

OVERVIEW

BIG IDEA

Food labels contain a wealth of information to help us make healthy diet choices.

OBJECTIVE

2.3 Analyze a food label to evaluate nutrition information.

AGENDA

- 1. Guess the Calories
- 2. Food Label Preview
- 3. 4 Components of Food Labels
- 4. Practice Food Label Analysis

HOMEWORK

Answer the questions about each of the food labels. Then find your favorite food at home and check out the label to see what you learn.

LESSON 2.3

Food Labels

SUMMARY:

This lesson provides a breakdown of the food label, an often misunderstood and underutilized tool for health literacy, by focusing on four components of the label: serving size, calories, percent daily values, and ingredient lists.

Students will warm up by guessing how many calories are contained in some common foods and burned during activities. They will complete a short reading and/or thinking activity for each of the four components of the label. They will practice putting all these parts together in the practice assessment at the end and complete more analysis of labels for homework.



UNIT 2: NUTRITION & FITNESS	LESSON 2.3
Food Labels	
PH2.3: Analyze a food label to evaluate nutrition information	
GUESS THE CALORIES: Answer each of the questions below with your	r best estimates.
How many calories are in 1. an apple?	
2. a slice of pizza?	
3. a scoop of ice cream?4. a cup of broccoli?	
a bagel?How many calories does your body use when you	
6. run a mile?	
7. walk a mile?	
8. laugh?	
The average person should intake calories everyday to maintain	their current weight.
Compare your estimates with a partner. For which questions were your estimates	nates furthest apart?
NEW	
Today we will dissect food labels, like the Nutrition Amount/serving %D	V* Amount/serving %DV*

analyzing four different components of the

food label. For each of the components

below, draw a line connecting it to it's

location on the food label:

• 3. Percent Daily Values 4. Ingredients

 1. Serving size 2. Calories

DO NOW:

Answers: these are all approximations

1. 110;

2. 375;

3. 200;

4. 40;

5. 230;

6. 125;

7. 90;

8. 2

(2000 calories; emphasize that this is the AVERAGE, so that means the majority will need more or less depending on age, body size, and activity level)

PERSONAL HEALTH 2

30% Total Carb. 24g

Dietary Fiber 1g 4%

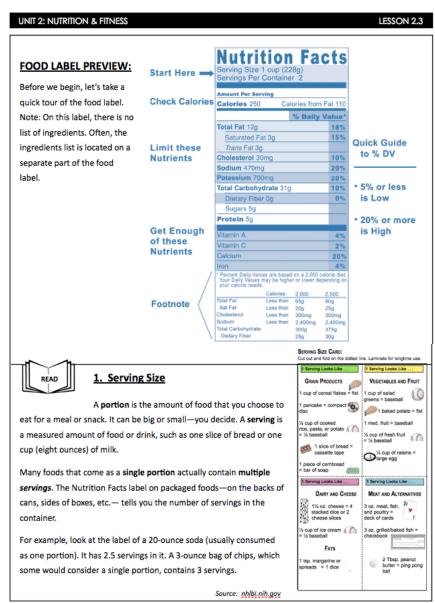
(249g) Sat. rat by Polyunsat. Fat 1.5g

Monounsat. Fat 2.5g

Fat Cal. 110
Percent Daily Values Cholest. 60mg 20% Protein 10g

Calories 250





Tap into students' background knowledge here. Also, connect to the 3 classes of nutrients. Have them identify where carbs, fats, and proteins are

To make the lesson more interactive, have some of these common objects on hand.



Lesson 2.3 Instructor Guide

UNIT 2: NUTRITION & FITNESS



Use the chart below to answer the questions that follow:

