The Job of a Nutrient

Grade Band: **K-2**

Student Objectives:

- Explain what a nutrient is
- Be introduced to different types of nutrients
- Learn how different nutrients help the body in different ways
- Write sentences that explain information about one or more nutrients
- Locate information about different nutrients on a Nutrition Facts label

Materials:

- Plant seeds (one per student)
- Picture of a plant cycle (roots, stem, seed, water, plant)
- Nutrient Matching Cards (cut into cards)
- Student Activity Sheet: The Job of Nutrients
- Nutrient Mystery Cards (cut into cards, one per group)
- Art materials, magazines with food pictures, glue, scissors, blank poster paper
- Sample Nutrition Facts labels

Suggested Time Frame: 2-3 class periods (based on 45-minute intervals)

Instant Expert:

According to the Centers for Disease Control and Prevention (CDC), **health literacy** is defined as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make healthy choices, to think about and practice health-enhancing skills, to say kind words, and to learn about feelings and how to express them."

An important foundation of helping children become health-literate is teaching them about **wellness.** Wellness is more than just being healthy. It is the active process of becoming aware of and making choices toward a healthy and fulfilling life.

In the first set of lessons, students learned about different types of wellness. One of those was **physical wellness.** Physical wellness is wellness related to our bodies. This includes taking care of our bodies, being physically active, having good personal hygiene, having healthy eating patterns and nutrient intake, and being safe.

In the previous lesson, students were introduced to different parts of the healthy eating pattern puzzle such as balance, variety and serving size. Another part of that puzzle is knowing about nutrients in what we eat and drink. This lesson begins to introduce students to what a nutrient is, why nutrients are important, and the jobs that different nutrients have in our bodies. It is most important that young children understand that different foods provide different nutrients that can help them stay healthy, another reason to maintain balance and variety. Specifically, they will be introduced to Vitamin A, Vitamin C, calcium, carbohydrates, fat, fiber, and Iron. For specific information about these nutrients, including nutrients to encourage and limit, go to www.choosemyplate.gov/MyPlate. For information about other nutrients and key dietary recommendations, go to the Dietary Guidelines 2015-2020, http://health.gov/dietaryguidelines or to USDA's MyPlate at www.choosemyplate.gov.

To help reinforce the real-world connection to nutrients in their foods, students will be introduced to a Nutrition Facts label. For information and resources to help children understand Nutrition Facts labels, go to www.fda.gov/Food/IngredientsPackagingLabeling/LabelingNutrition/ucm20026097.htm.

Note: As always, you will want to be sensitive to individual students' unique situations and follow your school's or district's policy when it comes to the collection of personal information related to minors. At this age, students' food choices are often most influenced by their parents and by what is available in their homes and schools. The "family connection" activity at the end of this lesson offers an opportunity to extend what is learned at home.

Additional Resources

- Centers for Disease Control and Prevention- Body and Mind!
  - http://www.cdc.gov/bam/nutrition/index.html
- USDA ChooseMyPlate- Eating healthier and feeling better using the Nutrition Facts Label
  - http://www.choosemyplate.gov/sites/default/files/sites/default/files/images/NutritionFactsLabel.pdf
- USDA ChooseMyPlate
  - http://www.choosemyplate.gov
- USDA ChooseMyPlate Games
  - http://www.choosemyplate.gov/games
- ChooseMyPlate Nutrient-Density
  - http://www.choosemyplate.gov/nutrition-nutrient-density
- USDA Super Tracker
  - https://www.supertracker.usda.gov/foodtracker.aspx

- USDA Dietary Guidelines for Americans 2015-2020
  http://health.gov/dietaryguidelines/2015/guidelines/executive-summary/

Procedure:

Session 1: Plant and feed your seeds. Food nourishes the body.

1. Give each student a plant seed. Ask students what is needed to turn the seed into a growing, healthy plant. Student responses may include planting it in soil, watering the plant. Show students a picture of a plant, roots, stem, and leaves to show how a seed grows into a plant.

