Denver Urban Gardens School Garden and Nutrition Curriculum

Nutrition Detectives

Lesson

Goals

Students will learn how to read nutrition labels in order to make healthy food choices.

Objectives

Students will learn clues to look for healthy food when reading nutrition labels and will play a game where they practice reading labels. Students will prepare a quick snack.

Standards

Comprehensive Health: Personal & Physical Wellness in Health

GR.2-S.2-GLE.1
GR.3-S.2-GLE.1
GR.4-S.2-GLE.1
GR.5-S.2-GLE.1
GR.6-S.2-GLE.1 & GLE.4

Did you know?
In the past decade, as consumption of high fructose corn syrup has soared, diabetes has increased by a staggering 90% and 8% or more of Americans now have diabetes.

Background for Teachers

See information on nutrition labels at the end of this lesson.

Total Time – 60 minutes

Materials

- "The 5 Clues for Nutrition Detectives" (write these on the board)
- Copies of a sample nutrition label (end of lesson)
- Various packaged food products that may be commonly eaten by the class (cereals, chips, bread, crackers, juices, peanut butter, etc)—provide healthy and unhealthy examples
- Journals

Method

Introduction (10 minutes)

1. Begin by telling the class: *Who knows what detectives do? Today you are going to learn how to be nutrition detectives. You will learn special nutrition spy skills to help you find the truth about food and become clued-in to health. You are going to learn about 5 clues only nutrition detectives know that will enable you to know what foods are good for you and what foods are not. You may have been making clueless choices before, but you will be making clued-in choices from now on. A nutrition detective is clued-in to health and makes clued-in food choices, and leaves the clueless choices behind.*

2. Have the five clues up on the board and copies of a sample nutrition label and box of cereal for the class to look at while going over the five clues. See "The 5 Clues for Nutrition Detectives" at the end of the lesson.

3. Tell the class: *A nutrition detective knows how to see past food package deceptions and uses*

clues to get to the truth. Who knows what it means to say "don't judge a book by its cover?" (What something looks like on the outside may not be anything like what it is like on the inside.) *As you are going to see in the first clue used by a nutrition detective, sometimes you cannot judge a packaged food by its cover, either.*

Food labels can be tricky because they do not say, "This food has a lot of sugar, salt, and fat." They tend to use confusing names. For example, the worst kind of fat (trans fat) appears on ingredient lists as "partially hydrogenated oil." (Write on that board: trans fat = partially hydrogenated oil.) *Unlike some healthier types of fats that you can eat, such as olive oil, partially hydrogenated oil is an artificial kind of fat that is like poison to your body—it damages your blood vessels and heart. When you see this in a food, step away from the box and no one will get hurt.*

Does anyone know what high fructose corn syrup is? (High fructose corn syrup is a long and complicated name for added sugar. It is an artificial type of sugar.) *Its long, complicated name may fool people who will be eating food with lots of added sugar and not even know it. But you will be a nutrition detective, so* you *will not be fooled. High fructose corn syrup means added sugar.*

Finally, now that you know about artificial fat and artificial sugar, you will also want to look out for other artificial ingredients, like flavorings and colorings. Remember, the food you eat makes up the building blocks for who you are. Do you want to grow out of artificial ingredients?

Now that we know what to look out for, where do we find these clues? You have to be a good spy, and look everywhere to find the truth on a food package. The front of the package wants you to think that if you eat this food you will be a superstar or a famous athlete. Maybe you will be, but not because of this food. You will find the clues you need to get to the truth, the nutrition facts and ingredient list on the side.

Activity (30 minutes)

1. Divide the class into groups of 4-5 students each.

2. Each team is assigned 3-5 products (see the end of the lesson for ideas for products).

3. Some of the products are *clueless*, namely those that are highly processed, contain partially hydrogenated oils and high fructose corn syrup, have added salt and flavoring, and in the case of crackers, cereal and breads have 1g or less of fiber. Others are *clued-in*, namely those with more wholesome products containing no trans fats or high fructose corn syrup, more fiber, and less added salt, sugar and flavorings.