Item	Serving Size	Size of	Meal portion (if you don't snack)	Bonus
Grains: 6-11 servings per d	ay. Choose whole gr	ains!		
Whole Cooked Grains (brown rice, quinoa, barley)	1/2 cup	Billiard Ball	Up to 1 c. (size of your fist)	Organic
Dry Cereal (shredded oats or wheat, flakes)	1/2 cup	Billiard Ball	Up to 1 c. (size of your fist)	Organic, no sweetener
Bread (whole wheat)	1 oz. (1 small slice, 1/2 bagel, 1/2 bun)	Index card	2 small slices bread, 1 med. bagel, 1 bun	Organic
Fruits and Vegetables: 5-9	servings per day			
Raw fruit (or canned/frozen)	1/2 cup	Billiard Ball	Size of your fist	Organic, no
Dried fruit (apricots, raisins)	1/4 cup	Egg	Egg	spraying, pesticide-free,
Raw vegetables	1 cup	Your fist	Both your fists	integrated pest
Cooked veggies	1/2 cup	Billiard Ball	Size of your fist	management
Juice	6 oz.	Hockey puck	Hockey puck	100% juice
Protein: 2-3 servings per da	y	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Self of the self that	az
Meat & Tofu (cooked beef, poultry, fish, tofu)	3 oz.	Deck of cards	Deck of cards	Grass-fed, hormone free
Beans (lentils,legumes)	1/2 cup	Billiard Ball	Size of your fist	Organic
Nuts & Seeds (nut butters)	2 Tablespoons	Pinggong Ball	Pinggong Ball	Organic
Dairy: 2-3 servings per day				Kara Camanana
Cheese	1 oz.	A pair of dice	A pair of dice	Organic,
Milk (milk, yogurt, kefir)	1 cup	Baseball	Baseball	grass-fed, hormone fee

1.	What is the size of 1	serving of dry cereal?

2.	What is the size of	1 serving of bread?	? About how many servings of bread are in a typical sandwich?

- 3. How much is 1 serving of raw fruit? _____
- 4. What is the size of 1 serving of juice? ____
- How much is 1 serving of raw vegetables? _____ How much is 1 serving of cooked vegetables? _____ Why
 do you think those serving sizes are different? _____
- 6. What is the size of 1 serving of meat? _____ How many servings of meat are in a typical hamburger? ____
- 7. What is the maximum amount of milk a person should drink in 1 day, in cups? _____
- 8. What is the maximum amount of nuts a person should eat in 1 day, in tablespoons? _____

DISCUSS

What was most surprising to you about the true nature of serving sizes?

Do you follow these serving sizes? Why/why not? Which food was most surprising to you?

Why are the objects above given as examples of serving sizes?

Answers:

- 1. What is the size of 1 serving of dry cereal? ½ cup (billiard ball)
- 2. What is the size of 1 serving of bread? 1 oz (1 small slice, index card) About how many servings of bread are in a typical sandwich? 2
- 3. How much is 1 serving of raw fruit? ½ cup (billiard ball)
- 4. What is the size of 1 serving of juice? 6 oz (hockey puck)
- 5. How much is 1 serving of raw vegetables? 1 cup (fist) How much is 1 serving of cooked vegetables?1/2 cup (billard ball)
- 6. What is the size of 1 serving of meat? 3 oz (deck of cards) How many servings of meat are in a typical hamburger? 2
- 7. What is the maximum amount of milk a person should drink in 1 day, in cups? 3 cups
- 8. What is the maximum amount of nuts a person should eat in 1 day, in tablespoons? 6 tablespoons

LESSON 2.3

Lesson 2.3 Instructor Guide

UNIT 2: NUTRITION & FITNESS

UNIT 2: NUTRITION & FITNESS

LESSON 2.3



2. Calories

The energy stored in food is measured in terms of calories. Technically, 1 calorie is the amount of energy required to raise the temperature of 1 gram of water 1 degree centigrade. The calorie measure used commonly to discuss the energy content of food is actually a kilocalorie or 1000 real calories. This is the amount of energy required to raise 1 kilogram of water (about 2.2 pounds) 1 degree centigrade.

Different foods contain different amounts of energy -- which is why a small piece of chocolate can have many more calories than a similarly sized piece of lettuce. However, since calories are a measure of energy, there cannot be, as some diet books claim, different types of calories. A fat calorie has the same amount of energy as a protein or carbohydrate calorie.

A person's caloric need is determined using a variety of mathematical equations. Age, height, current weight, and desired weight are taken into account. Generally, people think of the average adult needing approximately 2,000 calories per day. However, since so many other factors influence this number, we use the chart below:

Source: http://www.nytimes.com/health/quides/nutrition/diet-colories/

Estimated amounts of calories needed to maintain energy balance for various gender and age groups at three different levels of physical activity. The estimates are rounded to the nearest 200 calories and were determined using the Institute of Medicine neurology.

