Nutrition Label Detectives

4th Grade Lesson

Goal: Introduce the food label as a tool in choosing healthy meals and snacks

Objectives:

1. Students will be able to distinguish between serving size and portion size.
2. Students will be able to locate the ingredient list on a food label and determine which ingredient is most prevalent in the food.
3. Given a food label, students will be able to identify serving size, calories, and the value of another nutrient that the food supplies.

Materials Needed

- ☐ Can of food without label
- ☐ PowerPoint
- ☐ Student handouts
- ☐ Hidden Ingredients Student Handout
- ☐ Materials for supplemental activities
- ☐ Taste Test supplies (if tasting)
- ☐ Parent handout

Lesson

Talking Points	Materials/Activities/Notes
Mind Grabber	
• Who can tell me what in this can? Do we know? No! What is missing? That's right, the label! • A can (or any packaged food) needs to have a label so we know what is in it. Show a similar can with a label. • Today, we are going to learn how to be nutrition detectives. Your job as a nutrition detective is to determine if the food is a healthy or not so healthy choice. Will it help your body be healthy if you eat it? What nutrients does it give your body?	Hold up an unlabeled can (or picture) Show a labeled can (or picture)
Discussion A label tells us a lot about a food: 1. They tell us the name of the food that is inside. 2. They give us a list of the ingredients that the food is made from. 3. The nutrition facts section tells us information about what nutrients are in the food. **Nutrient Review** Earlier this year we learned about the nutrient superheroes. Nutrients are on the food label, so let's review them. • Nutrients are chemical substances that we get from foods, that our bodies need to stay alive and healthy. You can think about them as superheroes	Show picture of nutrient superheroes.

because they do so many amazing things in our bodies! We learned all about the Nutrient Super heroes last time I was here.

- Power Protein gives our bodies the building blocks to grow and to heal.
- Captain Carbohydrate gives our bodies energy that it needs to do everything.
- Fantastic Fat is essential for normal growth and development, we have to have fat to grow correctly
- VitaMan and Mighty Mineral provide our bodies with the vitamins and minerals it needs for so many things in our bodies… there are 34 different vitamins and minerals and they all do different and important things in the body such as helping build strong bones and teeth, helping your eyes see, and helping your heart beat normally.
- WonderWater gives our body the fluid it needs to clean itself out, to lubricate joints, and to keep our body temperature normal. We are 60% water and your brain in 70% water!

- Nutrition labels can tell us all about how much for these nutrients the food gives our body.

Nutrition Detective Introduction

- Raise your hand if you go to the grocery store with your family.
  - Keep your hands up if you pick out the foods you want to eat. What makes you buy a food? Is it the color of the food, the taste, or looking at the package?
- Sometimes it may be the claims on the packages…
  - Take a look at some of these packages. They look healthy, right? What on this package makes you think the food is healthy? What do the food manufacturers want that packaging to do?
  - These are called "claims." Claims are usually on the front of the package unlike the nutrition facts which are usually on the back or the side of the package. Claims are kind of like a commercial for the food – trying to get us to buy it. While claims may make us think a food is healthy, it doesn't always mean the food is good for our bodies.

Show pictures of packages of foods that have nutrition claims on them.

  - For example, these Froot Loops say that they are a good source of fiber and that they are made with whole grain. Do we know how much whole grain they are made of? It could be a tiny bit or it could be a large amount…most likely in this case it's a small amount. This is put on the front of the package to make us feel better about buying it…because we think it is healthier than it really is.

Show picture of Froot Loops box.

- Take a look at these Pop-Tarts. What claim do you see on these Pop-Tarts?
- How about the Kool-Aid? What claims do you see here?

Show picture of Pop-Tarts box.
Show picture of Kool-Aid package.

- Today, we are going to learn how to be nutrition detectives. Your job as a nutrition detective is to determine if the food is a healthy or not so healthy choice.
  - You can't look at the claims because we know that they don't give us the full truth – we must look at the FACTS, the nutrition facts --- and we find these on the box itself, all the information you need can be found on the nutrition facts panel, also called the food label.