4. The students' mission is to apply the five clues they just learned to their products. Have them start to divide items into *clued-in* and *clueless* choices. While the students are dividing, offer comments, guidance, feedback and cheering on as needed to the different groups. Make the students feel that they are participating in an exciting mission.

5. After ten minutes, each team designates two delegates to represent their products and report their findings to the whole group, one team at a time. They each come up to place their *clued-in* and *clueless* items on two separate tables upfront, so that by the end, all the *clued-in* items

in all the categories are stacked together separately from all the *clueless* items. Make any necessary corrections and recognize each team for their successes.

Use this opportunity to highlight any deceitful wording on the front of the packages on the *clueless* table, and how, as great nutrition detectives, they knew better and were not fooled. Really emphasize how the products are marketed towards youth. Have the class point out what makes the item attractive to them (colors, games, cartoons, etc).

Snack & Conclusion (20 minutes)

1. Use the ingredients from the *clued-in* side for a quick healthy snack, such as peanut butter and jelly on whole grain bread or apple butter on whole grain crackers or hummus on whole grain pita, bread, etc. Or see attached recipe for a broccoli garden salad.

2. Have the class write in their journals about the experience of becoming a food detective and what surprised them the most.

Assessment Tools

- Participation
- Journals
- Team work

Suggested Products

- Cereals
    - Unhealthy: Trix, Froot Loops, Apple Jacks
    - Healthy: Cheerios, Wheat Chex
- Snacks
    - Unhealthy: Hot Cheetos, mini donuts, Jell-o, Pop Tarts, crackers
    - Healthy: Whole grain crackers, sugar-free peanut butter, no sugar added jelly/jam
- Breads
    - Unhealthy: White, “wheat”
    - Healthy: Whole grain bread, whole grain pitas
- Drinks
    - Unhealthy: Sunny-D
    - Healthy: 100% orange juice

Possible Modifications and Extensions

- There is a lot of information in this lesson. We often recommend breaking it into two lessons to make sure the students are grasping all of the concepts.
- Turn the above activity into a game, where the teams are timed.
- Consider giving each team a category of food (cereals, snacks, breads, drinks, etc) with unhealthy and healthy options.
- For younger groups of students (2nd and 3rd graders), consider putting them in pairs and giving each pair one food item to look at.

The 5 Clues for Nutrition Detectives

1. Don't be fooled by THE BIG LETTERS in the front of the package.
Look for the itty-bitty letters on the food label instead!

2. The first ingredient is always the biggest!
The ingredients are always listed in the order of quantity – the food is mostly made up of the ingredients that come first.

3. Avoid partially hydrogenated oil and high fructose corn syrup!

4. Avoid foods with a long ingredient list!
Look for shorter ingredient lists because these foods will be more nutritious.

5. Fiber is your friend, so look out for whole grain imposters!
Identify products made of whole grains (breads, cereals, cereal bars and crackers). High-fiber grain products have at least 2 grams of fiber per 100 calories. Products that have less fiber or do not say "whole grain" on the package are whole grain imposters.

Nutrition Labels

Nutrition labels provide basic information about the foods you eat, allowing a person to determine the amount of energy, fat & specific nutrients that are in a food. Important data includes:

