

Nutrition Facts
Serving Size: 1 Medium (152g/4.2oz)
Servings per Container: 1

Amount Per Serving

Calories 10	Calories from Fat 7
Total Fat 0.5g	0%
Saturated Fat 0.1g	0%
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 25.1g	8%
Dietary Fiber 4.4g	17%
Sugars 18.0g	
Protein 0.5g	
Vitamins & Minerals	
Vitamin A 2%	Vitamin C 4%
Calcium 1%	Iron 1%

Composite image by M.S. Young © Baylor College of Medicine.


Using Food Labels

The Science of Food: Activity 9

Nancy Moreno, PhD.
Barbara Tharp, MS.

Center for
Educational Outreach

Baylor College of Medicine



BioEd Online

Using Food Labels

This activity's objectives are aligned with the National Science Education Standards, specifically those related to Science as Inquiry and Physical Science. In this activity, students learn about and use food labels to promote thinking about healthful eating. They also will explore units of measurement commonly used on food labels. Student will make and compare measurements, make observations, and draw conclusions.

The primary science concept addressed in this activity is that food labels provide important information about the nutritional value of foods.

Student Worksheets

Student pages in the teacher's guide are provided in English and in Spanish.

Reference

Moreno N., and B. Tharp. (2011). *The Science of Food: Teacher's Guide*. Fourth edition. Baylor College of Medicine. ISBN: 978-1-888997-76-7. Development of this student activity was supported, in part, by grant numbers R25 ES06932 and R2510698 from the National Institute of Environmental Health Sciences of the National Institutes of Health to Baylor College of Medicine.

Image Reference

Composite image by M.S. Young © Baylor College of Medicine.

Key Words

food, nutrition, food label,

Using Food Labels © Baylor College of Medicine.

Materials



BioEd Online

Materials

Have students work in groups 2-4 to plan and carry out this activity.

Per Group of Students

- 1 cup of white sugar
- Measuring cup
- Measuring spoon

Per Student

Copy of "From the Label to the Table!"

Copy of "Sugar Measures Up"

Setup

Set up sugar and other materials in a central location.

Reference

Moreno N., and B. Tharp. (2011). *The Science of Food: Teacher's Guide*. Fourth edition. Baylor College of Medicine. ISBN: 978-1-888997-76-7. Development of this student activity was supported, in part, by grant numbers R25 ES06932 and R2510698 from the National Institute of Environmental Health Sciences of the National Institutes

of Health to Baylor College of Medicine.

Image Reference

Photo by Christopher Burnett and Michael Vu © Baylor College of Medicine.

Key Words

materials list, materials needed,

Using Food Labels © Baylor College of Medicine.

Science Safety Considerations

- Follow all instructions.
- Begin investigation only when instructed.
- Report accidents.
- Do not eat or drink during the experiment.
- Wash hands thoroughly after the investigation.



BioEd Online

Science Safety Considerations

Students always must think about safety when conducting science investigations. This slide may be used to review safety with your class prior to beginning the activity.

Safety first!

- Always school district and school science laboratory safety guidelines.
- Have a clear understanding of the investigation in advance.
- Practice any investigation with which you are not familiar before conducting it with the class.
- Make sure appropriate safety equipment, such as safety goggles, is available.
- Continually monitor the area where the investigation is being conducted.

References

1. Dean R., M. Dean, and L. Motz. (2003). *Safety in the Elementary Science Classroom*. National Science Teachers Association.
2. Moreno N., and B. Tharp. (2011). *The Science of Food Teacher's Guide*. Fourth edition. Baylor College of Medicine. ISBN: 978-1-888997-76-7. Development of this student activity was supported, in part, by grant numbers R25 ES06932 and R2510698 from the National Institute of Environmental Health Sciences of the National Institutes of Health to Baylor College of Medicine.

Key Words

science, classroom, safety, lab, laboratory, rules, safety signs,

Using Food Labels © Baylor College of Medicine.

What Are Food Labels?

- Have you ever noticed the nutrition information labels on packaged foods?
- What kinds of information do these labels provide?
- Why are food labels important?
- Do food labels help you make better choices about what foods you eat?

Nutrition Facts	
Serving Size 1 cup (228g)	
Serving Per Container 2	
Amount Per Serving	
Calories 250	Calories from Fat 110
% Daily Value*	
Total Fat 12g	18%
Saturated Fat 3g	15%
Trans Fat 3g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A 4%	Vitamin C 2%
Calcium 20%	Iron 4%
* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
Calories: 2,000 2,500	
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g



BioEd Online

What Are Food Labels?

Remind students of the “Healthy Eating” activity they used at the beginning of this unit. They learned that it is important to: balance the foods we eat with physical activity; consume plenty of grain products, vegetables and fruits; choose a diet low in fat, saturated fat and cholesterol; and moderate our intake of sugars and salt.