Show picture of a nutrition facts label.

- There are 4 clues we are going to look at today to help us determine

whether or not a food is good for our bodies.

- Serving Size
- Calories
- Nutrients
- Ingredients

Clue #1: Serving Size

- What's the difference between serving size and portion size?
  - Serving size – Located at the top of the label, this is the amount of food that all the rest of the information on the label is about.
  - A portion size is how much of that food you would eat or serve yourself. Example: the serving size of pizza is one slice but you might serve yourself and eat two slices at dinner.
- Let's learn more about serving size, our first clue. Located at the top of the label, this is the amount of food that all the rest of the information on the label is about.
  - Take a look at the Cheerios Nutrition Label. What is the serving size? Yes – 1 cup. Let's look at this label for Smacks. Can anyone tell me the serving size? Yes- *¾ cup.* Does anyone usually eat more than 1 cup or ¾ cup of cereal? Probably…
  - What if you eat twice as much as the serving size? What do you need to do? You need to multiply all the rest of the information on the nutrition label by two because the numbers on the nutrition label are based on only one serving of the food.
- Servings per container- this tells how many servings are in the bag. If you eat exactly the serving size listed, this is how many servings you will get from the food package. Or, how many people you could serve following that serving size. My Cheerios label says there are 20 servings in the box so I could serve 20 of you 1 cup of Cheerios.
- Watch out and be a good nutrition detective. Make sure you always look at how many servings are in a bag, box or can of food BEFORE you look at the rest of the numbers. Depending on how much of the food you eat, you may have to double or triple the numbers on the label.
- Here's another serving size example. How big is a serving size of Takis?
  - Right, 13 pieces!
- How many servings per container are in this bag? It's the medium size bag we see a lot of you eating here at school.
  - 9 servings!
  - So this means that this bag is supposed to serve 9 people, or last you for 9 whole snacks!
- Has anyone eaten this whole bag at once? Or maybe over one day?
  - If you eat the whole bag, you need to multiple everything by 9
  - There would be 1350 calories (150 x 9); 72 grams of fat (8x9) and 22.5 (2.5x9) grams of saturated fat
  - That's WAY BIGGER than one serving!
- We need to keep in mind serving size when we're eating. It's okay to eat more than the serving size sometimes, but when we do we need to multiply everything on the label by the amount of servings we eat.

Display Cheerios label and Smacks label.

Optional: Have a volunteer or two come up to the front of the room and pour the amount of cereal s/he would normally eat. Emphasize that portion size can change from person to person (but serving size doesn't change.

Show Cheerios and Smacks nutrition labels, highlighting the serving size section.

Show picture of Takis package and food label.

Clue #2: Calories

- What is a Calorie? A calorie is just a unit of measure. We measure energy by calories. Just like we measure height by inches or weight by pounds. Inches and pounds are just the unit of measure you use. The calorie is the unit of measure we use for energy in food.

Point out calories on the nutrition labels

- Different foods contain different amounts of calories. Calories are neither good nor bad; they are just a measurement. We need calories every day to give our bodies the energy it needs to do everything- run, jump, play, think, digest the foods we eat, sleep, make our heart beat…everything!
    - Let's look at these cereals again.
    - How many calories are in a serving of Cheerios?
    - *100 calories*
    - How many calories are in a serving of Smack?
    - *100 calories*
    - And what if we ate 2 servings of either cereal? What would we have to do?
    - *We would have to multiply the calories by two. Two servings of either cereal would be 200 calories.*

Show Cheerios and Smacks nutrition labels.

Clue #3: Nutrients

- The next section contains our nutrients. We just reviewed our nutrient superheroes. Remember, each nutrient has a different job in the body.

Point out where the Nutrient Superheroes are found on the nutrition labels.

