

How Much Vitamin C?

Objective

In this lesson students learn how to read nutrition labels and compare the amount of Vitamin C in different fruits and vegetables.

Grade level

For grades 3 - 5

Time

30 minutes

Materials

- Nutrition Facts Label Example [PDF]
- Nutrition Facts Label from various fruits and vegetables These can be found on the packaging for the fruits and veggies or various websites also provide the information. Some suggested fruits and veggies to use are oranges, lemons, bananas, watermelon, apples, carrots and potatoes.
- Graph Paper
- Color Pencils

Background

Vitamin C is an important nutrient for a healthy lifestyle. It helps boost our immune systems, which may protect us, especially during the winter months when people tend to get sick. Vitamin C is also helpful in maintaining good eye health and healing wounds and infections.¹

Oranges have more than 100% of the amount of Vitamin C that we should eat in one day! The recommended Daily Allowance of Vitamin C for kids is 25 mg for ages 4– 8 and 45 mg for 9- to 13-year-olds. Adults should have 75– 90 mg each day.²

Nutrition Facts Labels provide information about the nutritional composition of foods to make it easier to know what is healthy and be able to compare different foods. The label is broken down into several parts. At the top is the serving size information and servings per container.

Next come the calories per serving. Underneath the calories are both nutrients that should be limited (fat, cholesterol, sodium) as well as nutrients that should be promoted (fiber, calcium, Vitamin C, etc).

On the Label is listed both the actual amount as well as the % Daily Value. At a high level: 5% or less Daily Value is considered low and 20% or more Daily Value is considered high.³

1 - Web MD http://www.webmd.com/search/search_results/default.aspx?query=vitamin%20&sourceType=undefined

2 - Linus Pauling Institute <http://lpi.oregonstate.edu/infocenter/vitamins/vitaminC/>

3 - FDA <http://www.cfsan.fda.gov/~dms/foodlab.html>

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Procedure

1. Review the parts of the Nutrition Facts Label as a class.
2. Pass out the Nutrition Facts Label example and have students answer questions about the label:
 - a. How many calories are in a serving of orange? [75]
 - b. How much fiber is in a serving of orange? [3 g]
 - c. What percentage of your Daily Value of Vitamin C does an orange provide? [152%]
3. Explain that students will be comparing the amount of Vitamin C in different fruits and vegetables.
4. Show the fruits and vegetables that they will be comparing and have students hypothesize which ones will be the highest and lowest in Vitamin C. Make sure they explain why they think one will be high or low.
5. Have students look at the Nutrition Facts Label and record the % Daily Value of Vitamin C for each item.
6. After students have recorded each item, they should graph the items from highest to lowest. Also have students label and color in their graph.
7. Did any students hypothesize correctly? Was anything surprising about the results? If they want to get the most Vitamin C, what should they eat?
8. Let students sample the different fruits and vegetables when they are done.

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Standards Correlation

Lesson content was developed to meet the National Science Standards and California State Science Standards and Frameworks. Each standard addressed is indicated below.

To view a full list of National Math Standards please visit the National Council of Teachers or Mathematics [<http://standards.nctm.org/document/index.htm>] website. To view a full list of National Health Standards please visit the CDC [<http://www.cdc.gov/healthyyouth/ser/standards/>] website. To view a full list of California State Standards please visit the California State Board of Education [<http://www.cde.ca.gov/be/st/ss/>] website.

National Science Standards

Grades 3 - 5

Measurement

Understand measurable attributes of objects and the units, systems and processes of measurement

- Understand the need for measuring with standard units and become familiar with standard units in the customary and metric systems;

Data

Formulate questions that can be addressed with data and collect, organize and display relevant data to answer

- Collect data using observations, surveys and experiments
- Represent data using tables and graphs such as line plots, bar graphs and line graphs

National Health Education Standards

Grades K - 4

Health Information, Products and Services

Students will identify characteristics of valid health information and health-promoting products and services.

- Demonstrate the ability to locate resources from home, school and community that provide valid health information.

Grades 5-8

Health Information, Products and Services

Students will demonstrate the ability to access valid health information and health-promoting products and services.

- Analyze the validity of health information, products and services.
- Demonstrate the ability to utilize resources from home, school and community that provide valid health information.

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California State Math Standards and Frameworks

Grade 4

Statistics, Data Analysis, and Probability

1.0 Students organize, represent and interpret numerical and categorical data and clearly communicate their findings:

1.3 Interpret one- and two-variable data graphs to answer questions about a situation.

Grade 5

Statistics, Data Analysis, and Probability

1.0 Students display, analyze, compare and interpret different data sets, including data sets of different sizes:

1.2 Organize and display single-variable data in appropriate graphs and representations (e.g., histogram, circle graphs), and explain which types of graphs are appropriate for various data sets.