2. Ask students to think about how they are just like that seed. Guide students to answer that they start out small just like that seed and they need food and water to grow and be healthy.

3. Write the word, "nutrient" on the board. Ask students if they have ever heard this word and, if so, what they think it means. Explain that nutrients are tiny parts in food that help us move, play, grow, and think. Nutrients have specific jobs to keep the body healthy. Plants get *their* nutrients from soil. We get *ours* from what we eat and drink.

4. Poll students to see if they think that all foods have the same nutrients. Explain that the same nutrients can be in different foods but usually in different amounts. And some foods have different nutrients than other foods. That is another reason why it is important to have a variety of foods from each group and balance of all the different food groups (fruits, vegetable, grains, proteins, and dairy).

5. Tell students that today they are going to learn about different kinds of nutrients and their jobs in helping us grow and stay healthy. First, it's time to play a matching game. Distribute the Nutrient Matching Cards to 18 different students. (If you have fewer students, you can remove the food group cards.) Explain that eight of them have pictures of foods, eight of them have the food groups that match those foods, and eight of them have the names of nutrients that those foods have lots of! Direct them to do the following:
   - Have all students with pictures of foods stand.
   - Then, have all students with pictures of food groups stand. Challenge them to find their matches. Note that some food groups are included more than once and that oil is also included.

- Invite students who are not part of those matches to confirm that all of the matches are correct.
- Have all students with the names of nutrients stand. You may need to read the names of each nutrient with students. One at a time, give hints that help to guide which nutrients go with which food/food groups pairs.
- Note: For younger students, you can color code all cards ahead of time.

6. Once students have formed their nutrient groups, distribute the "Job of a Nutrient" student activity sheet. Guide them to find their nutrient on the page and read about other foods that have a lot of their nutrient. Then challenge them to write two true sentences about their nutrient. Sentence examples: Papayas have Vitamin C. Vitamin C helps our hearts stay healthy. Eating papayas can help our heart stay healthy. Many fruits have Vitamin C. Many vegetables have Vitamin C, too.

7. Invite each group to share its sentences and have other students give thumbs up if they agree that the sentence is true.

8. In closing out the session, ask students: Why is it important to eat a balance of foods with different nutrients?

Session 2: Clue - It's a Mystery!

1. Tell students that you are thinking of a food and you want to see if they can guess what it is. Give them the following clues:

   I am yellow
   I am a fruit
   I have lots of Vitamin C
   I am sometimes sour
   Answer: I am a lemon!

   (Challenge students to remember what part of our bodies that Vitamin C helps.)

2. Divide students into small groups. Provide each small group a set of the Nutrient Mystery cards. Tell students that each card has a mystery, just like the one that you read above. They should read each card and then write the name or draw a picture of the food on the other side. Each student should take turns reading the clue cards to their group members. To accommodate early and emerging readers, the teacher can read the clue card and the student can write the food or draw a picture. Go over the answers as a class. Note that an answer sheet is also provided with this lesson.

3. Extension: Using the blank card or an index card if more space is needed, challenge students to create their own clue cards. If they don't know what nutrients are in a certain food, they can refer back to the Job of a Nutrient activity sheet. You can also help them learn more about specific nutrients in different foods at the USDA's National Nutrient database at https://ndb.nal.usda.gov/ndb/search to search for the nutrients in different foods. When students are finished, invite them to swap cards with classmates and try to guess each other's clues.

4. Finally, show students a sample Nutrition Facts label or a reproduction of a label from any food container. Ask students to raise their hands if they have seen a label like this before and where they can find one. Explain that all foods that come in a package, can, or box include a label that tells us lots of information including what nutrients are in the food and how much.