- Notice that fat (Fantastic Fat) is listed first, followed by carbohydrate (Captain Carbohydrate), and then protein (Power Protein). At the bottom, you will find Vitamins and Minerals (remember Vita Man and Mighty Mineral?)
    - There are some nutrients you want to get more of and some nutrients you want to get less of:
    - Pick foods lower in saturated and trans fat; and sodium.
    - You want to pick foods that have more fiber, vitamin A&C, iron and calcium.
    - There are over 30 vitamins and minerals that we need every day but only 4 are usually listed on the Nutrition Fact Label—Vitamin C, Vitamin A, Calcium and Iron. It was decided to list these 4 on the fact label because Americans tend to not get enough of them.
    - Let's practice looking for nutrients on the label. Of our two breakfast cereals, which food has:
        - More sugar? *Smacks*
        - More Iron? *Cheerios*
        - More vitamin C? *They have the same.*
- Here's another example, with nutrition fact labels from two popular snacks – baby carrots and Takis.

Show nutrition fact labels for baby carrots and Takis.

    - Let's look at the nutrients on both labels to compare.
        - Which one has more dietary fiber? *Carrots*
        - Which one has more vitamin A? *Carrots*
        - Which one has more saturated fat? *Takis*
        - Which one has more sodium? *Takis*
    - We see that Takis have more of the nutrients we don't want too much of (like saturated fat and sodium) and carrots have more of the healthy nutrients we want to eat more of (like vitamins,

minerals and fiber).
    - One nutrient never tells the whole story, that's why as nutrition detectives, we look at all the clues to get the whole picture.
- Dietary fiber is a nutrient that is good for our hearts and tummies. Let's practice finding it on the nutrition label. We see there's 2 grams.
    - Now, let's practice serving size again. If I ate two servings of baby carrots, how much dietary fiber would I eat?
    - Correct, 4g!

Show baby carrot nutrition label.

Clue #4: Ingredients list

- Before we talk about more about this clue, who can tell me what you think of when you hear the word ingredients?
- Correct, ingredients are everything we put into our food. Like you see here, you might think about ingredients when you are cooking something, like we see in this picture.
- The foods we buy at the grocery store also have ingredients. They are all listed on the food label so we know what's in the food we're buying.

- The ingredients list is usually at the bottom of the nutrition facts label.
    - The ingredient list tells you what was used to make the food that you are eating.
    - Reading the ingredient list is one of the best ways to tell you if a food is healthy. A lot of us skip over reading this list because it can be really long with a lot of words that we don't know. But the ingredients list tells us everything that the food manufacturer used to make that food. It's the best way to know exactly what's in our food

Show example of ingredients list.

- Ingredients in the ingredients list are listed on the label in order by weight. The ingredient that is found in the greatest amount in the food is listed first. This means that the first two or three ingredients are the ones that matter the most because there are a lot of these ingredients in the food. Ingredients at the bottom (or end) are only in the food in very tiny amounts.
- Going back to our Smacks and Cheerios example –
    - We can see that the Cheerios are mainly made of whole grain oats and cornstarch
    - We know whole grains are healthy (and we'll talk more about that later). Whole grain oats being the first and BIGGEST ingredient is a clue that this cereal is a healthy choice.
- Smacks are mainly made of sugar and wheat (likely not whole grain, because it doesn't have the word 'whole' in it).
- We know that eating too much sugar isn't good for us. Sugar being the first ingredient is a clue that this cereal is not the healthiest choice.

Show ingredients list for Cheerios and Smacks.

- Here's the snack comparison we mentioned earlier. What stands out to you here?
    - Yes, the ingredient list for Takis is much longer. That means more ingredients are used to make the food. Often, the longer an ingredient list is, the less healthy that food is for you.
    - Take a look at the Takis ingredient list. Are there any words you don't recognize?
    - What about the carrots? There's only one word and we all know that!

Show ingredients list for Takis and baby carrots.

