

Lesson Plan

TEACHER COPY

FOOD and FACTORY

Examining the factory in your food

CURRICULUM EXPECTATIONS

Identify degree of food processing in food recalls. Discuss economic, cultural and nutritional impacts.

OBJECTIVES:

Students will:

- Reload or create a record of all foods eaten in one day.
- Identify the highly processed foods in the food recall and select less processed alternative food for each highly processed food
- Evaluate the economic, cultural and nutritional effects of consuming highly processed foods or less processed alternatives
- Compare the nutrient score of a set of highly processed foods with a less processed set of foods
- Discuss the advantages and disadvantages of processed foods for the average consumer

RESOURCES:

Print Materials:

- Student Handout



Software:

- FoodFocus software for nutrition education with the following guidelines enabled: "Choose Healthy Food" and "Choose Natural (little processed) Foods". (This can be accomplished by having the Setup file so configured or by having the students enabling those guidelines using File | Preferences | Guidelines accessed from the menu line.)

PROCEDURES/ACTIVITIES:

A. Food Recall

1. In FoodFocus, students load the food recall they created in the Eating Counts lesson plan. Alternatively, students can enter a new food recall as part of this assignment or use an existing food recall such as a Health Canada sample menu (e.g. HC_JAMES 45 YR MALE_FF42, etc)

B. Evaluate

1. Students list the ultra-processed foods which are identified by using "BySort | Guidelines | Eat Minimally Processed Foods" from the main menu, and select an alternative food for each ultra-processed food. The alternative food should be somewhat similar, not-ultra-processed and

preferably one which has a higher nutrient rating. Attributes of both the ultra-processed and the corresponding alternative foods are recorded by the student in the Student Handout sheet. Mass, energy content, economic factors (locally or regionally produced food; advertised), cultural factors (traditional, typically eaten alone) and nutritional factors (as determined from the "Choose Healthy Food" guideline) factors are compiled by the student.

2. Students calculate the fraction of their energy from ultra-processed foods and discuss various aspects of the advantages and disadvantages of processed foods (questions 1-7).
3. Students complete a table listing some ultra-processed example foods from different types of foods and alternative foods which are less processed or which score more highly on a nutritional guideline. The average nutritional scores of the ultra-processed foods and the alternative foods are calculated. Students discuss whether the average consumer would consider the less processed or healthier alternatives as satisfactory alternatives to the ultra-processed foods. (Questions 8-9).

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Student Handout

BE ACCURATE

Record all the foods you ate as well as the exact quantity!

A. RELOAD FOOD RECALL FOR ONE DAY



In a previous lesson, you entered the foods you consumed on a typical day and stored it as a file in FoodFocus. Reload that food list into FoodFocus (or create a new food recall).

Click on **LOAD FILE** under **FILE** to restore your data.



B. EVALUATE YOUR FOOD RECALL

Complete Student Handout #1. First, sort your food recall by degree of food processing.

Click on **EAT MINIMALLY PROCESSED FOODS** under **BY GUIDELINES** under **BY SORT** on the menu line.



Complete **Part A** of the Student Handout #1 as follows:

- a) Enter the name of each food in your food recall which is "ultra-processed". (Read the label at the bottom of the main screen as you select and highlight each food in your food list. Start from the bottom up as ultra-processed foods will be listed at the bottom of the food list after the "Eat Minimally Processed Foods" sort.)
- b) Enter the quantity of each food in grams and its energy content in kilocalories. (Right click on each food and then select the "Show Nutrient Data for this food" option. On the "Nutrient Analysis for One Food" window, ensure that the correct quantity is selected in the "How Much" area and that "Scientific Units" is selected in the "Display Mode" area.)
- c) Complete the Economic Impact columns noting if each food was substantially produced or processed in your Community or Region. Ask your teacher for a definition of Region as it may be a geographic area, your province or within Canada. (This column indicates the degree to which your food purchase is sending money out of economic zones of interest to you.)
- d) Complete the Economic Impact column noting whether each food is often advertised. (Foods which are advertised are more likely to be high profit margin foods and thus less likely to be cheap sources of good nutrition.)
- e) Complete the columns on "Cultural Impact". Mark the "Traditional" column as "yes" if someone in your family or community several generations ago may have eaten a similar food. Mark the "Eat Alone" column as "yes" when the food is convenient for consumption by a single person. This would be true for single serving ready-to-eat products but not true when typical preparation quantities and efforts would be more appropriate for a group meal people than for an individual.

- f) Complete the "Nutrition Impact" column by entering the colour of the "Choose Healthy Food" guideline for that food. (Right click on each food, select "Show Guidelines for this food" and note the colour of the "Choose Healthy Food" guideline.)
- g) Sum the energy values of the ultra-processed foods and enter it beside the "Ultra-Processed Energy Subtotal" label.
- h) Enter the "Total Energy All Foods in Recall" beside that label. (Click on Analysis in the menu line and "Scientific Units" in the "Display Mode" area of the "Nutrient Analysis Results for Food List" window and note the Food Energy value.)

Complete **Part B** of the Student Handout #1 by repeating the process above except for each ultra-processed food previously entered, select a similar quantity of a similar food but one which is not "ultra-processed". If you cannot find a "similar food", select an alternative food that you might have consumed instead and which was not ultra-processed. You acquire the data you require by checking out foods individually or by starting a new food list which contains these alternative non-ultra-processed foods.