Gender	Age (years)	Sedentaryb	Moderately Active ^c	Actived
Child	2-3	1,000	1,000-1,400	1,000-1,400
Female	4-8	1,200	1,400-1,600	1,400-1,800
	9-13	1,600	1,600-2,000	1,800-2,200
	14-18	1,800	2,000	2,400
	19-30	2,000	2,000-2,200	2,400
	31-50	1,800	2,000	2,200
	51+	1,600	1,800	2,000-2,200
Male	4-8	1,400	1,400-1,600	1,600-2,000
	9-13	1,800	1,800-2,200	2,000-2,600
	14-18	2,200	2,400-2,800	2,800-3,200
	19-30	2,400	2,600-2,800	3,000
	31-50	2,200	2,400-2,600	2,800-3,000
	51+	2,000	2,200-2,400	2,400-2,800

8 These levels are based on Estimated Energy Requirements (EER) from the institute of Medicine Detary Reference Intakes macronizines report, 2002, calculated by gender, age, and activity level for reference-sized individuals. "Reference size: As acteriment by U(M), is based on median height and weight for days up to age 18 years of age and median height and weight for that height to give a 8Ms of 21.5 for adult members 22.5 for adult members.

b Sedentary means a lifestyle that includes only the light physical activity associated with typical day-to-day life.

^c Moderately active means a lifestyle that includes physical activity equivalent to walking about 1.5 to 3 miles per day at 3 to 4 miles per hour, in addition to the light physical activity associated with typical day-to-day life

^d Active means a lifestyle that includes physical activity equivalent to walking mothan 3 miles per day at 3 to 4 miles per hour, in addition to the light physical activity associated with typical day-to-day life.



Use the chart to determine how many calories you need to maintain energy balance:

am a	year old	(8	gender)	who is	(activity

level) so I need approximately _____ calories per day.

Emphasize the importance of calories to maintaining healthy weight. The idea of calories may confuse students, so simplify by directing them to the idea of energy coming in to the body. Whatever is not used for normal metabolism or daily activity, will be stored.



UNIT 2: NUTRITION & FITNESS

LESSON 2.3



3. Percent Daily Values

The Percent Daily Value on the Nutrition Facts label is a guide to the nutrients in one serving of food. For example, if the label lists 15 percent for calcium, it means that one serving provides 15 percent of the calcium you need each day.

The Percent Daily Values are based on a 2,000-calorie diet for healthy adults. Even if your diet is higher or lower in calories, you can still use the Percent Daily Value as a guide. For example, the Percent Daily Value can help you determine whether a food is high or low in specific nutrients:

- 1 If a food has 5 percent or less of a nutrient, it's considered to be low in that nutrient.
- 2 If it has 20 percent or more, it's considered to be high in that nutrient.

Note that the Food and Drug Administration has not set a Daily Value for trans fat, and health experts recommend avoiding trans fat to lower your risk of cardiovascular disease. Similarly, there is no established Daily Value for sugar.

To get the most benefit from Percent Daily Values, use them to choose foods high in vitamins, minerals and fiber — and to limit foods high in fat, cholesterol and sodium.

Source: Mayo Clinic (Katherine Zeratsky, R.D., L.D.)



4. Ingredients

Answer the question using the two ingredients lists below:

- 1. What products do you think these ingredient lists are for?
- 2.What ingredients are present in these products in the largest quantity?
- 3.Are there any ingredients that you've never seen in real life before? List them here:
- 4. Would you recommend either of these products to a friend who is trying to maintain a nutritious diet? Why/ why not?
- 5. Which of these products do you think is the healthier choice? Why?
- 6. Where might your find nutrition information for foods without labels (produce, fast foods)?



