



Weighing Your Options

Middle School Food and Agricultural Literacy Curriculum

Precepts

- G. Physical Growth
- G1. Practice healthy eating habits.

National Standards

- FPP.03.01.06.a. – Explain the importance of food labeling to the consumer.
- NL-ENG.K-12.12 – Applying Language Skills
- NM-NUM.6-8.3 – Compute Fluently and Make Reasonable Estimates
- NS.5-8.6 – Science in Personal and Social Perspectives

Student Learning Objectives

- As a result of this **unit** the student will...
- Critique food label and claims
- As a result of this **lesson**, the student will ...
- Evaluate and research nutritional content of food products.

Content Outline

Objective 1. Evaluate and research nutritional content of food products.

- A. All Nutrition Label Facts are based upon a 2,000-calorie diet.
 - 1. This is the Daily Values (DV) intake per **serving** for each nutrient suggested by public health experts.
 - 2. The label also offers intake suggestions for a 2,500-calorie diet as well.
 - 3. Both of these suggested diets are displayed in the **footnote** of each label and do not change from product to product because it is dietary advice for all Americans.
 - a. The **footnote** must be on all foods unless the food package is too small to contain the **footnote**.
 - 4. Daily Values (DV) nutrient values in the **footnote** are noted as "Upper Limit" nutrients or "Lower Limit" nutrients.

Time

Instruction time for this lesson: 45 minutes.

Resources

Diet Information. (2006). Sugar in a daily diet. Retrieved February 10, 2010, from Diet Information.com. Web site: <http://www.diet-i.com/sugar-intake-in-daily-diet.htm>
United States Department of Health & Human Services. (2009). How to understand and use the nutrition facts label. Retrieved February 10, 2010, from the U.S. Food & Drug Administration. Web site: <http://www.fda.gov/Food/LabelingNutrition/ConsumerInformation/UCM078889.htm>

Tools, Equipment, and Supplies

- Computer/LCD projector or Overhead
- MS.FS.4.2.AS.A – One copy per student and one to project
- MS.FS.4.2.TM.A – Multiple copies to be placed around the classroom
- MS.FS.4.2.TM.B – Multiple copies to be placed around the classroom
- MS.FS.4.2.AS.B – One copy per student
- MS.FS.4.2.AS.C – One copy per teacher
- MS.FS.4.2.ASSESS.A – One copy per student

Key Terms

The following terms are presented in this lesson and appear in **bold italics**:

Serving

Percent Daily Value

Footnote

- a. Upper limit nutrients are those you should eat "less than" the suggested daily value for that nutrient. In other words, you should eat the suggested value or less for Fat, Saturated Fat, Cholesterol, and Sodium.
- b. Lower limit nutrients are those you should eat "more than" the suggested daily value for that nutrient. In other words, you should eat the suggested value or more for Total Carbohydrates and Dietary Fiber.

B. Percent Daily Values (%DV)

- 1. The right side of each label presents the Percentage Daily Value (%DV) of key nutrients for one **serving** of the packaged food.
 - a. The **Percent Daily Value** (%DV) is for the 2,000-calorie diet only.



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2. This reference allows the consumer see what percentage of the key nutrients the single **serving** of packaged food accounts for in a daily 2,000-calorie diet.
 - a. It also assists the consumer in determining if a **serving** of the packaged food is high or low in a nutrient.
 - b. A general rule of thumb is that if the food has a %DV of 5% or less it is low for a nutrient and a %DV greater than 20% would indicate it is high for the nutrient.

Interest Approach

In the interest approach below, the term "soda" has been placed in quotation marks throughout the script. Feel free to replace this term with what students typically refer to a caffeinated beverage in your region of the United States.

Hello class! It is important to be able to interpret food labels for promotion of a healthy diet. Be ready to get active and think critically today about the foods you eat!

However you say it, most of us have consumed "pop," "soda," or "Coke" at some point. When I say GO, pull out a piece of scrap paper and write down the average number of cans of "soda" you consume in one day and what kind of "soda" it is. When finished, give me a little wave then wait quietly for further directions. We will have 30 seconds to complete this task. What questions are there? GO!

