

Energy-Where Do you Get Yours?

Best Practice Goal/ Strategy: Integrating nutrition education with core subjects

Overview of Lesson: review of the six essential nutrients with an emphasis on carbohydrates and energy

Target Population: Middle school and high school physical education, health and science classes

Length of Lesson: 45-60 minutes

Lesson Objectives: Students review the six essential nutrients with an emphasis on carbohydrates and energy. Students obtain an understanding of the amount of sugar contained in drinks and some effects of sugar on the body. Students gain an understanding of the importance of eating a variety of foods to include 5-9 servings of fruits and vegetables a day and staying physically active.

Desired Results Framework: Health Expectations: 1,3,4,5,9
High School Science, Physiology: 9.a, f, Cell Biology: 1
High School Algebra: 13,24
Grade Seven Focus on Life Sciences: 1.a, 5.a, b, c,
Grade Eight Focus

Materials Needed: The following handouts: “The Great Carbohydrate”, “How Sweet it Is!” “Read it Before You Eat it!”. The following posters: “Read it Before You Eat It”, “Savor the Spectrum”.

Media: Overhead Projector

Helpful Information:

Vocabulary: Nutrition: Learning to choose foods that help your body stay strong and feel good. This means eating foods with vitamins and minerals, and eating less of sugary and fatty foods.

Nutrient: The chemical substances in food that your body uses to keep healthy.

Carbohydrates: provide the body with energy. Simple: provide quick energy that if not used is easily stored as fat. Complex: provide long lasting energy that allows you to burn calories.

Advance Preparation: Copy classroom set of handouts. Display posters. Obtain various samples of commonly consumed beverages/bottles with labels. (Can be empty/recyclables). Obtain sugar cubes to represent teaspoons.

Setting the Stage (Introduction): Ask – What drinks do you choose when you have a choice?

Instruction:

- A. Review the 6 essential nutrients: Proteins, carbohydrates, fats, minerals, vitamins and water.
- B. Explain: carbohydrates are found in many foods and in all groups on the Food Guide Pyramid. The grain, fruit and vegetable groups have the largest amounts of carbohydrates, fiber, vitamins, and minerals. Review the number of servings in each of these food groups. Additionally, sources include milk, yogurt, and dried beans (legumes). Sweets like soda, candy and cookies that contain sugar also provide carbohydrates, but unfortunately, these foods usually contain very little of the vitamins, minerals and other essential nutrients we need and can often times be high in saturated and trans fats. Stress the importance of healthy drinks, particularly milk and water and consuming 5-9 servings of fruits and vegetables a day.
- C. Distribute: “The Great Carbohydrate” handout. Have students read handout. (Seeking student volunteers to read a paragraph at a time). Explain to students that this lesson reviews carbohydrates, which is the primary source of energy and emphasis the differences between the “simple” and the “complex” carbohydrates and focus on the amounts of “simple” sugars found in popular drinks.
- D. Distribute: “Carbo Mumbo Jumbo” handout. Review and summarize.
- E. Ask Students: “Where do you find information about the nutrient content of the foods you eat?” Hand out “Read it Before you Eat It!” Refer to the poster. Review the poster and handout with students emphasizing serving sizes, serving per container, get less and enough areas.

Guided Practice:

Have students form groups of 2 to 3 (depending on class size). Distribute: “How Sweet it is!” exercise. Explain to students that this exercise demonstrates how much sugar is added to commonly consumed drinks. Explain the “Nutrition Facts Label” gives necessary and important information needed to understand how much sugar is contained in the drinks. Point out **servings size and sugar content**. Ask students to number, in order from least to greatest, the amount of sugar they think are in each drink, (pause, giving them time to respond).

Explain: Now it is actually time to calculate the amount of sugar in the sample drinks. Pass out one of the sample beverages to each student group and explain the conversion for sugar from grams to teaspoons. **Four (4) grams of sugar equals 1 teaspoon.** You can calculate the number of teaspoons by multiplying the number of grams by the number of servings per container, then dividing by four (4). This gives you the number of teaspoons of sugar. Pass out enough sugar cubes for students to visually display their findings in teaspoons. Pause, give students time to read labels, make calculations and conversions, count out sugar cubes and document their findings. Ask for a representative from each group to share their findings. Post-actual findings (on chart or on white/black board).

Closure/Reflection:

Ask for volunteers to share how their initial guess and actual findings were alike or different.

Ask students: What happens to sugar in your body? Now that you have more information on sugar in drinks, what choices would you make? Suggest to students that they can now identify drinks at home and determine the amount of sugar contained.

Resources:

Nibbles for Health, United States Department of Agriculture, Food and Nutrition Service, FNS-353, December 2002