1. Summarize the economic, cultural and nutrition impacts of the ultra-processed foods listed in Part A of Student Handout #1. To what extent are the criticisms that ultra-processed foods tend to export money out a community, be high in calories, be high profit margin (e.g. advertised), reduce traditional and family meals and be poor sources of nutrients applicable to your food recall?

2. Summarize the economic, cultural and nutrition impacts of the non-ultra-processed foods listed in Part B of Student Handout #1. Do you think these alternative non-ultra-processed foods are noticeably cheaper, better for community or family well-being or better nutritionally?

3. In Part A of Student Handout #1 what percentage of your food energy came from ultra-processed foods (% from Ultra-Processed Foods) ? _____

4. How difficult was it for you to find non-ultra-processed foods in Part B which were reasonably similar to the corresponding food in Part A?

5. Provide some examples of ultra-processed foods which are poor choices and provide the economic, cultural and/or nutritional basis for your evaluation.

6. Provide some examples of ultra-processed foods which may be acceptable choices from a nutritional perspective and which have convenience or other advantages which you value. Provide the economic, cultural and/or nutritional basis for your evaluation.

7. Some supporters of ultra-processed foods argue that, considering the average consumer's income, culinary skills, available culinary facilities, and time or food availability, it is necessary and even desirable for ultra-processed foods to be a significant portion of the average consumer's diet. Do you agree or disagree? Explain your reasoning.

8. Opponents of ultra-processed foods argue that such foods are formulated to be habit-forming and are significant contributors to an obesogenic environment (e.g. one which promotes excessive weight gain and thus, ill health). They argue that we should be choosing unprocessed or minimally processed foods and avoiding ultra-processed foods. Even if we are choosing a processed food, it makes sense to choose one with a healthier nutrient profile. Complete the following table by entering a processed or ultra-processed food and an alternative food which is less-processed and/or appears healthier. In the column marked “G”, insert a number to represent the colour based on the “Choose Healthy Food” guideline from the Nutrient Analysis for One Food, Guidelines window (e.g. Green=1, Amber=2, Red=3). For the rows in which the food type is blank, select a food type (as described under “Food by Type” on the menu line), and then complete the remaining columns. Calculate the average “G” column value (lower is better).

	Food Type(s)	Processed or Ultra-Processed Food	G	Alternative Food	G
1	Bread, Rolls, Buns	English muffin	2	Whole wheat homemade bread	1
2	Breakfast cereals	Quaker Instant Oatmeal Cinnamon	3	Weetabix Alpen no salt, no sugar	1
3	Breakfast cereals				
4	Breakfast cereals				
5	Biscuits... Muffins	Sweet roll, cinnamon, commercial	3	Oat bran banana muffin (AB Health)	1
6	Biscuits... Muffins				
7	Cookies & Granola Bars	Quaker Big Dippys ChocoChip GranolaBar	3	N.Valley Chewy ChocoChip GranolaBar	2
8	Cookies & Granola Bars				
9	Fruit	Fruit cocktail in light syrup	1	Fruit cocktail in juice	1
10	Fruit Juices/Drinks	Sunny D orange strawberry	3	Lemonade from concentrate	2
11	Fruit Juices/Drinks				
12	Milk Fluids/Beverages	Chocolate milk whole	3	Milk plain 2%	1
13	Milk Fluids/Beverages				
14	Yogourt	Yogourt Vanilla Balkan style 4-6%	3	Yogurt Greek style plain 2%	2
15	Peanuts/Nuts/Seeds	Peanut butter reduced fat	3	Peanut butter natural	1
16	Peanuts/Nuts/Seeds	Almonds oil-roasted salted	3		
17	Peanuts/Nuts/Seeds				
18	Fast Foods	Cheese pizza thin crust frozen cooked	3		
19	Fast Foods	Subway cold cuts white bread	3		
20	Fast Foods				
21	Other Combo Foods	Spaghetti in tomato sauce canned	3		
22	Other Combo Foods				
23	Popcorn/Chips/Snacks	Popcorn, microwave, butter flavour	3	Popcorn, air-popped, unsalted	1
24	Popcorn/Chips/Snacks	Tortilla chips Nacho cheese	3		
25	Popcorn/Chips/Snacks				
26	Beverages, non-alcoholic	Energy drink with fruit juice	3	Starbuck’s Smoothies banana choco 2%	2
27					
28					
29					
30					
		Average Score (lower is better)		Average Score (lower is better)	

9. Discuss whether the average consumer would accept the “alternative food” column as a satisfactory replacement. Comment on the average guideline score for the two food columns.

Part A: Complete the following table listing all foods in your food recall which were classified as “ultra-processed”:

	Food Name	Quantity (grams)	Energy (kcal)	Economic Impact		Cultural Impact		Nutrition Impact	
				Made In Your		Advertised?	Traditional?	Eat Alone?	Guideline Colour of “Choose Healthy Food”
				Region?	Community?				
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
Ultra-Processed Energy Subtotal									
Total Energy All Foods in Recall									
% from Ultra-Processed Foods									

Part B: Complete the following table replacing each of the foods above by a similar quantity of an alternative food which is not “ultra-processed”:

	Food Name	Quantity (grams)	Energy (kcal)	Economic Impact		Cultural Impact		Nutrition Impact	
				Made In Your		Advertised?	Traditional?	Eat Alone?	Guideline Colour of “Choose Healthy Food”
				Region?	Community?				
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
Non-Ultra-Processed Energy Subtotal									
Total Energy All Foods in Recall (same as in Part A above)									
% from Ultra-Processed Foods									