Pause for students to record information.

Please begin to wrap those thoughts up. At this point, we will calculate how much sugar we consume a day just from "soda." Actually, the government has no official Recommended Daily Allowances (RDA) for sugar consumption; however, the USDA recommends we consume no more than 40 grams of sugar each day. That's 10 teaspoons of sugar from all of the food and drink we consume each day. Who will make a guess concerning the amount of sugar in the average 12-ounce can of "soda"? *Wait for several student responses.* Great! Would you believe that one can of "soda" contains 35-45 grams of sugar! That's right, one can of the sweet stuff contains approximately 10 teaspoons of sugar; a full day's worth! WOW!

When I say CALCULATE, use the number of cans of "soda" we each consume daily to determine how many grams of sugar you consume daily if each "soda" contained 40 grams of sugar. Also, how many teaspoons would that be? Finally, calculate how much sugar you consume over the USDA's recommendation of 40 grams. Who will repeat the three calculations we are about to make? Take two minutes to do the math! CALCULATE.

Pause for student work. Count down the time to keep students accountable to their task.

Pencils down in 3-2-1. Great work on your calculations! Well, how did we do? Why do we consume too much of a good thing?

Pause and allow for student answers.

Today we will continue to learn how to critically think about the foods we consume and how much is the correct amount for our bodies to remain healthy. Let's get ready to get busy!

Summary of Content and Teaching Strategies

Objective 1. Evaluate and research nutritional content of food products.

This first activity utilizes the Go Get It e-Moment® to allow students to discover information to be used later in the lesson. Generate a copy of **MS.FS.4.2.AS.A** for each student as well as one for you to project. Next, create multiple copies of **MS.FS.4.2.TM.A** and **MS.FS.4.2.TM.B** and tape them on the walls around the classroom (larger classes will need more copies). Students will travel to the sheets taped to the wall to complete the notes and key questions posed by **MS.FS.4.2.AS.A**. Music is a nice touch while students are moving around and recording information. During the activity you will monitor student progress and answer questions as needed.

Okay everyone, it is time to get up and get active! When I say GO & GET IT, we will travel around the classroom to the pieces of paper taped to the walls in order to discover information about today's lesson. Although there are multiple sheets of paper taped to the walls there are only two different sheets.



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I have provided multiple copies so everyone will have room to review them. Each of us will have an activity sheet that asks us to record notes about what we read at each piece of paper as well as answer key questions. After reading the information sheets, summarize the information in the appropriate note sections and answer the key questions. If assistance is needed I will be available to help. When complete, check the information on your sheet for accuracy with two classmates, then return to your seat and quietly await further directions. Move with purpose – only four minutes will be allowed for this activity. Who will describe what we are about to do?

Wait for a student to describe and then make needed clarifications. Distribute **MS.FS.4.2.AS.A**.

Okay everyone, GO & GET IT!

Move among students assisting where needed. Hold students accountable for gathering and summarizing the information needed. Extend time if needed for completion.

Nicely done, everyone! Let's check in on our information! What should we keep in mind concerning **Percent Daily Value** (%DV) and **serving** sizes?

Wait for student responses.

Correct, if we consume more than one **serving** we are also multiplying the %DV. Who will share something interesting about the **Footnote**?

Allow two or three student responses.

Finally, who will explain how the **Percent Daily Value** (%DV) works?

Wait for student responses.

This is great! We have gained new knowledge by moving around the room to collect it, now let's put it to work!

This activity challenges students to utilize the information learned in the activity above. Following the directions, distribute **MS.FS.4.2.AS.B** and have students work in pairs to analyze the posed questions.

When you receive this activity sheet, read the directions and analyze the questions posed. The sheet displays four nutrition fact labels from various foods.

Use the information we just learned from the last activity to answer the questions posed. Eight minutes will be used for this activity. Let's work with a partner. What questions are there? Okay, here are the labels and questions.

Distribute **MS.FS.4.2.AS.B** and assist students who may need a partner. Check in with students to determine their progress. Extend the completion time if necessary.