- Serving Size: The amount of a food that an average person might eat.
- Serving Per Container: The number of servings that are in the package.
- Calories: The amount of energy per serving.
- Calories from Fat: The number of calories that come just from fat. To figure out the percent of calories from fat, divide the calories from fat by the total number of calories per serving. Example: calories from fat (30) divided by calories per serving (90) = 33%.
- % Daily Value: The numbers down the right side of the Nutrition Facts panel are the percentage of the recommended amount of energy and nutrients that are provided per serving. Values of 5% or less are considered low, from 5-19% are medium & 20% or higher are considered high.
- Cholesterol: A fat-like substance found only in animal products. Eating too much cholesterol can raise our risk of developing heart disease; try to consume no more than 300 milligrams per day.
- Sodium: Often called "salt". For some people, eating large amounts of sodium may lead to high blood pressure. Canned and processed foods often have higher amounts of sodium than unprocessed foods. Try to limit the amount of sodium in your diet to 2,400 milligrams per day. This is equal to about 2 teaspoons of salt daily.
- Total Carbohydrate: Carbohydrates are found in foods like bread, pasta, potatoes, fruits and vegetables. Total carbohydrates include dietary fiber, starches and sugars. Carbohydrates provide your body with the energy you need to move and be active. They also help keep your lungs, heart, and brain working.
- Dietary Fiber: Also called "roughage" and is found in the skins of fruits, vegetables, beans and whole grains. Fiber is the part of plants your body can't digest. Choosing foods high in fiber can help lower the risk for heart disease and cancer. To figure out how much fiber you need, add 5 to your age (for children and teenagers). For adults, aim for at least 25 grams of fiber daily.
- Sugars: Includes natural sugars, such as those found in fruits, juices and milk products, and added sugars, which are often found in candy and soda.
- Protein: Our bodies need this nutrient for growth, repair of body tissues, and for general maintenance. Animal products like meat, milk and eggs and vegetable products like beans, nuts and nut butters are rich sources.
- Vitamin A: Helps us see at night, is needed for bone and skin growth & helps our bodies fight disease. Dark orange & dark green fruits & vegetables are rich sources.
- Vitamin C: Helps the body to fight infections & heal wounds. May help prevent some diseases like cancer & heart disease. Oranges, kiwi fruit, tomatoes, broccoli, spinach & peppers are rich sources.
- Calcium: Promotes development of strong bones and teeth.
- Iron: Helps carry oxygen throughout the body.

Broccoli Garden Salad
Try this colorful salad for lunch or dinner. The carrots, apples and nonfat vanilla yogurt add sweetness while the peanuts add a nice crunch. Serving size 1 cup.

- 3 cups broccoli florets
- 1 cup grated carrots
- 1 cup sliced cauliflower
- 1 cup chopped apples
- 1/4 tsp ground cinnamon
- 1 cup nonfat light vanilla yogurt
- 1/4 cup roasted chopped peanuts (or pre-shelled sunflower seeds)
- 1/2 cup raisins
- 1/2 cup sliced green onions (optional)

Preparation (10 minutes): Toss all ingredients together in a large mixing bowl. Refrigerate until ready to serve, up to 6 hours. Serve chilled. You can garnish this lovely salad with a sprinkle of ground cinnamon and some green onions.

Sources

- Seagraves, Randy and Lisa Whittlesy. *Junior Master Gardener: Golden Ray Series—Health and Nutrition from the Garden.* Bryan, TX: Texas Cooperative Extension, 2001.
- Evers, Connie Liakos. *Fun with Brocc & Roll*. 24 Carrot Printing, 2007.
- Recipe: http://www.communicatingfoodforhealth.com

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Reading a Nutrition Label

Sample Macaroni and Cheese Label

1. Look at Servings per Container

2. Check Calories

3. Limit Fat, Cholesterol and Sodium

4. Get Enough of These Nutrients and Dietary Fiber

5. Footnote

Nutrition Facts

Serving Size 1 cup (228g)
Servings Per Container 2

Amount Per Serving:

Calories 250	Calories from Fat 110
	% Daily Value*
Total Fat 12g	18%
Saturated Fat 3g	15%
Trans Fat 3g	
Cholesterol 30mg	10%
Sodium 670mg	25%
Potassium 700mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	

Vitamin A	4%
Vitamin C	2%
Calcium	20%
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	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

Notes:

- Always remember to see how many servings there are per container. If you are eating more than one serving all of your other amounts will increase.
- For % Daily Value: 5% or less is Low, 20% or more is High.
- Sodium is another word for Salt.
- To find Dietary Fiber (also referred to as Fiber) go the far column. Follow the column down to the last percentage in the middle box. It is right below Total Carbohydrate.