5. Invite students to apply what they have learned about nutrients by trying to find information about them on an actual Nutrition Facts label. Use the following prompts to find the nutrients highlighted in the previous sessions.
    - Eye spy Vitamin A. Guide students to point to where they spy Vitamin A on the nutrition facts label. Ask, "How does Vitamin A help the body?"
    - Eye spy Vitamin C. Guide students to point to where they spy Vitamin C on the nutrition facts label. Ask, "How does Vitamin C help the body?"
    - Eye spy Protein. Guide students to point to where they spy Protein on the nutrition facts label. Ask, "How does Protein help the body?"
    - Eye spy Carbohydrates. Guide students to point to where they spy Carbohydrates on the nutrition facts label. Ask, "How does Carbohydrates help the body?"
    - Eye spy Calcium. Guide students to point to where they spy Calcium on the nutrition facts label. Ask, "How does Calcium help the body?"
    - Eye spy Iron. Guide students to point to where they spy Iron on the nutrition facts label. Ask, "How does Iron help the body?"
    - Eye spy Fiber. Guide students to point to where they spy Fiber on the nutrition facts label. Ask, "How does Fiber help the body?"
    - Eye spy Fat. Guide students to point to where they spy Fat on the nutrition facts label. Ask, "How does Fat help the body?"

6. Ask students what else their eyes spy on the Nutrition Facts labels.

7. Finally, ask each student to share one thing they have learned about nutrients.

You Decide: *This feature helps to reinforce decision-making with students and can be integrated into the lesson or serve as an extension.*

Right now, students' food choices may be primarily influenced by their parents, caregivers, and school cafeteria staff. But, as they get older, they will be able to make more food choices for themselves. Invite each student to write and illustrate a sentence that explains how knowing about nutrients could help them make food choices that contribute to their good health.

Family Connection:

Invite family members to play Eye Spy using Nutrition Facts labels from their own refrigerators or pantries.

For other tools to extend learning outside of the classroom, refer to the School-to-Home activities on TogetherCounts.com. Begin these activities together at school and then encourage students to continue them with their families.

Community Connection:

Many children don't get to make choices about the foods they eat because they don't have the money, resources, or support to choose a healthy, balanced diet. Have students organize a food drive to donate nutrient-rich foods to a local shelter.

Standards Correlations:

National Health Education Standards

- Students will comprehend concepts related to health promotion and disease prevention to enhance health.
- Students will demonstrate the ability to access valid information, products, and services to enhance health.
- Students will demonstrate the ability to advocate for personal, family, and community health.

SHAPE America, National Physical Education Standards

- Recognizes the "good health balance" of good nutrition with physical activity.

Common Core State Standards for English Language Arts

- Participate in collaborative conversations with diverse partners about grade level topics and texts with peers and adults in small and larger groups.

- Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.
- Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
- With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- Distinguish between information provided by pictures or other illustrations and information provided by words in text.
- Determine or clarify the meaning of unknown and multiple-meaning words and phrases.

** Source: http://www.choosemyplate.gov/snapshot-2015-2020-dietary-guidelines-americans

Student Activity Sheet: Nutrient Matching Cards

(Added header to matching)

Food	Food Group	Nutrient
Orange	Fruit	Vitamin C
Cereal	Grain	Carbohydrate
Milk	Dairy	Calcium
Carrots	Vegetable	Vitamin A
Vegetable Oil	Oil	Fat
Eggs	Protein	Protein
Spinach	Vegetable	Iron
Black Beans	Protein	Fiber

Student Activity Sheet: The Job of Nutrients

Nutrient	How it Helps our Body	Sample Foods
Vitamin C	Helps our heart stay healthy and helps our immune system	Oranges Limes Grapefruit Papayas Kale Broccoli Plantains Green peppers
Vitamin A	Helps our eyes work better	Broccoli Red peppers Sweet potatoes Cantaloupe Peaches Kale Carrots
Calcium	Helps to make our bones and teeth strong	Milk Cheese Egg Yogurt Tofu
Carbohydrates	Helps to give our body energy	Bread Cereals Potatoes Rice Plantains Corn
Fiber	Helps us digest our food	Bran cereal Black Beans Lima Beans Raspberries Blueberries Peas Spinach

		Almonds Peanuts Guava
Fat	Limited amounts of fat in the diet help our skin and organs and are a source of energy	Avocado Cheese Dark Chocolate Eggs Fish (salmon, tuna, sardines, etc.) Nuts Oils (Olive Oil, Coconut Oil)
Iron	Helps make red blood cells	Red meat Pork Chicken Seafood Beans Spinach Dried fruit-raisins
Protein	Helps to build our muscles	Fish Chicken Beef Milk Cheese Eggs Yogurt

Write two sentences about your nutrient. Be sure to include the nutrient name, food group, and how the nutrient helps the body:

1.

