a knife, rinse off the food, and you are good to go."

A little mold may hurt you. The poison underneath the surface of the food item is part of the problem. There are certain instances when you can remove the mold, and the food is okay (such as on hard cheeses, salamis, firm fruits and vegetables). However, meats and poultry need to be discarded. Stay away from blue and green meat.

Pete: "Hard boiled eggs need to be refrigerated."

Although hardboiled eggs are cooked, they need to be refrigerated if they are not going to be eaten within two hours of when they were cooked.

Pierre: "My mom saves time by partially cooking meat and poultry ahead of time."

Meat and poultry must be fully cooked in order to destroy the bacteria.

Calvin: "It is okay to give kids milk when they have a cold. My grandmother gave us milk and nothing ever happened to us."

It was once believed that drinking milk when you had a cold made you produce excessive amounts of phlegm but this is not true. Unless you are actually allergic to milk, then milk will not be a problem.