Product #2:



Answers:

- 1. What products do you think these ingredient lists are for? Coke, OJ
- 2. What ingredients are present in these products in the largest quantity? Carbonated water, filtered water
- 3. Are there any ingredients that you've never seen in real life before? List them here:
- 4. Would you recommend either of these products to a friend who is trying to maintain a nutritious diet? Why/why not?
- 5. Which of these products do you think is the healthier choice? Why?
- 6. Where might your find nutrition information for foods without labels (produce, fast foods)? (can ask at store/restaurant, can go online)





You have learned a lot about food labels. Now put your knowledge to practice!

- 1. Which of the snack choices is the best source of Vitamin C?
- 2. Which of the snacks would you choose to help regulate your digestion? Why?
- 3. Which of the snacks would provide you with the 2nd highest amount of energy for working out? Why?
- 4. Which of the snacks would provide with the most muscle building power? Why?
- Order the snacks from least likely to give you high blood pressure, to most likely to give you high blood pressure.

 Snack #3: Appl

Calories 130

Total Fat 0g

Saturated Fat 0g Trans Fat 0g

Cholesterol 0mg Sodium 0mg

Potassium 260mg
Total Carbohydrate
Dietary Fiber 5g
Sugars 25g
Protein 1g
Vitamin A 2%
Calcium 2%

6. Which of the snacks would you recommend to a friend who is trying to adhere to a nutritious diet? Why?

tally Value*
1456
8%
0%
14%
4%
12%
6%
Calorie det lepending on 2.500
80g 25g 300mg 2,400mg 375g 30g
Protein 4
nola B Cts

Snack #1: Flamin'Hot Cheetos
Nutrition Facts

Apple	7813 - 08100-9040-0	11001
Facts	Snack #2: Chewy G Nutrition F Serving Size 1 Bar (24g)	
	Serving Size 1 Bar (24g) Servings Per Container 24	
ories from Fat 0	Amount Per Serving	
% Dailty	Calories 90 Calories	from Fat 2
Value**	Statement with	% Daily Valu
0%	Total Fat 2.5g	4
0%	Saturated Fat 1.5g	8
0%	Trans Fat 0g	-
0%	Cholesterol 5mg	2
7% 34g 11%	Sodium 60mg	3
20%	Total Carbohydrate 16g	5
2010	Dietary Fiber 0g	0'
Vitamin C 8%	Sugars 11g	
ron 2%	Vitamin A 4% · Vitan	nin C 0%
od on a 2,000	Calcium 2% · Iron 2	2%
may be higher slorie needs: Protein 4	*Percent Daily Values are based or dist. Your daily values may be high depending on your calone needs. Calones 2.00	er or lower
	Total Fat Less than 65g Saturated Fat Less than 25g Cholestonal Less than 35d Sodium Less than 240 Total Carbotydrate 350g Dietzy Fiber 25g	0mg 2,400s

Calories per gram: Fat 9 * Carbohydrate 4 * Protein 4

Questions & Answers:

- 1. Which of the snack choices is the best source of Vitamin C? **Apple**
- 2. Which of the snacks would you choose to help regulate your digestion? Why? **Apple** (fiber)
- 3. Which of the snacks would provide you with the 2nd highest amount of energy for working out? Why? **Chewy (carbs)**
- 4. Which of the snacks would provide with the most muscle building power? Why? **Cheetos** (protein)
- 5. Order the snacks from least likely to give you high blood pressure, to most likely to give you high blood pressure. **Cheetos, Chewy, apple (sodium)**
- 6. Which of the snacks would you recommend to a friend who is trying to adhere to a nutritious diet? Why? Apple (fiber, slow release of blood sugar, vitamins, few calories, etc.)