2.

Student Activity Sheet: Nutrient Mystery Cards

I am green. I help the body see well because I have Vitamin A. I also have Vitamin C to help the body have healthy skin and blood. I am a vegetable. I look like a small tree. What am I?	I am yellow. I have Vitamin C. Vitamin C helps the blood in the body. Vitamin C helps the body's skin. I am a fruit. I grow on a tree. What am I?
I am white. I have calcium. Drinking me can help your body have strong bones and teeth. I come from a cow. What am I?	I am brown and sometimes white. I am a grain. One food I can help make is a peanut butter and jelly sandwich. I have carbohydrates. I give the body energy to run and play. What am I?
I am orange. I have Vitamin A. I help the eyes. I grow in the ground. What am I? Bunnies like to eat me. What am I?	I come in different colors. I have calcium. Eating me can help the body have healthy teeth and bones. I am made from milk. I can be Swiss or American. What am I?
I come in different colors and shapes. I have carbohydrates. I give the body energy to move. Sometimes people add milk to me or have me as a snack. I am usually eaten in the morning. What am I?	When cooked, I change colors from pink to brown. I have protein. Protein helps the body build strong muscles. Protein also helps the hair. What am I?
I am black. I am used to cook a lot of different meals. I have protein. I have fiber. I am really good with rice or in a salad. What am I?	I am purple, golden, and sometimes other colors. I am used to cook or can be eaten alone. I have Iron. I start out as a type of fruit and am dried. What am I?

I am green on the inside. I am dark green on the outside. I can be eaten alone, in salad, or to make other foods like guacamole. I have fat, Vitamin C, and fiber. What am I?	Hint 1: Hint 2: Hint 3: Hint 4: What am I?

Student Activity Sheet: Nutrient Mystery Cards (Answer Key)

I am green. I help the body see well because I have Vitamin A. I also have Vitamin C to help the body have healthy skin and blood. I am a vegetable. I look like a small tree. What am I? (Broccoli)	I am yellow. I have Vitamin C. Vitamin C helps the blood in the body. Vitamin C helps the body's skin. I am a fruit. I grow on a tree. What am I? (Lemon)
I am white. I have calcium. Drinking me can help your body have strong bones and teeth. I come from a cow. What am I? (Milk)	I am brown and sometimes white. I am a grain. One food I can help make is a peanut butter and jelly sandwich. I have carbohydrates. I give the body energy to run and play. What am I? (Bread)
I am orange. I have Vitamin A. I help the eyes. I grow in the ground. Bunnies like to eat me. What am I? (Carrots)	I come in lots of different colors. I have calcium. Eating me can help the body have healthy teeth and bones. I am made from milk. I can be Swiss or American. What am I? (Cheese)
I come in different colors and shapes. I have carbohydrates. I give the body energy to move.	When cooked, I change colors from pink to brown. I have protein.

Sometimes people add milk to me or have me as a snack. I am usually eaten in the morning. What am I? (Cereal)	Protein helps the body build strong muscles. Protein also helps the hair. What am I? (Meat-Chicken, Beef, or Pork)
I am black. I am used to cook a lot of different meals. I have protein. I have fiber. I am really good with rice or in a salad. What am I? (Black Beans)	I am purple, golden, and sometimes other colors. I am used to cook or can be eaten alone. I have Iron. I start out as a type of fruit and am dried. What am I? (Raisins)
I am green on the inside. I am dark green on the outside. I can be eaten alone, in salad, or to make other foods like guacamole. I have fat, Vitamin C, and fiber. What am I? (Avocado)	