• If there are ingredients you've never heard of, it may not be something you want to eat. • If you don't know what an ingredient is, you should ask someone at home or school. It's important to know what food you are putting in your body. • The ingredients list is also the place to look to see if our grains group foods are whole grain or not. Who can give me an example of a grains group food? • Right! Bread, rice, cereal, pasta, crackers, etc. • The best types of foods in the grains group are whole grains. All grain foods are made from seeds of either wheat, corn, oats or rice plants. There are 3 parts of every seed, the bran, the germ and the endosperm. The bran and the germ are the best parts of the seed for your body. Whole grain foods have all 3 parts of the seed. • You may have heard of white bread or white rice before – these are also called refined grains and they are made only of the endosperm. Refined grains don't have as many healthy nutrients as whole grains. • The ingredients list can tell us if a food is a whole grain or not. • To tell if a food is a whole grain or not, take a look at the first ingredient on the ingredients list. If the first ingredient has the word WHOLE—followed by a type of grain (wheat, corn, oats or rice) in it, then it is a whole grain. It has to be in the first ingredient. • Is this a whole grain? • Yes, because the first ingredient has the word WHOLE in it. • Is this a whole grain? • No. The first ingredient is unbleached enriched flour. The word WHOLE isn't there. • Let's take a look at Cheerios and Smacks. • Are Cheerios a whole grain? • Yes! What is the first ingredient? Yes – whole grain oats. • How about Smacks – are Smacks a whole grain? • No! The first ingredient is sugar…that means that it is mainly made up of sugar! The second ingredient is wheat, (a grain) but it does not say "Whole wheat". Therefore, we know they only used one part of the wheat seed, the endosperm, to make Smack cereal. • Who has solved the nutrition mystery…which breakfast cereal is the best choice? Cheerios! • How do we know? • It's important to always look at the whole picture, not just one nutrient. Some things we looked at today were - fiber, sugar, protein, vitamins & minerals, and the ingredient list (remember first is always BIGGEST). • *Optional: Include this slide about %DV if you have time* • Percent Daily Value is a fancy name for how much you need in a day—like a "budget" or "allowance". So if you have 100% you have all you need. • The bigger the number is, the more of your "allowance" one serving of the food puts in your body. • For some things you want the %DV to be low. For example, saturated fat and salt. • And for other things you want the %DV to be high. For example, dietary fiber, vitamins and minerals.	Show image of the three parts of a seed. Show a variety of ingredients lists from grains group food and asks students if they are a whole grain or not. Show Cheerios and Smacks ingredients lists again. Show %DV section of food labels and highlight key nutrients.

• The general guide is 5% Daily Value or less is considered a low source of the nutrient or you could say it doesn't give you a lot of that nutrient.
• 20% Daily Value or more is considered a high source of the nutrient or that food gives your body a lot of that nutrient.
• Let's do a quick quiz to review what we've learned today.
  • Raise your hand if you know the answers to the following questions.
• How many grams of PROTEIN is in one serving of these black beans?
  • Yes, 8 grams. Protein is always at the bottom of the nutrient section of the label.
• If I eat two servings of this food, how many calories am I eating? Yes, 200!
  • Each serving has 100 calories, so if we eat two servings, we have to multiply the calories by two.
• What are the 2 BIGGEST ingredients in this food?
  • Yes, water and high fructose corn syrup (this is another word for sugar)
  • The first is always the BIGGEST and the second is the next BIGGEST.
  • The ingredients toward the end of the list are smaller, with the last ingredient being the SMALLEST.	

Reflection

The food you tasted today doesn't have a food label or ingredients list. Using what you now know, create an ingredients list for this dish that you may find on the food label.	Students reflect in nutrition journals or as group work

Wrap-Up

• Ask students why foods have food labels (they tell us what the food is, what is in the food and what nutrients the food provides). • Ask students to name several clues you find on the food label in order to see if the food is a healthy or not so healthy choice (calories, serving size, ingredient list, nutrients)	

Challenge

• My challenge for you is to be a nutrition detective. ○ This week, at home or at lunch, compare two nutrition labels and choose the healthier food. Share what you learned with your family or friends so they can make healthier choices too.	