Okay teams; let's wrap this up! Move back to your seats and get ready for some questions.

Pose three to four questions based upon your observations while students were working.

Review/Summary

Super work today, everyone! It is so important that we understand how different foods accumulate calories during a day and how we should be aware of how many calories we are consuming in order to stay within a healthy diet. It is great to know that after today's lesson each of us is better able to make more intelligent decisions about the food we eat. Have a great day!



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Application

Extended classroom Activity:

Students take an unhealthy snack option and determine a new recipe to make a healthier snack option that imitates it. Students can attach a nutritional label verifying their success in creating a healthier option.

FFA Activity:

Students find the nutritional content of the meal or snack at the next FFA chapter meeting and find a healthier option.

SAE Activity:

Students research a product in which they poll their family's pantry to discover what food products are high in different kinds of nutritional content.

Evaluation

MS.FS.4.2.ASSESS.A

Answers to Evaluation

- 1) C
- 2) B
- 3) C
- 4) B
- 5) B



Nutrition Food Label Footnote and Percent Daily Value (%DV) Guide

Nutrition Facts

Saving Size 2 tortillas (51g)

Servings Per Container 6

Amount Per Serving

Calories 110

Calories from Fat 10

	% Daily value*
Total Fat 1g	2%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 30mg	1%
Total Carbohydrate 22g	7%
Dietary Fiber 2g	9%
sugars 0g	
Protein 2g	
Vitamin A 0%	Vitamin C 0%
Calcium 2%	Iron 4%

*Percent Daily Values are based on a 2, 000 calorie diet Your daily values may be higher or lower depending on your calorie needs;

	Calories,	2,000	2,500
Total Fat	Less than	85g	80g
Sgurated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
total Carbohydrate		30Dg	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

Serving Size

Serving Size Notes:

Key Question: What happens to %DV if more than one serving is consumed?

Percent Daily Value

The percentage of the suggested nutrient the food accounts for according to a 2,000-calorie diet.

Percent Daily Value Notes:

Key Question: How are the percentages used for each key nutrient? What percentage is considered low and high?

Footnote

Communicates the nutrient intake per serving for each nutrient suggested by public health experts.

Footnote Notes:

Key Question: What is meant by Upper and Lower Limits?

Image Source: http://www.nutridata.com/sample_nutrition_facts_formatted_label.asp



I. All Nutrition Label Facts are based upon a 2,000-calorie diet.

- A. This is the Daily Values (DV) intake per serving for each nutrient suggested by public health experts.**
- B. The label also offers intake suggestions for a 2,500-calorie diet as well.**
- C. Both of these suggested diets are displayed in the footnote of each label and do not change from product to product because it is dietary advice for all Americans.**
 - 1. The footnote must be on all foods unless the food package is too small to contain the footnote.
- D. Daily Values (DV) nutrient values in the footnote are noted as “Upper Limit” nutrients or “Lower Limit” nutrients.**
 - 1. Upper limit nutrients are those you should “less than” the suggested daily value for that nutrient. In other words, you should eat the suggested value or less for Fat, Saturated Fat, Cholesterol, and Sodium.
 - 2. Lower limit nutrients are those you should eat “more than” the suggested daily value for that nutrient. In other words, you should eat the suggested value or more for Total Carbohydrates and Dietary Fiber.



A. Percent Daily Values (%DV)

1. The right side of each label presents the Percentage Daily Value (%DV) of key nutrients for one **serving** of the packaged food.
 - a. The Percent Daily Value (%DV) is for the 2,000-calorie diet only.
2. This reference allows the consumer see what percentage of the key nutrients the single **serving** of packaged food accounts for in a daily 2,000-calorie diet.
 - a. It also assists the consumer in determining if a serving of the packaged food is high or low in a nutrient.
 - b. A general rule of thumb is that if the food has a %DV of 5% or less it is low for a nutrient and a %DV greater than 20% would indicate it is high for the nutrient.



Making Healthy Choices – Analyzing and Selecting Foods Based upon Label Data

Directions: Use the information in labels A, B, C, and D below to answer the questions at the bottom of the page.