Distribute copies of the “From the Label to the Table!” student page. Have students read the label on the student page out loud in their groups.

To focus students’ attention, begin by asking questions like, *What are food labels? Have you noticed that packaged foods now have uniform labels that provide information about the nutritional value of foods? How can we be sure that the foods we eat each day contain the nutrients we need? and Why do you think food labels are important?*

Use the “From the Label to the Table!” worksheet to help students understand that the nutritional information provided on food labels helps people make better choices about which foods to buy and eat. Explain that the labels include information related to serving size, calories, fat, carbohydrates, sodium, protein, vitamins, and minerals. Tell students that labels also provide nutrient reference values, expressed as “% Daily Values,” to help consumers understand how a food fits into an overall daily diet. Inform students that they will find out how much sugar is contained in a typical soft drink.

Reference

Moreno N., and B. Tharp. (2011). *The Science of Food: Teacher’s Guide*. Fourth

edition. Baylor College of Medicine. ISBN: 978-1-888997-76-7. Development of this student activity was supported, in part, by grant numbers R25 ES06932 and R2510698 from the National Institute of Environmental Health Sciences of the National Institutes of Health to Baylor College of Medicine.

Food label courtesy of the U.S. Food and Drug Administration. Public domain.
<http://www.fda.gov/Food/IngredientsPackagingLabeling/LabelingNutrition/ucm114155.htm>

Key Words

food, nutrition, food label, nutrition, nutrition facts, serving, serving size, calories, fat, cholesterol, sodium, sugar, grams, mg, carbohydrate, trans fat, saturated fat, protein, vitamins, minerals, fiber,

Using Food Labels © Baylor College of Medicine.

Let's Get Started

- Using the “Sugar Measures Up” worksheet, predict how much sugar is in a typical soft drink can.
- Mark your prediction on the measuring cup.
- Using the following information, figure out how many teaspoons of sugar are in a soft drink.
 - A 12-oz can of soft drink contains 40 grams of sugar.
 - 1 teaspoon of sugar weighs 4 grams.
- Add the appropriate number of teaspoons of sugar into the measuring cup.
- On the measuring cup, draw a line showing the actual amount of sugar in a soft drink.



BioEd Online

Let's Get Started

In this activity, students will determine the amount of sugar in a typical soft drink. In the process, they also will explore the units of measurement commonly used on food labels and learn about healthful eating.

Have student groups follow the instructions on the “Sugar Measures Up” page to determine the amount of sugar contained in a typical soft drink. Students will begin by predicting the number of teaspoons of dissolved sugar in one ordinary (12-oz) can of their favorite soft drink. On the measuring cup shown on the worksheet, students should draw a line to indicate the amount of sugar they predict is in one can of soft drink.

Next, students will use the following information to answer the question, “How many teaspoons of sugar are in a can of soft drink?”

- An average 12-ounce can of soft drink contains about 40 grams of sugar.
- One teaspoon of sugar weighs 4 grams.

Students should add the appropriate number of teaspoons of sugar into the measuring cup. Have students observe the amount of sugar actually in the cup and ask, *Is this more or less sugar than you predicted would be in the can of soft drink?* On the measuring cup shown on the worksheet, students should draw a line to indicate the actual amount of sugar in a can of their soft drink.

Reference

Moreno N., and B. Tharp. (2011). *The Science of Food: Teacher's Guide*. Fourth edition. Baylor College of Medicine. ISBN: 978-1-888997-76-7. Development of this student activity was supported, in part, by grant numbers R25 ES06932 and R2510698 from the National Institute of Environmental Health Sciences of the National Institutes of Health to Baylor College of Medicine.

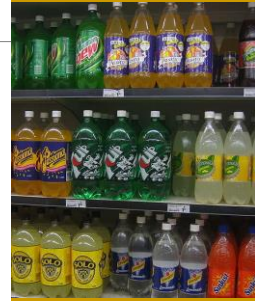
Key Words

lesson, experiment, food, nutrition, food label, nutrition facts, serving, serving size, sugar, calories, fat, cholesterol, sodium, grams, mg, carbohydrate, trans fat, saturated fat, protein, vitamins, minerals, fiber,

Using Food Labels © Baylor College of Medicine.

Let's Talk About It

- How many teaspoons of sugar did you add to the measuring cup?
- Were you surprised about the amount of sugar in one can of soft drink?
- How many cans would you have to drink to meet your daily total carbohydrate requirement?
- Do you think that would be a good way to fuel your body?



Many sodas, cookies, candies, processed snack foods, and fried foods contain large amounts of sugar or fat.



BioEd Online

Let's Talk About It

Using Food Labels teaches students that food labels provide important information about the nutritional value of foods. Students will investigate the amount of sugar contained in a typical soft drink. They also will become familiar with the units of measurement commonly used on food labels and learn about healthful eating.