Taste Test Ideas

Ideas for students to make own ingredient list:

- Trail mix
- Salads or smoothies without too many ingredients:
  - Rainbow salad
  - Superhero smoothie
  - Kale salad

Small Group Activities (10-15 minute activities)

1. Nutrition Label Stations

This activity has self-directed partner stations set-up throughout the classroom. Each station has a food label, a question about the label and a physical activity associated with the answer. For example, students are asked to find the amount of calories in a food and then do one jumping jack for each calorie. You can customize the nutrients, food packages and physical activities based on what works best for your students.

Directions for nutrition label detective stations and station cards are in separate document.

2. Nutrition Label: Math Facts Jeopardy

Suggested Game Directions: Divide the class into 2 teams. Use a coin or other method to determine which team goes first. Ask each team to choose a points category (100, 200, 300, 400). Next, pick a question from that category (teacher's choice). If the team correctly answers the question, they will receive the corresponding points. The team with the most accumulated points wins the game!

Use Nutrition Label Math Facts Game cards for this Jeopardy game.

Nutrition Label: Math Facts (100 points)

1. If I ate 2 PopTarts, how much total fat would I be eating? *14 grams*
2. How many grams of dietary fiber are in one serving of oatmeal? *3*

Nutrition Label: Math Facts (200 points)

1. Which breakfast food gives your body more vitamin A per serving? *Oatmeal*
2. How many times can you find hidden sugar in PopTarts? *5 – brown sugar, molasses, corn syrup, dextrose, high fructose corn syrup*

Nutrition Label: Math Facts (300 points)

1. One serving of PopTarts contain how many more grams of sugar than one serving of oatmeal? *6*
2. How many ingredients are listed in one serving of oatmeal? *10*

Nutrition Label: Math Facts (400 points)

1. How many calories are in 2 servings of oatmeal? *320*
2. How many PopTarts would I have to eat in order to get the same amount of protein found in one serving of oatmeal? *2*

3. Portion Distortion Quiz

Ask students to guess how many calories are in fries, soda, and cookie that you would order today versus 20 years ago.

See Portion Distortion sheets.

Additional Activities

1. Energizer: Active Label Reading

Practice identifying the healthier and less healthy ingredients in a food. When a healthy ingredient is called out, students should either jump up and down or jog in place (these can include whole wheat, whole oats, whole rye, carrots, apples, skim milk, black beans, etc.). When a less healthy ingredient is called out, students should squat down (these can include sugar, corn syrup, hydrogenated oil, and salt).

2. Energizer: Guess the serving size

Place three "servings per container" posters around the room (1 serving, 2 servings, and 3 servings). Show the students labels of favorite foods. Have the students guess how many servings are in the package or container by standing under the corresponding sign. Then tell the students the correct number of servings per container (as listed on the nutrition label). Make sure you emphasize the need to multiply all the other numbers on the label by the number of servings if they ate the whole package.

3. Percent Daily Value Activity (better for advanced 4th grades/5th grades):

- Snack Mix:
  1 cup Quaker Oat Squares
  1 cup Cheerios
  1 cup Shredded wheat
  ½ cup Chocolate Chips
  ½ cup Raisins
- Put small serving (about 1/3 cup) in a snack bags making sure that at least one of each item is represented.
- Using the Worksheet "What is the Percent Daily Value" help the students determine what percent of what they need is provided by their snack bag. What happens if they were to eat two bags of the same mix?
- NOTE: Students will probably need calculators for this activity.

4. Ride the Food Label Game with a Talking Food Label (great with smartboards):
   http://www.nourishinteractive.com/kids/healthy-games/7-ride-the-food-label-game-nutrient-information

Student Handouts

- Read It Before You Eat It
- Snack Machine Snacks Handout
- What's the Percent Daily Value

Parent Handouts

- Today in Nutrition Class…Food Labels (English and Spanish

Lesson Roadmap

- Mindgrabber
- Nutrition Label Discussion
- Reflection, Wrap-Up, Challenge
- Taste test and/or optional activities
- Distribute student and parent handouts

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