National Agriculture in the Classroom

Relevancy and Engagement: agclassroom.org

Nutritional Value of Fresh Produce

Grade Level(s)

3 - 5

Estimated Time

One or two 50-minute sessions

Purpose

In this lesson students will learn that fresh produce is a good source of vitamin A, vitamin C, and fiber, and that all fruits and vegetables do not contain the same quantities of each nutrient.

Materials

For each student:

- *Fresh Fruits and Vegetables Nutrition Facts* handout
- *Dietary Fiber, Vitamin A and Vitamin C* bar graph worksheets
- Colored pencils, crayons, or markers
- *Nutrient Comparison* worksheet

For the teacher:

- Document Camera
- Markers

Essential Files (maps, charts, pictures, or documents)

- Fresh Fruits and Vegetables Nutrition Facts handout
  [https://naitc-api.usu.edu/media/uploads/2015/09/24/Fresh_Fruits_and_Vegetables_Nutrition_Facts_handout.pdf]
- Answer Key-Nutrient Comparison worksheet
  [https://naitc-api.usu.edu/media/uploads/2015/09/24/Answer_Key-Nutrient_Comparison_worksheet.pdf]
- Dietary Fiber, Vitamin A, and Vitamin C Bar Graphs
  [https://naitc-api.usu.edu/media/uploads/2015/09/24/Dietary_Fiber_Vit_A_and_Vit_C_bar_graphs.pdf]
- Nutrient Comparison worksheet
  [https://naitc-api.usu.edu/media/uploads/2015/09/24/Nutrient_Comparison_Worksheet.pdf]

Vocabulary

ascorbic acid: another name for vitamin C; necessary in the body for healthy cells

citric acid: organic acid which acts as a natural preservative. It is also used to add an acidic, or sour, taste to foods and beverages

fruit: scientifically speaking, the matured ovary of a flower and its contents; some fruits such as squash are called vegetables because they are vegetation that is prepared for the table

produce: fresh fruits and vegetables

vegetable: edible part of a plant which is generally served as part of a main meal; also known as vegetation that is prepared for the table

Interest Approach – Engagement

1. Ask students to use their prior knowledge to list foods that are healthy for us to eat. Accept all reasonable answers and list several healthy foods on the board. Focus primarily on the fresh fruits and vegetables the students list.
2. Refer to the list on the board and ask students, *What makes these foods healthy for us to eat?* Introduce students to vitamins minerals and fiber. Use the information provided in the *Background Agricultural Connections* section of the lesson to give them a basic understanding of the benefits we receive from vitamins, minerals, and fiber.

Background - Agricultural Connections

This lesson is part of a series called *Fruits and Vegetables for Health*, which introduces students to the production, distribution, and nutritional value of fresh **produce**. Students will gain knowledge in geography, language arts, science, and math as they learn about the process through which **fruits** and **vegetables** are transported from California farms to kitchen tables. Other related lessons in this series include:

- *Making Half MyPlate Fruits and Vegetables*
- *California Crops: From the Farm to the Table*
- *Nutritional Value of Fresh Produce*
- *My Life as a Fruit or Vegetable*

The Percent Daily Value on the Nutrition Facts label is a guide to the nutrients in one serving of food. For example, if the label lists 5 Percent Daily Value for fiber, it means that one serving provides 5 percent of the fiber you need each day.

The Daily Values are average levels of nutrients for a person eating 2,000-calories a day. For children, the amount needed will be slightly lower. Even if a person's diet is higher or lower in calories, they can still use the Percent Daily Value as a guide. Percent daily values are the entire day, not just one snack or meal. For example, the Percent Daily Value can help students determine whether a food is high or low in specific nutrients:

If a food has 5 percent or less of a nutrient, it's considered to be low in that nutrient. If it has 20 percent or more, it's considered to be high in that nutrient.

To get the most benefit from Percent Daily Values, use them to choose foods high in vitamins, minerals and fiber —and to limit foods high in fat, cholesterol, and sodium. This lesson is designed to help students visualize which fruits and vegetables are the richest sources of vitamin A, vitamin C, and fiber.

Vitamin A is essential for maintaining good vision, fighting infection, supporting cell growth, and keeping skin healthy. Research has shown that consuming one serving a day of a food containing vitamin A may help prevent some kinds of cancer.

Vitamin C (**ascorbic acid**) is a powerful antioxidant. These nutrients help protect cells from damage that can increase the risk for certain diseases, such as cancer. Vitamin C helps the body heal cuts and wounds and helps lower the risk of infection.

Dietary fiber naturally occurs in plants, helps provide a feeling of fullness, helps keep your blood sugar level normal, and helps to avoid constipation. Sources of dietary fiber include dry beans and legumes, vegetables, fruits, whole grains, and nuts.

Procedures

1. Distribute copies of the *Fresh Fruits and Vegetables Nutrition Facts* handout to individual students or small groups of two or three. Review one Nutrition Facts label with the class to make certain that students understand how to read them. Using a document camera to show the handout may be helpful.
2. Distribute copies of the *Dietary Fiber, Vitamin A and Vitamin C* bar graph worksheets. Review the procedure for making bar graphs. You may wish to make an example blank graph to use in your explanation of bar graphing. Remind students that all graphs contain the following:
   - labels for the vertical axes
   - a title
   - evenly divided horizontal and vertical axes
   - accurate data
3. Have students complete the bar graphs.
4. Distribute and discuss the *Nutrient Comparison* worksheet. Instruct students to use their bar graphs to complete the worksheet. Discuss the answers.

Variations

- Have students create their own bar graphs on graph paper. Instruct them to label the x- and y-axes, determine appropriate increments, and give their graph a title.
- Have students create large nutrition pictographs or bar graphs for posting or display in the school cafeteria or library.

Concept Elaboration and Evaluation:

After conducting these activities, review and summarize the following key concepts:

- Fruits and vegetables are part of a healthy diet.
- Fruits and vegetables provide vitamins, minerals, and fiber to our diet.

We welcome your feedback! Please take a minute to tell us how to make this lesson better or to give us a few gold stars!

Enriching Activities

- Visit the Harvest of the Month website to access nutrition labels for a variety of fresh produce items. Have students graph additional nutrients for different fruits and vegetables.
- Have a tasting party of the fruits and vegetables you have studied. Ask the students to make a survey of the most popular fruits and vegetables among the class members and prepare graphs that display the results of the survey.

Suggested Companion Resources

- A Seedy Fruit Challenge (Activity)
  [https://www.agclassroom.org/teacher/matrix/resources.cfm?rid=267]
- Plants Feed Me (Book)
  [https://www.agclassroom.org/teacher/matrix/resources.cfm?rid=337]
- How Did That Get in My Lunchbox? (Book)
  [https://www.agclassroom.org/teacher/matrix/resources.cfm?rid=194]

- The Fruits We Eat (Book)

  [https://www.agclassroom.org/teacher/matrix/resources.cfm?rid=203]

- Producepedia (Website)

  [https://www.agclassroom.org/teacher/matrix/resources.cfm?rid=528]

Sources/Credits

This lesson was originally developed in 1996 through a partnership between the Fresh Produce and Floral Council, the California Farm Bureau Federation, and the California Foundation for Agriculture in the Classroom. Fruits and Vegetables for Health was updated in 2012 in partnership with the California Department of Public Health's Network for a Healthy California with funding from USDA SNAP, known in California as CalFresh (formerly Food Stamps). Funding for 2017 updates were provided through a California Agriculture Special Interest License Plate grant (CalAgPlate) that supports agricultural education, agricultural career training, and agricultural leadership development.

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Organization Affiliation

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