After the activity, ask the class, *How many teaspoons of sugar did you put into the measuring cup? Were you surprised by the amount of sugar in one soft drink? How many soft drinks would you need to meet your daily total carbohydrate requirement? Do you think that that would be a good way to fuel your body?*

Reference

Moreno N., and B. Tharp. (2011). *The Science of Food: Teacher's Guide*. Fourth edition. Baylor College of Medicine. ISBN: 978-1-888997-76-7. Development of this student activity was supported, in part, by grant numbers R25 ES06932 and R2510698 from the National Institute of Environmental Health Sciences of the National Institutes of Health to Baylor College of Medicine.

Image Reference

Photo courtesy of SMC. Released into the public domain.
http://commons.wikimedia.org/wiki/File:Soft_drink_shelf.JPG

Key Words

lesson, experiment, food, nutrition, food label, nutrition facts, serving, serving size, calories, sugar, fat, cholesterol, sodium, grams, mg, carbohydrate, trans fat, saturated fat, protein, vitamins, minerals, fiber,

Using Food Labels © Baylor College of Medicine.

The Science Behind Food Labels

- **Serving size:** amount of food containing the amount of nutrients on the food label.
- **Calories:** the amount of energy provided by the serving size of the food.
- **Fat, Cholesterol, Sodium:** not healthy when eaten in excess.
- **Fiber, Minerals, Vitamins:** necessary for good health, they are found mostly in fruits and vegetables.



BioEd Online

The Science Behind Food Labels

In this activity, students learned that food labels provide important information about the nutritional value of foods. Additional key points that may be conveyed by the activity include the following.

- Serving size is the amount of food on which the nutrition facts are based. If someone eats more than the serving size, he or she will receive more of the calories and nutrients than the amounts shown on the label. Serving sizes often are smaller than the amount a typical person might eat.
- Calories measure the amount of energy a food can provide. Most people need 2,000 to 2,500 calories each day to meet their energy needs.
- Calories from Fat is the number of calories that come from fats and oils in a food.
- Total Fat gives the weight of all the fat in one serving. Most people should have less than 65 g of fat each day.
- Saturated Fat indicates the weight of unhealthful fats in one serving. Common saturated fats are lard, butter, shortening and coconut oil.
- Trans Fat is another unhealthy form of fat. It is created during the manufacturing of vegetable shortening and some margarines.
- Sodium is the amount of salt in a food. Some people need to restrict the amount of salt in their diets.

- Total Carbohydrate shows the amount sugars, starches and different kinds of fiber in one serving of the food. Most people eat too much sugar. Brown sugar, molasses, honey and corn syrup all are sugars.
- Dietary fiber is important to health.
- Protein is essential for building muscles and for many body functions.
- Vitamins and Minerals are materials in food that are necessary for health. It is important to meet 100% of the daily requirements of vitamins and minerals by including 5–9 servings of fruits and vegetables in each day's diet.

Reference

Moreno N., and B. Tharp. (2011). *The Science of Food: Teacher's Guide*. Fourth edition. Baylor College of Medicine. ISBN: 978-1-888997-76-7. Development of this student activity was supported, in part, by grant numbers R25 ES06932 and R2510698 from the National Institute of Environmental Health Sciences of the National Institutes of Health to Baylor College of Medicine.

Key Words

lesson, experiment, food, nutrition, food label, nutrition, nutrition facts, serving, serving size, calories, fat, cholesterol, sodium, sugar, grams, mg, carbohydrate, trans fat, saturated fat, protein, vitamins, minerals, fiber,

Using Food Labels © Baylor College of Medicine.

Extensions

- Investigate how much sugar is in other food products.
 - Chips
 - Cookies
 - Ice cream
 - Milk
 - Bananas
- Graph the amount of sugar in each food.
- Compare how much sugar is in “healthy” versus “junk” food.



A healthy diet contains foods that are low in fat and calorie content.



BioEd Online

Extensions

• Investigate how much sugar is in other food products, such as chips, cookies, ice cream, milk, bananas, etc. Then, graph the amount of sugar in each food you investigated.

• Compare how much sugar is in a “healthy” food,” such as milk, versus a “junk” food, such as cookies.

Reference

Moreno N., and B. Tharp. (2011). *The Science of Food: Teacher’s Guide*. Fourth edition. Baylor College of Medicine. ISBN: 978-1-888997-76-7. Development of this student activity was supported, in part, by grant numbers R25 ES06932 and R2510698 from the National Institute of Environmental Health Sciences of the National Institutes of Health to Baylor College of Medicine.

Image Reference

Photo courtesy of I. Prole. Getty Images: Free Images\ 1290601.
<http://www.freeimages.com/photo/1290601>

Key Words

lesson, experiment, extension, food, serving, serving size, calories, sugar, junk food, sweets,

Using Food Labels © Baylor College of Medicine.