Teaching Nutrition through Math, Science, Language Arts and Health Enhancement

Eat Smart Be Smart

Nifty Nutrients

- **Grade Level:** Third Grade **Lesson Time:** 30 Minutes
- **Integrated Core Subjects:** Math and Health Enhancement
- **Montana Content Standard:** Math Standard 2: Students demonstrate understanding of and an ability to use numbers and operations.
- **Montana Content Standard:** Health Enhancement 1: Students have a basic knowledge and understanding of concepts that promote comprehensive health.
- **Objectives:** Students will identify and compare the six types of nutrients our bodies need; identify the basic function and food sources for each nutrient; identify the sources for the six nutrients from a lunch meal; identify fruit and vegetable serving sizes using half-cup fractions.

Lesson/Activity

1. Introduce the lesson by asking students, "What do you breathe?" (Answer—air.) Ask the students to slowly take a deep breath in through their noses and gently blow the air out through their mouths. Ask them if they can see the air they breathe when they do this. Explain that there are substances in food called nutrients that are like air; we may not see them, but they are essential for our bodies.
2. Discuss that just as we need air to breathe, our bodies need nutrients from food to grow, stay healthy, and have energy for work and play. Distribute a copy of the Nutrients handout to each student and project it onto the board. Introduce the six different types of nutrients and review the different function for each one. Use the What's In Food handout for pictures of food sources of the nutrients. Review the following six classes of nutrients: protein promotes building and repair of tissues (like muscles); fat supplies energy and transports some vitamins; carbohydrates supply our main source of energy and can be a good source of fiber; vitamins promote good health, clear skin, appetite, digestion, enhance iron absorption, and fight infection; and minerals are necessary for maintaining good health, help carry oxygen to the cells, and help build strong bones and teeth. Finally, water is part of all tissues, is needed for digestion, and helps regulate body temperature.
3. Divide the students into six groups and assign each group one class of nutrients. Ask each group to explore the function and the food sources for that specific nutrient. Each group should make a list of the major food sources and names of specific foods for that food group. What does the nutrient do? Ask them to write out the name of their Nutrient on a 4x6 index card. After the students have time to work on this assignment, bring the class together to have each group report on the major nutrients. Have them compare the differences or similarities between the functions of the nutrients. Using the MyPyramid for Kids poster, have them show what foods groups are good sources of that nutrient and have them label the food group on the poster with the nutrient.

Materials Needed

- A MyPlate poster
- 6 - 4x 6 index cards
- A copy of the More Fruits and Vegetables Matters work sheet for each student.
- A copy of the Common Fruit and Vegetable Serving Sizes Chart for each student.
- A copy of the Nutrients handout for each student.
- Teacher Reference Material: Is it a Portion or a Serving Handout and What's In Food handout

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4. After each group of students has had a chance to report to the class, ask the students if they understand better now the reason they need to eat from all of the food groups. What happens if they skip one food group, like dairy? If there are children with food allergies/intolerances in your class, you can point out that the missing nutrients can be obtained from different food items or through a multivitamin supplement. Ask the students what conclusion they draw from this activity.
5. As a class, plan a lunch menu which supplies all six nutrients. Write the menu on the board and identify which nutrients are in each food. For example: A menu of a roast beef sandwich with lettuce, orange, pretzels, milk, and cookie provides all six nutrients (sandwich-bread (carbohydrate), roast beef (protein, iron, fat), lettuce (carbohydrate/water), orange (carbohydrate/water/vitamin C), pretzels (carbohydrate), milk (carbohydrate/protein/water/vitamin D/calcium), cookie (carbohydrate/fat). Have a student volunteer to share what they had for lunch to determine if all six nutrients were represented. Can the students predict if one nutrient (like fat or the mineral, calcium) is high or low in this meal?
6. Since fruits and vegetables are great sources of vitamins and minerals, and most kids don't eat enough of them, distribute a copy of the More Fruits and Vegetables Matter work sheet along with the Common Fruit and Vegetable Serving Sizes chart to each student. After they complete it, review the answers as a class. You could add a component to this work sheet to allow the students to practice recognizing equivalent fractions. For example, if the students know that 12 carrots is equal to 1 cup then 12/12 = 1, then how many carrots would be in 1/2 cup, 1/4 cup or 1/8 cup. Ask the students to show their work.
7. To close the lesson, challenge the students to eat three cups of fruits and vegetables each day. In their health journals, they could record their fruit and vegetable intake for a day this week to analyze if they made this important health goal. A suggestion for meeting this goal is to have a fruit or vegetable with each meal and snack.

Outcome Goals

- Students will be able to name the six nutrients.
- Students will know the basic function and food sources for each nutrient.
- Students will plan a lunch and identify the sources of nutrients for each food.
- Students will identify fruit and vegetable serving sizes using half-cup fractions.

Extending the Lesson

- After the students are comfortable with multiplication, distribute the Nutrient Building Blocks work sheet and have them complete it. This work sheet allows the students to practice their multiplication tables and then form words of the names for each of the six nutrients.

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Acknowledgments/Adapted From

Netx (Nutrition Education of Texas),
Fruits and Vegetables More Matters
www.fruitsandveggiesmorematter.org
and Denise Zimmer, RD