Nutrition Facts	
Serving Size 1/12 of recipe 57g (57 g) Servings per container 12	
Amount Per Serving	
Calories 223	Calories from Fat 99
% Daily Value*	
Total Fat 11g	17%
Saturated Fat 7g	34%
Trans Fat 0g	
Cholesterol 78mg	26%
Sodium 148mg	6%
Total Carbohydrate 27g	9%
Dietary Fiber 1g	2%
Sugars 13g	
Protein 4g	
Vitamin A 7% • Vitamin C 0%	
Calcium 6% • Iron 3%	
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	
©www.NutritionData.com	

A

Nutrition Facts	
Serving Size 1 oz. (28g/About 21 pieces) Servings Per Container About 2	
Amount Per Serving	
Calories 170	Calories from Fat 110
% Daily Value*	
Total Fat 11g	17%
Saturated Fat 1.5g	8%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 250mg	10%
Total Carbohydrate 14g	5%
Dietary Fiber less than 1g	2%
Sugars 0g	
Protein 2g	
Vitamin A 2% • Vitamin C 0%	
Calcium 0% • Iron 4%	
Vitamin E 6% • Thiamin 4%	
Riboflavin 2% • Niacin 4%	
Vitamin B ₆ 2% • Phosphorus 2%	
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

B

Nutrition Facts	
Serving Size 1 cup, chopped 36g (36 g)	
Amount Per Serving	
Calories 11	Calories from Fat 1
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat	
Cholesterol 0mg	0%
Sodium 7mg	0%
Total Carbohydrate 2g	1%
Dietary Fiber 1g	5%
Sugars 0g	
Protein 1g	
Vitamin A 48% • Vitamin C 21%	
Calcium 5% • Iron 0%	
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

C

Nutrition Facts	
Serving Size 3 oz (85g) Servings Per Container 1	
Amount Per Serving	
Calories 180	Calories from Fat 90
% Daily Value*	
Total Fat 10g	15%
Saturated Fat 40g	20%
Trans Fat 0.5g	
Cholesterol 70mg	23%
Sodium 60mg	3%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars 0g	
Protein 22g	
Vitamin A 0% • Vitamin C 0%	
Calcium 2% • Iron 15%	
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

D

Questions		Answers
1.	How many servings of food "A" could be consumed before exceeding the DV for Cholesterol?	
2.	If you consumed one serving of foods "A, B & D" would you have exceeded the DV for Saturated Fat?	
3.	Which food could you consume the most of and not exceed DV for Sodium?	
4.	How many servings of food "B" would need to be consumed in order to achieve the minimum DV for Total Carbohydrates?	
5.	Which foods above and how many servings of each would you combine to create the healthiest 2,000-calorie diet for one day? Explain your answer.	

Note to FFA: Image sources:

A – <http://iamnotafoodie.com/wp-content/uploads/2008/06/nutrition-facts-label.jpg>

B – <http://pbskids.org/itsmylife/images/foodsmarts4.gif>

C – http://www.normanyoung.com/images/Collards_Nutrition_Facts_Label.gif

D – <http://www.ncpad.org/get/misc/label.png>



1. 3.85 Servings
2. No
3. Food C
4. 20 Servings
5. Answers will vary depending upon the combinations of foods used.



Name: _____

1. **Sugar is an example of a _____.**
 - a. Fat
 - b. Calorie
 - c. Carbohydrate
 - d. Starch
2. **Carbohydrates contribute to a higher calorie count, but fat does not.**
 - a. True
 - b. False
3. **The recommended value for carbohydrates is 300 grams. If a snack has 100 carbohydrates what is the percentage daily value?**
 - a. 10%
 - b. 25%
 - c. 33%
 - d. 47%
4. **The recommended value for fat is 65 grams. If a snack has 10 carbohydrates what is the percentage daily value?**
 - a. 2.5%
 - b. 6.5%
 - c. 65%
 - d. 25%
5. **%DV is calculated for a 2,500 calorie diet.**
 - a. True
 - b. False