Answer the	questions	s below to analy:	ze the fo	llowing	three food la	abels:	
Nutrition F	acts						
Serving Size 1/2 cup (about		Nutrition Fa	cte		Nutrit	ion E	acte
Servings Per Container 8		Serving Size 1 cup			Serving Size 1		acis
Amount Per Serving		Servings Per Containe	r 9		Servings Per C	ontainer 6	
Calories 200 Calories fro		Amount Per Serving Calories 110	Calories fro	m Fat 15	Amount Per Serv	ing	1000000
Total Fat 14g	6 Daily Value*		% Da	aily Value*	Calories 520	Calories	from Fat 240
Saturated Fat 9g	45%	Total Fat 2g Saturated Fat 0g		3%	1, 1990		% Daily Value*
Trans Fat 0g	4070	Polyunsaturated Fat 0.5 Monounsaturated Fat 0.	g 5g		Total Fat 27g		41%
Cholesterol 55mg	18%	Cholesterol 0 mg		0% 3%	Saturated Fat	_	61%
Sodium 40mg	2%	Potassium 95mg Sodium 280 mg		12%	Cholesterol 2 Sodium 1110r	-	86% 46%
Total Carbohydrate 17g	6%	Total Carbohydrate Dietary Fiber 3g	22g	7% 11%	Total Carbon	•	10%
Dietary Fiber 1g	4%	Soluble Fiber 1g		1174	Dietary Fiber		5%
Sugars 14g		Insoluble Fiber 2g Sugars 1g			Sugars 1g	- A 250	
Protein 3g		Protein 3g	_	2 1001	Protein 39g	- 12 B	24.00
Vitamin A 10% • Vitami	n C 0%	Vitamin A 10% • Calcium 4% •	Vitamin (Vitamin A 20%		Vitamin C 4%
Calcium 10% • Iron 6		* Percent Daily Values ar	e based on a 2,	,000 calorie	Calcium 15%		Iron 25%
*Percent Daily Values are based on a	a 2,000 calorie	diet. Your values may be on your calorie needs:			*Percent Daily Valu	es are based on	a 2,000 calorie
diet. Your daily values may be higher depending on your calorie needs:		Calories:	2,000	2,500	diet. Your daily valu depending on your	calorie needs:	green, term
Calories: 2,000 Total Fat Less than 65g	2,500 80g	Total Fat Less than	65g	80g	Total Fat	Calories: 2, Less than 65	000 2,500 ig 80g
Saturated Fat Less than 20g Cholesterol Less than 300mg	25g	Sat Fat Less than Cholesterol Less than Sodium Less than	20g 300mg	25g 300mg	Saturated Fat Cholesterol	Less than 20 Less than 30	lg 25g X0mg 300mg
Sodium Less than 2,400 Total Carbohydrate 300g	na 2.400ma	Total Carbohydrate	2,400mg 300g	375g	Sodium Total Carbohydrate	30	400mg 2,400mg l0g 375g
Dietary Fiber 25g Calories per gram:	30g	Dietary Fiber Calories per gram:	25g	30g	Dietary Fiber Calories per gram:	26	ig 30g
Fat 9 • Carbohydrate 4 • I	Protein 4	Fat 9 • Carbohy	rdrate 4 •	Protein 4	Calories per gram: Fat 9 • Ca	arbohydrate 4 • i	Protein 4
Label #1		Label #	2		Lal	oel #3	
labels 1 and 2, how ma	nv cups a	are equal to one	serving?	Label	1:	Label 2	2:
labels I alla 2, llow lile	my cups c	are equal to one	Jei villg.	Luber		Luberz	
w many calories would ording to each label, or ing a 2,000 calorie diet	ne serving	g provides what	percent o	of recon	nmended to		ake for a pe
ich type of food (#1, #2							he followir
a. Vitamin A	b. F	iber	c. Ch	olestero	l	d. Su	ıgar
ler the foods from lowe	et to high	nest respectively	, (Note:	list the	foods as Lak	nel 1 2 o	r 2)
							3)
		_/					
		/		/			
Total Carb:		/					

Questions & Answers:

- 1. For labels 1 and 2, how many cups are equal to one serving? ½ cup, 1 cup
- **2.** How many calories would be in 1 cup of food according to label 1? 400
- 3. According to each label, one serving provides what percent of recommended total fat intake for a person eating a 2,000 calorie diet? 22%, 3%, 41%
- 4. Which type of food (#1, #2, or #3) provides the highest percent of daily value for each of the following? Vitamin A? #3 Fiber? #2 Cholesterol? #3 Sugar? #1
- 5. Order the foods from lowest to highest, respectively. Total Fat? 2,1,3 Total Carb? 1,2,3 Sugar? 2=3, 1 Sodium? 1,2,3
- **6.** Keeping in mind all of the information on the food label, order the foods from healthiest to least healthy. **#2**, **#1**, **#3**